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EDITORIAL

TIMO PARTONEN, EDITOR IN CHIEF

THE 50TH VOLUME COMES BEARING WHIZZES FROM THE WINGS OF HISTORY

You are browsing the 50th volume of Psychiatria Fennica (Finnish psychiatry, suomalaista psykiatriaa). This publication series was started as the yearbook of the Psychiatric Clinic of the Helsinki University Central Hospital in 1970. So, on the one hand, it was a local publication, but on the other hand, the first volume was a great exhibition of psychiatric research in Finland, being like the Crystal Palace of Finnish psychiatry. It included an impressive number of articles laid out on 300 pages.

On the following pages, you will find a mixture of articles providing new original data and reviews on current topics of interest for Finnish psychiatrists. In addition to these new views on Finnish psychiatry, there are vintage reprints of three original articles of the first volume as well as those of five Lapinlahti Lectures starting with the first one from 1978 and the remaining four from the 1980s. The name for this lecture series was adopted after the Lapinlahti Hospital, which was one of the oldest psychiatric clinics in the world located on a small peninsula of natural beauty and was run in the original premises without interruption from 1841 to 2008. More than ten years have passed since its closure, but there is not yet a decision into which activities this property, including the listed building, will be transformed.

Like a cherry on top of a cake, there is an interview of Jouko Lönnqvist, the former (second) Editor-in-Chief. I advise you to also read the obituary of Kalle Achté, the former (first) Editor-in-Chief, as published by the Foundation for Psychiatric Research (see http://www.psykiatriantutkimussaatio.fi/index.php?tid=48).

Here, I wish all the best to Psychiatria Fennica, whatever form it may take in the future, and I want to propose a silent toast with the following greeting: “Ja, må hen leva! Ja, må hen leva! Ja, må hen leva uti hundrade år!” Enjoy right now, not later.

Timo Partonen
Editor-in-Chief, Psychiatria Fennica
ACKNOWLEDGEMENTS

Here, we want to thank and express our gratitude to all the contributors and supporters of Psychiatria Fennica over the 50 years.

Timo Partonen, on behalf of the editorial board, Editor-in-Chief
Tiia Pirkola, on behalf of the publisher, Chief Executive Officer
Psychiatria Fennica was created by Kalle Achté, and Jouko Lönnqvist served as the editor-in-chief for 16 years.
“Perhaps we should have taken a more polemic approach”, he ponders.

Sometimes a permanent institution begins almost by chance, from a project that was intended to be one-off or temporary. That also happened to Psychiatria Fennica, a yearbook in psychiatry whose publication began half a century ago.

A book published in celebration of professor Martti Kaila’s 70th birthday in February 1970 was a precursor to the current Psychiatria Fennica. Martti Kaila (1900–1978), the father of Finnish psychiatry, worked as a Professor of Psychiatry at the University of Helsinki and as Chief Physician of the Lapinlahti Hospital from 1948 to 1967.

Kaila’s younger colleagues who compiled the commemorative book were convinced that a similar collection of professional articles should be published annually.

“The main driver was the profuse productivity of Kalle Achté [1928–2019], Kaila’s successor. When he started as a professor, he immediately embarked on various reforms in the research field and hospital work. As a result, we got day hospitals, a series of doctoral theses and monographs and, as part of his reformation of the field, Achté also wanted to start a yearbook in psychiatry”, says Jouko Lönnqvist (born in 1943), a Professor Emeritus of Psychiatry.

“Achté had already established the Finnish Foundation for Psychiatric Research, which started to publish the Psychiatria Fennica together with the University of Helsinki and the Helsinki University Central Hospital”, Lönnqvist adds.

In the early days, the foundation also published works that popularised psychiatry but that branch dried up by the end of 1980s.

Funding for the yearbook was also channelled through the Finnish Foundation for Psychiatric Research. In the first decades, the book featured plenty of drug advertisements, and the advertising revenue paid for most of the printing and distribution costs, but the volume of advertisements has decreased since then.

Right from the start, English became the established language of the yearbook, and the publication has remained free of charge to its readers. At first, the majority of the edition of 300–400 copies was sent to experts in the field around the world – it was a network that Achté was constantly creating and expanding when participating in research conferences on psychiatry abroad.

"Psychiatria Fennica was the first international gambit in Finnish psychiatry, Kalle’s calling card, so to speak”, explains Lönnqvist. “His generation was more familiar with German, but he also boldly communicated in English, a language he learned later in life.”
LONG CAREER AS THE EDITOR-IN-CHIEF

Jouko Lönnqvist met Achté through work already in the 1960s, earned his doctorate in psychiatry in 1977 under Achté’s guidance and joined the National Public Health Institute as a research professor in 1986. He served as a professor of psychiatry at the University of Helsinki from 2004 to 2011.

For 16 years, from 1992 to 2008, he was the Editor-in-Chief for the Psychiatria Fennica.

“I wasn’t part of the yearbook’s editorial staff from the very beginning. I joined in 1972. During Kalle’s time, the yearbook was practically edited at the Psychiatric Clinic of the Helsinki University Central Hospital, but under my leadership, the editorial work was mainly carried out in my department at the National Public Health Institute of Finland in Ruskeasuo, Helsinki.”

The yearbook has remained an expert publication but it has gone through changes over time. Today, the size of the edition is 1,500 copies, and free copies are no longer sent to foreign researchers. It was decided recently to distribute Psychiatria Fennica to the members of the Finnish Psychiatric Association. At the moment, there are approximately 1,300 members, meaning that a few hundred copies are left to be distributed elsewhere.

The form of publication has also changed. The last printed version was published in 2016, and the first online version was published in the following year.

In 2003, Achté stepped down from the lead role at the Finnish Foundation for Psychiatric Research, to be followed by Lönnqvist. Subsequently, the yearbook still continued to be edited and published according to the established principles – guided largely by the wishes of Achté.

“A strong emphasis remained on the Finnish qualities and our identity. Naturally, we didn’t close our eyes to the international trends in psychiatry but there was a clear need and will to keep the yearbook as the first forum of our young specialising psychiatrists”, says Lönnqvist.

“We even conducted a reader survey, and the main result was that readers wanted us to keep the same focus.”

Now-a-days, approximately fifteen doctoral theses in psychiatry are examined annually in Finland. The yearbook is a natural start for the publication path of people working on their doctoral thesis and post doc researchers.

OPEN BUT NOT VERY SOCIALLY-ORIENTED

Lönnqvist looks at his long career as the Editor-in-Chief serenely. There were no other publications like Psychiatria Fennica in the Nordic countries but similar annual and clinic publications have been compiled in the universities around the world, starting from Harvard. The tradition exists.

According to Lönnqvist, open diversity is the encompassing principle of the yearbook. “We inherited this principle from Achté, just like he wanted. He had, after all, a conciliatory personality but in the scientific sense he was also an eclectic who let all the flowers bloom in psychiatry, so why not also in Psychiatria Fennia”, describes Lönnqvist.

“The yearbook equally featured psychoanalysts, social psychiatry and biological psychiatry.”

According to Lönnqvist, the more social trends of psychiatry, such as antipsychiatry, did not gain a foothold in the yearbook. The neo-leftism of 1960s did not end up on the pages because it was more inclined towards social science.

“In their hearts, all psychiatrists veer towards the left in the sense that compassion towards people who suffer is an essential element of our work”, he says. “And I’m speaking of seeing and understanding human misery, not following any social or economic doctrines.”

A PINCH OF SELF-CRITICISM

Lönnqvist gives a concise summary of the lasting significance of Psychiatria Fennica.

“At first, it was essential to build an international network to open up our rather insular attitude towards psychiatry.”

“Our second task was to encourage our Finnish colleagues to become international, follow the trends in the field and to make connections.”

“The third task was, and still is, to offer a sort of a training ground for new writers.”
“I think that we have succeeded rather well in these key tasks.”

Jouko Lönnqvist is also willing to engage in self-criticism. “When looking back, I think that we could and should have popularised the yearbook. Instead of being a purely scientific publication, we could have taken a more deliberative, even a polemic approach. We have not seen any debates, let alone disputes or arguments”, he ponders. “That would be more suitable for an online publication.”

In his opinion, the publication language could be switched to Finnish because international networks are built differently today.

But now let the publication speak for itself, in one language or another.

Veli-Pekka Leppänen
The writer is a Doctor of Social Sciences, a researcher in history and a freelance editor.
PSYCHIATRIA FENNICA, 1970
INTERNATIONAL EDITION

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Year: 1970

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Author: PIRKKO IDÄNPÄÄN-HEIKKILÄ
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WITH DERMATITIS HERPETIFORMIS
Author: AIRA LAIHINEN, KIRSTI BLOMQVIST
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A STUDY OF THE TRAINABILITY OF CERTAIN PRIMARY MENTAL ABILITIES

by Hilkka Valtonen

In the present investigation, which was supervised by Lohtevaara, experiments were conducted on the trainability of certain mental abilities (Numerical Ability, Mathematical Reasoning, Verbal Comprehension, and Word Fluency). The technique used was a new modification of the co-twin control method described by Gesell and Thompson (1941). The subjects were 10 pairs of 11 to 12-year-old identical twins. First, the subjects were given a general intelligence test, several group factor tests, and the Rorschach Test. After that, the twins were trained on 10 days, for 1/2 hour at a sitting; one member of each pair being trained on N and R type tasks, the other on V and W type ones. The final testing was carried out immediately after the training phase, always using the same tests as in the initial testing. The groups under comparison showed at least a statistically significant difference in every N, V and W test, i.e. tests of a type similar to the tasks used in the training. The trained groups both showed highly significant rises in their mean scores in tests preceded by coaching with tasks of a similar type. Moreover, strong transfer was observed in tests on which there had been no preliminary coaching by means of related tasks.

To ask "whether a given trait or function is produced by heredity or environment" is no longer considered the proper approach to research in modern genetic psychology. The current view is expressed by Anastasi as follows: "It is not a question of establishing whether a trait depends upon heredity or environment, or of determining the proportional contribution of heredity and environment. Rather, the object of such research should be to try to identify the specific hereditary and environmental factors involved in the development of each function and the ways in which these factors operate in producing the observed individual differences."

The modern approach to research aims at explaining interindividual differences, that is, variance within a trait or function. In genetic psychology, the sources of interindividual variance are divided into groups of factors as follows: genetic variance, environmental variance, and the variance of interaction of the two.

Genetic factors are the most difficult to control because each member of a sexually reproducing population is genetically unique. There is a notable exception to this viz. identical twins. In controlling environmental factors the essential question is whether we know which environmental factors are relevant to a given function. In cases where the genetical factors are controllable, by comparison of identical members of a pair, it is also possible experimentally to study the question: which environmental factors have a bearing on a given trait or function. So far the variance of interaction of genetic and environmental factors has been an almost totally neglected subject in the research of human subjects.

The present study was carried out at Helsinki University in 1964. Its primary object was to examine the influence of environmental factors on the interindividual variability of certain mental abilities. Genetic variance was controlled by using a group of controls that were genetically identical with the subjects, consisting as they did of iden-
tical twins. The experimental environmental factor was training.

TRAINING AND INTELLIGENCE

Improved performance resulting from repetition is characteristic of training. During the training, performance becomes faster, and, following the principle of economy, is concentrated on producing, by as few means as possible, a result that is as satisfactory as possible. With practice in complicated functions concentration is also likely to be attended with the rise of new patterns of organization and solution conductive to attaining the goal. Individuals differ in how quickly they are able to extract the right approach and/or in the number of possible solutions they invent. As soon as an activity can be performed flexibly, or once a solution has been found, it does not necessarily demand attention any more. Instead, the experience gained can be used to solve new problems and to attain fresh performances. An activity that has been learned previously may gradually develop into an automatism which can be utilized as an element in solving new, closely related problems or in developing new functions. In such a case the performance that has been learned is said to have a transfer effect on these tasks.

During the entire development of the individual, the environment exerts an influence on the individual's training activity by motivating, rewarding and punishing him, by teaching, and by providing him with different patterns of behaviour. There have been several reports (Vernon, Owens, Benz, Bayley and Oden; surveyed by Undeutsch, 1959) to the effect that mental performance increases until quite an old age in those areas which the individual continues to practice. Thus it is conceivable that, in mental performance there is something comparable to profligacy, something that is the result of the individual's intellectual potential and trainability factors. This view is also supported by the fact that it has not been possible to eliminate the influence of education from intelligence tests. Some investigators, e.g. Hebb, are of the opinion that elimination of the role of experience (from the intelligence tests) is not called for at that (Hebb, 1961). On the other hand, Cattell holds that ordinary intelligence tests as well as those which are called culture free tests measure different kinds of intelligence: the former tests measure a crystallized ability which is composed of skills in the perception of relations attained in specific fields: the latter measure a fluid relation-perceiving ability which is independent of perceptual content and most evident in fields where there are no acquired specific skills (Cattell, 1957).

Provided that the above view of intelligence is a tenable one, training directed at certain mental performances ought to result in (a) improved performance in the corresponding functions, (b) transfer effects on other mental performances. The aim of the present study was to test this hypothesis.

METHOD AND MATERIALS

The method which enables the genetic factors to be controlled is that of cotwin control. It consists in comparing the members of monozygotic twin pairs. Gesell and Thompson were the first to use this method in 1941. They studied the relative importance of learning and maturation by comparing the performances of identical members of a pair after only one member had been trained in a motor performance.

Supposing it were intended to study the effect of training on a given primary mental ability, it would be only natural to train only one member of a pair, while letting the other develop freely. However, since the training session bears some resemblance to the testing session, habituation to the situation might improve the scores of the trained group compared with the control group more than training merely the specific factor would presuppose. In order to equally familiarize the groups to be compared with the test situation and the attendant factors, the co-twin control method was modified in this study by training both members of a pair simultaneously but in different types of performances. Accordingly, the groups of members of pairs under comparison serve as test groups on the one hand, and as each other's control groups on the other. This also makes it possible
to examine twice the amount of factors in a short time.

The factors to be studied were chosen within the areas of verbal and mathematical ability. In designing the intelligence tests they were heavily weighted in favour of these areas; indeed, the environment both at home and in school appreciates and strives to develop verbal and mathematical performances. Consequently their trainability is of great practical importance.

The factors to be studied were N, R, V and W, all of which are included in Thurstone's Primary Mental Abilities.

N. Numerical Ability. Most closely identified with speed and accuracy of simple arithmetic computation. In the present study the N factor is represented by 3 tests: 1. Kraepelin's Addition Test (abbr. Kraepelin); 2. Completion of Addition Tasks (abbr. CA); 3. two parallel forms of task series to be done by simple mental arithmetic.

R. Mathematical Reasoning. This factor was measured with tests of a predominantly mathematical character, viz. Number Series and Arithmetical Problems.

V. Verbal Comprehension, the ability to comprehend verbal relations. The two tests used were the Sentence Completion Test and Antonyms.

W. Word Fluency, found in such tests as anagrams, rhyming, or naming words in a given category. It was tested by means of Anagrams and by having the subject name words beginning with the letter k and ending in a (abbr. K-a).

The above tests were administered before the training phase and immediately thereafter. Furthermore, before the training phase, the subjects were given an intelligence test of the Termanko type as standardized in Finland by Lehtovaara (TML); also the WISC (Wechsler Intelligence Scale for Children) subtests Block Design and Coding; Raven's Progressive Matrices; a test of Space Relations; and the Rorschach Test. Raven's Progressive Matrices and the Block Design are generally recognized as being well suited to measuring the general intelligence factor, g.

All the tests, except the TML, were administered after the training phase, too.

The subjects selected were coeals, 11 to 12-year-old twins from Helsinki (19 pairs, N = 38; mean age 11 years 9 months). This was to ensure an identical degree of intellectual differentiation among the subjects and to preclude the influence of differences in schooling.

The Mental Ages of the subjects ranged from 112 to 211 months, average MA 149.1 months, standard deviation 21.5 months. Their IQ's ranged between 80 and 135, mean 106.0, standard deviation 12.2. Both distributions approach normal.

The diagnosis of identity was based on the polysymptomatic method developed by Siemens and von Verschuer.

The training took place during a period of ten days. The one group (designated as Group N) was trained with numerical tasks, the other (designated as Group V) with verbal ones. Both members of a pair were allowed to practice simultaneously, and the duration of training was about 1/2 hour each day. In arranging the sessions care was taken to prevent the members of a pair from seeing each other while practising and from having a knowledge of each other's tasks. The aim in designing the tasks used in training was to have them formally resemble the factor tests while differing in their item content. The numerical-mathematical training programme contained altogether 7 Number series of 20 items each as well as 21 series of simple mathematical operations. The verbal training programme contained 8 series of V-type tasks and 40 tasks of type W. The training situation contained no teaching or correcting of errors on the part of the examiner. The training took the form of spontaneous practice. The testing and training were carried out in the subjects' homes.
Table 1.
The ranges, means, and standard deviations of the scores on the initial trial (I) and the final trial (II). N = numerically trained group. V = verbally trained group.

<table>
<thead>
<tr>
<th></th>
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<th>mean</th>
<th>standard deviation</th>
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<td></td>
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<td>I</td>
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<tr>
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<td>13-51</td>
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<td>18-53</td>
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<td>V</td>
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<td>26-52</td>
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<td>N</td>
<td>18-47</td>
<td>18-53</td>
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<td></td>
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<td>10-41</td>
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<td>N</td>
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<td>8-53</td>
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<tr>
<td></td>
<td>V</td>
<td>14-52</td>
<td>26-55</td>
</tr>
<tr>
<td>Sentence Compl. (6 min.)</td>
<td>N</td>
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<td>N</td>
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<td>52-218</td>
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<td>V</td>
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<td>44-192</td>
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<td>53-207</td>
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<td>V</td>
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<td>23-69</td>
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<td>4-28</td>
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<tr>
<td></td>
<td>V</td>
<td>4-26</td>
<td>7-26</td>
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Table 2.

The means of the intrapair differences; MD and the ratio of the mean of the intrapair differences to the corresponding standard deviation of raw scores, MD/s.

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<td>TML MA</td>
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</tr>
<tr>
<td>Antonyms</td>
<td>4.6</td>
<td>0.48</td>
</tr>
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<td>4.5</td>
<td>0.52</td>
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<td>K - a</td>
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<td>0.81</td>
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<td>Anagrams</td>
<td>5.4</td>
<td>0.55</td>
</tr>
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<td>Arithmetical Problems</td>
<td>3.5</td>
<td>0.67</td>
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<td>Number Series</td>
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<td>0.84</td>
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<tr>
<td>Mental Arithmetic</td>
<td>5.1</td>
<td>0.59</td>
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<tr>
<td>Kraspelin</td>
<td>17.4</td>
<td>0.59</td>
</tr>
<tr>
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<td>0.66</td>
</tr>
<tr>
<td>Coding</td>
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<td>0.66</td>
</tr>
<tr>
<td>Space Relations</td>
<td>2.4</td>
<td>0.40</td>
</tr>
</tbody>
</table>

RESULTS

In most tests, the distributions of the scores did not markedly deviate from normal on the initial trials. On the final trials they were slightly skewed towards the higher ends of the scales with increased standard deviations (Table 1 shows the ranges, means, and deviations of the scores; still, the distributions were nearly normal. For this reason it was deemed possible to use the material as a basis for calculations that presuppose a normal distribution.

In order to estimate the concordance between the members of a pair, the means of the absolute values of intrapair differences were calculated for each test on the initial and final trials. These values were used to obtain figures for comparisons between the various tests by dividing each mean of intrapair differences by the corresponding standard deviation of raw scores: MD/s. This is the index used e.g. by Huxen in his twin studies. The smaller the ratio MD/s, the greater the concordance. The values obtained are given in Table 2. The concordance values obtained on the first trial agree with those generally obtained in twin studies.

To facilitate the investigation of those differences between the members of a pair which had arisen through training, calculations were also made concerning intrapair differences in the direction of the effect of training. In verbal tests the difference is of the form (V — N), in numerical and mathematical tests, of the form (N — V). Table 3 shows the means of these differences, i.e. the differences of the score means of the members for each test on the initial and final trials. The t test of correlating groups was applied to estimate the significance of these differences.

On the first trial, the intrapair differences were not significant in any of the tests. On the final trial, both significant and highly significant differences were observed in the direction of training. It appears that, between the groups under comparison, at least a significant difference had arisen in tests of a type similar to the tasks used in the training except for Number Series and Mental Arithmetic.

In order to determine the rise in scores due to training, the results of the initial and final trials were compared. The
### Table 3.

The intrapair differences in the direction of training; the significance of the differences, t-values and probability values.

<table>
<thead>
<tr>
<th>Task</th>
<th>D = N - V</th>
<th>t</th>
<th>p</th>
</tr>
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<tr>
<td>Raven</td>
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<td></td>
</tr>
<tr>
<td>I</td>
<td>-3.4</td>
<td>1.985</td>
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<tr>
<td>II</td>
<td>-2.05</td>
<td>0.570</td>
<td>p &lt; .60</td>
</tr>
<tr>
<td>Coding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>2.6</td>
<td>1.091</td>
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<tr>
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<tr>
<td>I</td>
<td>-0.54</td>
<td>0.596</td>
<td>p &lt; .60</td>
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<tr>
<td>II</td>
<td>1.29</td>
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<td>p &lt; .50</td>
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<td>Antonyms</td>
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</tr>
<tr>
<td>I</td>
<td>-0.05</td>
<td>0.041</td>
<td>—</td>
</tr>
<tr>
<td>II</td>
<td>0.84</td>
<td>0.576</td>
<td>p &lt; .60</td>
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<tr>
<td>Sentence Compl.</td>
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<tr>
<td>I</td>
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<td>2.087</td>
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<tr>
<td>II</td>
<td>5.3</td>
<td>3.136</td>
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<tr>
<td>Kappa</td>
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</tr>
<tr>
<td>I</td>
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<td>0.647</td>
<td>p &lt; .60</td>
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<tr>
<td>II</td>
<td>5.47</td>
<td>3.810</td>
<td>p &lt; .01 **</td>
</tr>
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<td>0.928</td>
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<tr>
<td>II</td>
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<td>3.160</td>
<td>p &lt; .01 **</td>
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<td>0.823</td>
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<td>II</td>
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<td>Kressepin</td>
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Table 4.

The score means of the Groups N and V on the initial and final trials, I and II; the differences of these means, D; the significance of the differences, t-value.

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<th>D</th>
<th>t</th>
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<td></td>
<td>V</td>
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<td>V</td>
<td>18.8</td>
<td>20.7</td>
<td>1.5</td>
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Comparisons were made separately for Groups N and V. On the final trial the score means for every test exceeded those on the initial trial, with the exception of Arithmetical Problems. The significance of the differences of these means was estimated using the t test of correlating groups (table 4). The means of both trained groups exhibited highly significant rises on all tests of the type that were used as tasks in the training. The group coached on numerical tasks showed a slight improvement on verbal tests as well: the results were almost significant on the Sentence Completion Test and K-a.
results of Group V were also highly significant in Mental Arithmetic and Kreepelin, and significant in Completion Tasks and Number Series. Considerable improvement also occurred in most tests of a type that was not used in the training of either group. Both groups showed highly significant improvement both in Coding and in Analogies. Besides, on the final trial Group N achieved means exceeding those of the initial trial to a highly significant degree on Ravens and Block Design; the final trial scores of Group V were almost significantly better on Ravens, and significantly better on Block Design than the initial scores. On Space Relations both groups showed almost significant rises in their means. The degree of significance was estimated throughout by means of the two-tailed distribution of t. This method was chosen because, in advance, there was no absolutely certain way to know that every subject would be going to improve his scores on all the tests.

A method that can be used to express the magnitude of the change in scores between the initial and final trials is to use the standard deviation for each test as the unit of measure. This renders the changes on the various tests comparable with each other. The unit of deviation was obtained from the results of the initial testing (N = 38). Group N improved by at least one unit of deviation on an average of 6.9 tests out of 13, Group V respectively on 7.0 out of 13. Measured like this, the scores of Groups N and V show a nearly equal level of improvement. If, however, the improvement is expressed by averaging the deviation units for each group separately, the indices of improvement per subject are 9.8/13 and 8.5/13 deviation units for Groups N and V respectively. It seems that, although the above measurements reveal improved scores in an equal number of tests on the average, the degree of improvement is somewhat higher for Group N. It is possible that the numerical training had been more concentrated.

In Group N, the effect of training had been concentrated chiefly to the numerical field, even though the scores had improved slightly on the other tests, too. In Group V the improvement was more evenly distributed among the different tests. In Group N, the greatest change was observed in the Completion of Addition Tasks, 2.23 deviation units per subject on an average. The least improvement occurred in Space Relations and Arithmetical Problems, on the average only 0.13 deviation unit per subject. Improvement in Group V was greatest on K—a test, mean, 1.47 deviation units; this was followed by Coding, mean, 1.0 deviation units. Likewise, Group V improved least on Arithmetical Problems and Space Relations, respective means 0.31 and 0.32 deviation units.

It might be mentioned in passing that factor analysis was used to confirm the identifiability of the factors in the performances of these subjects. The factors obtained from the scores of the final trial were somewhat more clearcut than those from the initial trial, particularly in the case of Group V. It is generally assumed that this is exactly how training influences factorial structure.

SOME HYPOTHESES CONCERNING THE CHANGES IN TEST SCORES

It is evident from the results presented in the foregoing that the subjects' scores on most of the tests increased considerably during the training period. Statistical analysis showed that this rise was not caused by accidental factors. The following hypotheses can be offered to account for the change:

1. The subjects acquired proficiency in the factor at which the training was aimed.
2. The subjects' general performance (general intelligence, the g factor) increased as a result of practice.
3. Training in tasks of a given type produced a transfer effect on tasks of other types.
4. The subjects acquired test sophistication, familiarity with the test situation, the examiner etc.
5. The subjects recalled a number of test items from the initial trial.
6. During the training period, irrespective of it, the subjects attained a higher performance level resulting from spontaneous development.

The distribution of the scores on the final trial was somewhat different from that obtained on the initial trial. Most of the distributions were displaced to the right. In the speed tests the dispersion increased. These phenomena are regarded e.g. by Etelman as some of the
commonest effects of training on the distribution (Ekman 1952). On test of increasing difficulty level in which speed was disregarded there was a corresponding decrease in deviation, particularly in Group N on Number Series and Group V on Sentence Completion and Antonyms, the scores being congested at the upper end of the scale. In Groups N and V, the increased deviation was most noticeable on those tests which measure the factor the training was directed at. These changes indicate that, in addition to acquired proficiency of a general nature, there were also such differences in the effect of training between the groups as fit hypothesis No. 1. Moreover, the first hypothesis is supported by the fact that both groups showed highly significant improvement on all those tests which represent the factors that were the objects of training. Even though the control group also showed improved scores on these tests, both test groups improved significantly more on several tests than the controls. That on the completion of the means of Groups V and N was significant on Sentence Completion, K-a, and Anagrams. Correspondingly Group N exhibited a significantly higher mean on Kruepelin and very significantly higher one on the Completion of Addition Tasks.

On the basis of the present study it is difficult to distinguish the respective effects on increased scores of the g factor, transfer, and familiarization with the test situation. In part, they are likely to overlap conceptually. The generally increased scores on tests that were not preceded by training on tasks of a similar type could be ascribed to an increase in general intelligence or to transfer. Supposing that the factors in 11 to 12-year-olds are not yet fully differentiated, increased scores are here indicative of an increase in general intelligence insofar as they are not a matter of testing technique. The hypothesized improvement in the g factor is particularly supported by the fact that the subjects improved their scores on Raven's Matrices (the improvement was highly significant in Group N, almost significant in Group V) and Block Design (Group N in a highly significant, Group V in a significant, degree), which are standardized intelli-

gence tests as well as good gauges of the g factor. Transfer will have occurred as soon as training on certain tasks improves performance in other tasks of a similar type on which there has been no coaching. Accordingly, increased scores on tests measuring the factor towards which the training was oriented can be interpreted as a form of transfer. A fact which may be regarded as supporting the third hypothesis is that the statistical significance of gains in scores seems to diminish with increasing dissimilarity between the factorial content of the test and the tasks used in training. Thus, on Raven's Matrices, Group N made highly significant, Group Valtonen most significant, gains. On Block Design, the gains in Group N were highly significant, those in Group V were significant. On Antonyms both groups made highly significant gains; in Group V the value of t was slightly higher. On Space Relations, both groups improved their performances about equally, to an almost significant degree. Failure to improve on Arithmetical Problems may have been due to the steeply increasing difficulty level of the items.

As mentioned on p. 206, Group V increased its scores more widely than Group N, which, however, made higher gains, if on a more limited area. The possibility of transfer cannot be excluded here, either: the development of the V factor in the verbally trained group may have helped Group V in grasping the test instructions.

Cronbach defines transfer as an improved ability to act in a situation the like of which has not occurred during training. He also mentions a number of results from learning that produce transfer effects on a novel situation. They include specific motor reactions, special items of knowledge and associations, generalization, ways to analyze situations, attitudes towards persons, situations and self (Cronbach, 1969). Several of these belong to so-called test sophistication. Part of the improvement in test scores was probably due to test sophistication, but this does not account for the differences between groups N and V. And if these differences were not caused by test sophistication, one feels justified in inferring that all the other differences were not produced solely by test sophistication.
Of course, it is conceivable that both groups of subjects had acquired more test sophistication in those tasks which they had been trained. But if the test and training situations are analyzed, it will be found that most factors which can be regarded as likely to improve the results are common to both groups of subjects. Instances of these are e.g. the general structure of the test situation, the examiner, timing or the absence thereof, use of a pencil, pondering, conscious attitude to speed and inference tests, and the tendency to relate work rhythm to a given pace on time.

Besides, the training situations of the members of pairs bore a greater mutual resemblance than their test situations. In numerical tests, for example, the subjects were allowed 4 minutes, in word fluency tests, 6 minutes, to work on the tests; the difference may affect the results if the situation is not free from tensions. During the training phase, however, Group N did not have 4-minute periods; for both groups the duration was 6 to 10 minutes.

These considerations suffice to ensure that matters pertaining to testing technique did not cause highly significant differences between members of pairs in those tests on which they had been trained. Supposing that the almost significant gains in Space Relations were due to test sophistication alone, the significance of the change in Space Relations score average could be regarded as measuring test sophistication in a way. Of the tests used, Space Relations was perhaps the remotest from the training tasks in factorial make-up. Moreover, both groups made approximately equal gains on this test. If, based on this, the significance of every change were to be reduced by one degree (**) or by the value of t (c. 2.2) corresponding to the change observed in Space Relations, numerous differences of means would still be found to remain significant. For example, Group Y would be found to have increased its means significantly in Sentence Completion, K-a, and Anagrams, while Group N would have failed to show any significant changes in means on the same tests.

It is a fact that retesting usually yields somewhat higher scores than initial testing. Accordingly it can be assumed that part of a rise in scores is due to the memory factor. Yet this factor cannot possibly be held responsible for a very great high proportion of the changes. If a single repetition suffices to improve the results, oriented training is likely to be even more effective. This effect is not probably totally dependent on the memory factor.

Training on items included in the tests was avoided, and it would be surmised that training on other kinds of tasks would hinder remembering what has gone before. Besides, the scores increased in different proportions, nor can every difference of changes be explained as being due to memory. Training on tasks of a given type presumably induces the subject to familiarize himself with the structure of these tasks. Especially in the case of simple tasks this may result in the automatization of some subfunctions. But since the individual tasks used in the training were different from those used in the measuring test, an explanation which suggests itself is that what really occurred is an improvement in the ability measurable with this test.

In speed tests, conscious memorizing is hardly likely to occur particularly in such young subjects to whom the test situation is a novel and embarrassing one. On the other hand, given rather difficult tests that require deduction, the subject may not understand every task at all or even have time to familiarize himself with them, on the initial trial, so that memorizing cannot occur, in the case of every item anyway. Nor did the members of pairs know on the initial trial that they would be required to take the tests once more, so they were not motivated to learn the items.

Children whose development is fast could easily be expected to show gains in their scores resulting from maturation. Because they are in school, they are constantly subjected to training by environment, independently of the training in this study. In order to eliminate these factors, the duration of investigation was kept as short as possible, which made it unlikely for a maturation process to occur in a given direction let alone diverge in the two members. This applies to strong environmental influences, too. An influencing factor capable of raise the scores abruptly to the extent observed would...
have had to be quite powerful, seeing that e.g. in Block Design the average gain equaled an increase for which about two years are needed accordingly to the test norms. The gains on Coding are no less clear-cut. Training was not done on tasks of the type given in these tests, however, nor did the practice items include any of Block Design type. On tests representing the factors that were trained, the gains in scores were considerably higher than on the above tests.

REFERENCES


COMMENTARY ON “A STUDY OF THE TRAINABILITY OF CERTAIN PRIMARY MENTAL ABILITIES”
BY HILKKA VALTONEN

This study reported the outcomes of ten-day training directed at certain mental abilities of intelligence on the corresponding functions as well as on other mental performances due to a transfer effect. The study design was an innovative one, as it used a modification of the method of co-twin control first published by Gesell and Thompson in 1941. For this study the author recruited 19 pairs of monozygotic twins, aged 11 to 12 years, from Helsinki. For interpretation of results the author presented six hypotheses for discussion.

Currently, in the media, there has been debate about the influence of genetic factors versus fostering on the features of personality and performance. Against this background, this original article was ahead of its time by its topic and used an elegant method which gained popularity only decades later.

Timo Partonen, Editor-in-Chief
STUDENT SUICIDES

Students are in the age of transformation from adolescence into the age of young adulthood. For many a student the first semester in college is also the first time away from home. He has to make several adjustments: scholastic and social, sexual and behavioral adjustments and also family adjustments. He may feel the starting independence, but there are still several factors, both emotional and practical which make him dependent. One of the major practical dependancies is the economy of the student where he often needs continuing support from his parents especially if he happens to be studying in one of the schools with high tuition and lodging fees. He may feel the expectations of his parents, he may feel aggressive about his dependence, he has unresolved conflicts, frustrations, guilt feelings and loss of self esteem. All of these he has to face and make a proper adjustment. It is no wonder that according to Franswirth in the USA and Alonen in Finland 7—10 % of the student population needs active support from a psychiatrist.

As to suicide, the students who commit suicide have previously shown the same kind of symptoms and signs of emotional disorder as any other age group. There may be sudden or persistent change in personality or behaviour, irritability, depression, sleeplessness some times outbursts of temper. Person usually gives direct or indirect clues on his intention to kill himself for instance he may say "if I do not pass this exam I'll kill myself" or an earlier enthusiastic skier gives his skis in the middle of the winter season to his room mate saying "you can have these I'm not going to need them any more".

Probably a greater difference than the difference between suicides in various age groups is the difference in the attitudes of other people. It is easier for them to understand why a chronically ill person takes his life than to understand why a young member of a privileged group who has all the possibilities ahead of him should commit a suicide.

There are relatively few studies done in the student populations. This gave an incentive to us to study the occurrence of suicide in the Finnish universities. In addition to these the fact that Finland has one of the highest suicide rates in the world motivated us to a study.

When we compare different countries and even the different states in the United States concerning suicide, the first thought is probably how many suicides there are in the general population every year. Among the countries studied for information on this subject, Hungary has the highest suicide rates in the world, whether we compare the rates of men, women or the total population. In the statistics concerning men Finland has the second highest rate. In those concerning women, Japan is second after Hungary. If we take different states in the United States, we shall find that Nevada comes right after Hungary as to the rates of total population; but in the first column, Nevada clearly comes first with a rate of 40.8 suicides per 100,000 population per year, compared to 37.5 suicides in Hungary. Other states which also have high suicide rates are Alaska, Wyoming, Montana and Colorado, in that order. In other parts of the world the highest rates can be found in Hungary and Finland, as mentioned, and in Austria, Czechoslovakia, Germany, Denmark and Sweden. The United States is about twelfth from the top.

When we begin to think about these numbers we may ask why it is these countries and states that have high incidence of suicide. Probably one is ready to say that of course Nevada has high rates because of Las Vegas. But it is no explanation of why Utah, which has a border in common with Nevada, has only half the suicide rate of Nevada. It is also surprising that in Vermont, the men commit suicide in twice the number as in the neighboring state of Massachusetts, while the women's rates per 100,000 population are exactly as high in both states. Further more, why, for example, in the Scandinavian
countries, does Norway have the rate of 8 compared to twice that of the other Scandinavian countries of Sweden, Denmark and Finland which have the rate of 19 per 100,000.

If we compare the rates of student suicide between different states and countries we also have to take into consideration the suicide risk of the region surrounding the university. But it seems to me that it is as important to know the risk in the student's home country or home state. In almost every study there is the question of whether the student population commits suicide more often than the rest of the population of the same age. In a small country or state where the student body comes from the same country or state one can make that comparison. But it is not quite the same matter to compare the students of a certain university in the USA, who come from all over the country with the population of the same age in the region surrounding the university, for the risk to which they all have been exposed is quite different.

In the studies so far there is not a general agreement of whether the students commit suicide more often than the population in general, but in many of the studies the case is so.

When we began our study in 1668 in Helsinki, Finland, we had information from the British universities. These studies are almost classical in the field of student suicides. From Yale we got the rates from the most recent years through Dr. A. H. A. N. and finally, we received some scattered information from Germany, but no exact rates. Only later in 1668, the rates of university of California at Berkeley were available.

In order to obtain our information and to learn whether there are differences between the students in Finland and other countries in this respect, we studied the incidence of student suicide in Finland during the years of 1955–64. We tried to get information whether there was a rising trend and hoped we would get some clues as to preventative procedures for the future. The material consisted of students 18–30 years of age who had committed suicide between 1955–64 and who had been registered at the University at the time of death or at least during the preceding semester. The cases were compiled from the original death certificates of the National Central Bureau of Statistics.

In order to get additional information several other sources were used, such as parish records, student directories, and in a few cases, family contact. For comparison, all cases of suicide occurring during the same period among the 18–30 year old male and female Finnish population were similarly compiled from the original death certificates.

In table 1, we have the over all picture of the suicide rates in different universities: Cambridge, Oxford, seven British "red brick" universities, Yale, The University of Helsinki, and all Finnish universities. I would like to have on this figure also the University of California at Berkeley the rate of which was according to Dr. Richard Seiden 17.4.

We have to compare the suicides only of the male students because of the lack of information on females. Oxford has the highest rates, University of Helsinki is next, then Cambridge and fourth would be University of California. An interesting point here is that the number of female students is very different in the universites compared: in seven British universities the ratio is 3 to 1, at the University of Helsinki it is 1 to 1, and in the rest of the universities the proportion of women is very small.

In figure 1, we have the average annual number of suicides per 100,000 among the male (curve A) and female (curve D) population of Finland aged 18–30, and among male (curve B) and female (curve C) student population (2 year periods from 1955–64). We can see that the number of female student suicides shows a rising trend.

There were 39 student suicides in all the average age of these students who committed suicide was 23.8 years when the average age of all the students in Finland was 22.2 years. The difference here is not significant.

Methods of suicide were drug overdose, 18; firearms, 7; hanging, 3; jumping, 4 (mainly in front of a moving vehicle); and drowning 4.

The methods used seem to vary from country to country. British students use house gas, Americans firearms and the Finns mainly use an overdose of drugs.

If we compare the average annual incidence of suicides per 100,000 among Finnish students, among the population of the same age, among the total popu-
The incidence of suicide among male students during the 10-year period of 1955–64, we find, was lower than the incidence among the male population of the same age group; on the other hand, the incidence of female student suicides is higher compared to both the age group and the total female population. The difference, however, is not statistically significant.

In our study, there was no difference in the age or major subject between the suicides and their non-suicidal classmates. In contrast to that, Siegel found in his material from the University of California at Berkeley that the suicidal group was older, and contained greater proportions of graduate students and language majors. In his study, the number of suicides was higher in student population than in their non-student age peers, when again in our study, the male student figures were lower. In both of the studies, it was concluded that there was a greater risk of suicide among the female students.

There has not been noted any significant differences between the suicide and the non-suicide groups in marital status, race or religion. In the University of California, the undergraduate suicides had fared better than their fellow students in matters of academic achievement. There is also a tendency that the universities with high academic standards do have higher suicide rates (Idänpääl-Heikkilä). Rook, who commented on the suicide rates in Oxford and Cambridge presented the hypothesis that the high rate of suicide in these universities was the result of the severity of selection for enrollment and stated the belief that "higher standards of entry are more likely to lead to the selection of the mentally unstable".

The diagnostic categories or syndromes found in connection with suicides in general apply also to students. Edwin Sniegmann devides them into depression which is usually the largest group, disorientation or psychosis which forms definitively a smaller proportion; deficit and dependent-disinterested personalities being the other two major syndromes. In student population these syndromes appear as concern over studies, student may be unrealistically worried over grades. Depressive patient feels that he is not doing well enough and that he will not be able to do so in the future either. He has low self esteem and he has the feeling of inferiority. He may try to medicate himself and the use of drugs has to be remembered as one of the contributing factors to the fatal outcome. Student may take drugs to achieve better or because of depression. When he has the drug habit he has also drugs easily available for him as a means of suicide or as a contributing factor in other ways. In a study by Blane at Harvard it was found that students chronically using a drug such as marijuana or LSD comprised 15 percent of the suicide attempt group which he studied, in comparison to an estimated chronic usage rate of about 5% in the college population at large during the equivalent period. Blane finds also that the female students find male-female separations most stressful and accordingly with them the precipitating factor often is a broken love-affair. Frequently though the problem in the interpersonal relationships is not only a love-affair but the general inability to form durable long-term relationships with fellow students. So often the suicidal patient is withdrawn and shy.

There has been several efforts to correlate the family situations, parents attitudes to schoolwork and grades, students reactions to expectations, types of school etc to suicide, but still there is no agreement in why for instance the students in some universities commit suicide more often than in others. Still comments that "in a large number of cases there are seriously disturbing features in the family history and in the family environment from which the student comes". Divorce, the suicide of a close relative, the death of a parent after a depressive illness, or severe and persistent family disharmony and violence were so common that he thought it difficult to avoid the impression that they were causitive factors. He calls attention to the over ambitious parents who expect more of their children than their capacities justify, to the over dutiful children and to the effects of individual comparisons between siblings. He also believes in common with most other observers, that the cause of an illness or breakdown usually lies in some situation preceding attendance at college. It is also frequently found that...
at the time of suicide the student has had a change in his relationship with family, even though the family would live in another place and the suicide would happen on campus, the suicide is a reflection of that disharmony.

The differences between the old British universities and the "red brick" universities in suicide rates may be partly due to the different social background of the parents, partly to different nature of the universities. In Oxford and Cambridge the students also live in dormitories, while again in "red brick" universities many of them live at home, which makes the separation from family slower. In Finland there are universities of only one type and they draw their student body from all social classes.

In that respect the Finnish university resembles more the "red brick" universities and probably state universities in the USA. The suicide rates in the Finnish universities are, however, closer to the rates of the old British universities. The incidence of suicide in general in Great Britain is much lower than in Finland. It would be interesting to know if there is any difference in the incidence of student suicide in countries or states with high suicide risk and those with low suicide risk.

As there are differences in suicide rates between different universities there are probably also factors in the universities themselves which have favourable effects on students and in that way make the adjustment easier for the student. These are factors that we should be able to name and add as many of those factors as possible to our mental disorder– and suicide preventive means. From purely medical point of view, the suicide prevention program on college campus should include active screening and "case finding", good student health service including sufficient psychiatric staff and preferably a 24 hour emergency service.

When these preventive matters were discussed at the meeting of the National Student association on the Prevention of Student Suicide in Washington D. C. last fall, the majority of the participants, many of them students, thought that the best way to deal the problem would be for the students themselves to do something about it. The resolutions varied from different social activities to student clubs and baking cookies, but the main idea was to make the university campus a more comfortable place to work and live.

Table 1


<table>
<thead>
<tr>
<th>University</th>
<th>Average no. of students per year</th>
<th>Observation period in years</th>
<th>Total number of suicides</th>
<th>Suicides per 100,000 students per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambridge</td>
<td>5 950 Φ 630 Φ</td>
<td>10</td>
<td>13</td>
<td>21.8</td>
</tr>
<tr>
<td>Oxford</td>
<td>5 259 Φ 800 Φ</td>
<td>10</td>
<td>16</td>
<td>30.5</td>
</tr>
<tr>
<td>Seven British universities</td>
<td>15 000 Φ 5 000 Φ</td>
<td>8.5</td>
<td>10</td>
<td>7.9</td>
</tr>
<tr>
<td>Yale (USA)</td>
<td>8 006 Φ —</td>
<td>10</td>
<td>9</td>
<td>11.3</td>
</tr>
<tr>
<td>Helsinki</td>
<td>6 230 Φ 7 206 Φ</td>
<td>10</td>
<td>15</td>
<td>24.1</td>
</tr>
<tr>
<td>All Finnish universities</td>
<td>12 090 Φ 10 080 Φ</td>
<td>10</td>
<td>23</td>
<td>19.2</td>
</tr>
</tbody>
</table>

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Fig. 1. Average annual number of suicides per 100,000 among the male (curve A) and female (curve D) population of Finland aged 18—30 years, and among male (curve B) and female (curve C) students (2-year periods from 1955 to 1964).

REFERENCES


Idänpää-Häikälä, P. (Unpublished): Comparison of Suicide rates in two types of Universities.


COMMENTARY ON “STUDENT SUICIDES” BY PIRKKO IDÄNPÄÄN-HEIKKILÄ

This study reported the incidence of deaths from suicide among university students, aged 18 to 30 years, from 1955 to 1964. There were 36 suicides during these years. The authors also compared the number of suicides and the suicide mortality rates of all Finnish universities with those derived from Cambridge, Oxford, seven British “red brick” universities, Yale and the University of California at Berkeley.

Currently, there is debate in the media about resilience among high school students, as it seems to decline under pressure. Thus, the topic of this study is timely, or has in fact remained relevant for all these years, and it contributes in part to the development of mental health strategy being outlined by the Ministry of Social Affairs and Health for the years of 2020 to 2030.

Timo Partonen, Editor-in-Chief
PSYCHIATRIC AND ENVIRONMENTAL PILOT STUDY OF FIFTY PATIENTS WITH DERMATITIS HERPETIFORMIS

by Aira Laihinen and Kirsti Blomqvist

Dermatitis herpetiformis (D.h.) is a chronic bullous disease in which the bullae occur in symmetrical groups in various parts of the body, most of them generally in areas exposed to friction. The local symptoms consist of burning and erythema in an area in which an itching vesicle forms. Histologically a subepidermal vesicle is seen, usually filled with eosinophils. It differs from other bullous diseases in that new developing vesicles are seen in the vicinity of the bulla and there are microabscesses on the tips of the papillae (Jablonska and Chorzelski 1962). The method of immuno-fluorescence has brought with it new possibilities for differential diagnosis (van der Meer 1969). Furthermore, the occurrence of fibrin on the tips of the papillae has been observed in this bullous disease (Mustakell, Blomqvist and Laiho 1969). Although the etiological cause of D.h. still remains unknown, the symptoms can be checked by means of alosulfone which eliminates itching in a couple of days and prevents the bullae. In the last few years it has been noticed that the disease is associated with malabsorption and villusatrophy in the small intestine. In the main these symptoms disappear with a gluten-free diet, and 8 months’ diet has also been known to cured dermatitis herpetiformis in four patients. (Fry et al. 1969)

Only a very limited study has been made of dermatitis herpetiformis from a psychiatric point of view. It has, however, revealed that in many cases the onset and development of the disease was associated with events in the patient’s life. This observation gave rise to the idea of making a co-operative dermatological-psychiatric study such as the present. In literature there have recently been descriptions of this kind of co-operation and of the functioning of a co-operative ward (Wittkower and Russel 1953, Musaph 1964, Rubin, Rabiner and Seides 1969). Cases of dermatitis herpetiformis, however, do not occur in these studies.

The material and the method

The patients with dermatitis herpetiformis treated in the Department of Dermatology of Helsinki University Central Hospital in 1955 or thereafter were invited by letter to attend the department on a set day for an examination. The patients invited totalled 128; of these, 98 came to the examination and an additional 15 notified that they would come later. Of the patients who came to these examinations, the first 50 are included in this study. Although the letter of invitation did not mention the psychiatric examination, none of the patients refused it. The psychiatric interview followed a free from. Both the psychiatrists interviewed the patients separately. The psychiatrist acts as a junior doctor in the department. The examination she performed usually lasted at least two hours and she generally met the patient at least twice. The dermatologist has acquired psychiatric training. The comparision

<table>
<thead>
<tr>
<th>Duration of Disease</th>
<th>0–20 yrs</th>
<th>21–30 yrs</th>
<th>31–40 yrs</th>
<th>41–50 yrs</th>
<th>51–60 yrs</th>
<th>61–70 yrs</th>
<th>Total</th>
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<tbody>
<tr>
<td>0–5 years</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>6–10 yrs</td>
<td>3</td>
<td>2</td>
<td>—</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>11–15 yrs</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>—</td>
<td>10</td>
</tr>
<tr>
<td>16–20 yrs</td>
<td>2</td>
<td>1</td>
<td>—</td>
<td>3</td>
<td>—</td>
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<td>21–25 yrs</td>
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<td>1</td>
<td>—</td>
<td>—</td>
<td>1</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>26–30 yrs</td>
<td>—</td>
<td>3</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>11</td>
<td>7</td>
<td>11</td>
<td>10</td>
<td>2</td>
<td>255</td>
</tr>
</tbody>
</table>
of the results was carried out afterwards.

**Progress of dermatitis herpetiformis**

Of the patients, 32 were males and 18 were females. Their age varied from 31 to 78 years. They came from almost all parts of the country and 4/5 of them were born in the countryside. The duration of the disease varied from 2 months to 30 years, and the age of the patient at the onset of the disease had been from 10 to 61 years (Table 1). The cured patients numbered 7, of whom 5 were females and 2 were males.

The diagnosis was confirmed clinically and histologically. The treatment with avlosulfone was discontinued in order to make a biopsy and to check the need of the drug. Definite overcursing was discerned in a couple of patients, who had used 500 mg of avlosulfone per day, while a dosage of 100 to 200 mg was found sufficient in the hospital. As a side-effect of the drug, hemolytic anemia was observed in 8 patients and in one patient a low white cell count was found. Observation showed that the need of the drug diminished in many patients even when they went home and three patients managed without any drugs after the examinations.

**Other diseases of the patients**

The total occurrence of various diseases was generally fairly considerable, many of the patients had suffered from some disease for a long time before the onset of D. h. and some also after it. Only 10 young patients had been well except the eruption.

In the case of two patients with hyperthyroidism, D. h. made its onset during the preoperative iodine treatment, as occurred in the case presented by Rattner, Rodin and Barsky (1956). In three patients the treatment of hyperthyroidism resulted in the cure of D. h. as well. Smith (1966) related the same phenomenon and in his series of 140 patients three had been cured after surgery.

In three patients, the onset of D. h. occurred immediately after an operation for gastric ulcer, possibly a change of symptom was involved. Other eruptions were noticeably few. Only one patient had had atopic dermatitis and acne was manifest in two patients. As a result of scratching many patients had patches of neurodermatitis.

**Premorbid psychic stresses**

Attention was focused on stresses lasting for longer periods, during the years preceding the onset of the disease. Particular importance was attached to the main events and changes experienced by the patient. It appeared that in one third of the males (12/32) the onset of the eruption occurred when the patient was on active military service during the war or doing his peacetime compulsory military service. The military service was experienced as a stress by these patients. Fourteen patients had suffered the loss of a close person, most often the death of one or more persons. Almost all the patients were burdened with numerous circumstances that could be considered stress, the average number being 4.

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### Other diseases.

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>10</td>
</tr>
<tr>
<td>Gastric and duodenal ulcer</td>
<td>9</td>
</tr>
<tr>
<td>Hyperthyroidism</td>
<td>8</td>
</tr>
<tr>
<td>Headache (continuous)</td>
<td>8</td>
</tr>
<tr>
<td>Gallstones</td>
<td>6</td>
</tr>
<tr>
<td>Colitis</td>
<td>6</td>
</tr>
<tr>
<td>Liability to infections</td>
<td>6</td>
</tr>
<tr>
<td>Hypertension</td>
<td>5</td>
</tr>
<tr>
<td>Rheumatic disorders</td>
<td>5</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>3</td>
</tr>
</tbody>
</table>

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Psychiatric and environmental pilot study of fifty patients with dermatitis herpetiformis

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Serious diseases occurred before the age of 15 years in 22 patients. Furthermore, emotional disorders of behaviour, such as protracted enuresis, speech disorders, excessive nightmares, nail-biting, pronounced timidity and somnambulism were manifested by 76%.

**Psychopathological findings**

Only three patients in our series had previously received psychiatric examinations and treatment. Our series was divided into the following groups, in which the grade of severity of the finding is also accounted for:

**diagnosis and grade of severity**

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>normal with deviant features</td>
<td>7</td>
<td>5</td>
<td>7</td>
<td>19</td>
</tr>
<tr>
<td>psychoneurosis, psychopathic personality</td>
<td>1</td>
<td>19</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>psychopathy</td>
<td>3</td>
<td>—</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>oligophrenia</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>borderline case</td>
<td>—</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>psychosis</td>
<td>4</td>
<td>—</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12</td>
<td>30</td>
<td>8</td>
<td>50</td>
</tr>
</tbody>
</table>

1. normal with deviant features: Narrowing of emotional life and depressiveness were frequent deviant features. In 7 cases the symptoms made life remarkably restricted.

2. Psychoneurosis, psychoneurotic personality: The group included one definitely invalided patient.

3. Psychopathy and oligophrenia: The patient with mild oligophrenia represented the level of borderline intelligence; this patient manifested a tendency to depression. The patient representing the level of poor debility manifested a liability to primitive reactions.

4. Borderline cases and psychoses: Two psychotic patients had previously been under psychiatric hospital treatment, one lived in an old people's home at the time of the study. In one patient, both the psychiatric and dermatologic disease deteriorated during the period of the study.
Symptomatology.

- depressiveness ........................................ 31
- grave problems of dependence ...................... 20
- maternal fixation (males 8) .......................... 11
- paternal fixation (all females) ...................... 3
- submissiveness (2 are not included in the group of depressions) ........................................ 19
- paranoidism ............................................ 16
- paranoid features ...................................... 12
- paranoia, at times on psychotic level .............. 4
- episodic anxiety (3 grave cases) the married patients had had (males totalled 32 in the series) .................. 13
- addiction to alcohol .................................... 10
- frigidity (females totalled 18 in the series) ........ 7
- jealousy (all males, 5 suffered from a disorder of potency) ................................................. 6

The expression of emotions was restrained in 70%. A mere 16% of the series discharged their emotions externally.

Narrowing of the personality was discerned in the sexual development. Masturbation during pubertal and adolescent years appeared to be absent in one half of the patients. The first menstruation or nightly pollution had been a surprise and a source of fear for many. The first coitus was usually experienced at an age above 20 years and nearly half of the married patients had had as the first partner the future or wedded spouse. At least four patients lacked coital experience. There were few serious intercourses other than those leading to marriage.

The marriage age was usually rather high, preceded by a courship of long duration, and the marriage was often a compulsory one. Unmarried patients numbered 11, those in a first marriage 25 and those in a second marriage 2. Widowed patients numbered 2. Only one of the patients had divorced. One patient had started divorce proceedings. Of the marriages, 9 were childless and families with one child numbered 12. One of the unmarried patients had a child. Marital sexual adaptation was often defective, in 8 cases pronouncedly disturbed. The relationship between husband and wife was quarrelsome or distant in 17 cases.

The problems of aggressiveness presented by the patients demand a closer study. Sufficient information about the defiance phase of childhood could not be obtained in a study of this present kind. Pronounced conflicts at school were manifested by 14, pubertal crisis was absent in one half of the patients and it was pronounced in 11 cases. Of the 39 married patients, 13 were submissive to the spouse and only four of them were dominating. A pronounced respect for authority was manifested by the majority, caused perhaps by strict educational attitudes. Thus, the problems of aggressiveness seemed to play a central role in these patients and this topic will later on be further clarified, among other things by psychological tests. The study was met by temporary opposition, including the mild phenomena, in 13 cases. Constant resistance was shown by one patient. In several cases, the aggressive impulses were definitely overcontrolled and in 15 cases there was difficulty in controlling them. One half of the patients (24) manifested a distinct tendency to be grudging.

Discussion

The 50 patients with dermatitis herpetiformis included in our series revealed, that the disease may have its onset at any age in the adult. There was only one patient in whom the disease had begun in childhood, at the age of 10 years. The duration of the disease was mostly 5 to 10 years, the longest duration in our series was 30 years. These facts and the distribution by sex in a ratio of 3 to 2 accorded fairly well with the information presented in literature (Eyster and Kierland 1961, Björnberg and Hellgren 1982, Evans and Fraser 1963, Ledin and Stigell 1965, Smith 1966). The disease was obvious in every case and there were no differential diagnostic difficulties.

A survey of the literature reveals that psychiatric studies of D.h. are scanty. In individual case reports the disease has been said to break out after a mental shock (Duhring 1885, one year after he came the "father" of this disease: Elliot 1881, who already mentioned 7 other studies: Devergie, Crocker, Vital, Gibert, Brocq, Cazeneuve, Tennehon), and in larger series psychic stresses have, on the basis of the information received from the patients, been considered to be of significance in a certain proportion of the
Psychiatric and environmental pilot study of fifty patients with dermatitis herpetiformis
homes in 16—17 %, which he considered to be the average occurrence in society. Alanen (1968) studied a Finnish normal population and found an occurrence of broken homes in 10—25 %. In Rimmon's study (1969) of rheumatic disorders broken homes occurred in 35 % which is nearly the same figure as in our study, and Richardson (1965) found broken homes in 28 % of patients with Prurigo Besnier. The significance of a broken home has been specially emphasized in psychiatric studies and it has been observed in 36.5 % of schizophrenics (Alanen, Rekola, Steven, Takula and Tuovinen 1968), in 47.3 % of the morbidly jealous (Yauhkonen 1968), in 46.8 % of alcohol addicts and in 60.7 % of users of methylated spirits (Turunen 1968). A broken home may indirectly point to the significance of psychogenic factors.

The significance of psychogenic factors in our series may also be shown by the fact that emotional behaviour disorders of childhood were discernible in 78 %, that 70 % manifested inhibitions in expressing emotions, a feature observed in patients liable to psychosomatic disorders (Groen 1964), and that 80 % of the patients had been suffering from some disease of a long duration or from numerous illnesses before the onset of the disease or simultaneously with it. The visits to the doctor by a patient with dermatitis herpetiformis usually involve only the diagnosis of the disease and observation of the effects of treatment. Thus, the relationship between the doctor and the patient may remain superficial.

We consider that this study of ours shows that the patients had various kinds of problems of which they themselves were not aware and that they did not realize that they needed help. It is very difficult to appraise the results because, so far, we still lack a control series of a similarly studied normal population and of patients suffering from other eruptions. A material of this kind is being studied at the moment comparing a normal population of working age with a series of patients with itching eruptions in general.

Seitz and Grossman (1952) emphasized the fact that the severity of the disorders in the patients they had studied necessitated the help of a skilled psychotherapist, which opinion we share on the basis of our own series. Robertson (1947) reported on a patient with D.h. who was cured after a short supportive treatment and he was immediately criticized because of the shortness of the treatment (Hambling and Sborach 1947). Twiston Davies (1951) reported that a severe case was cured when the patient was removed from his difficult wife into military service. Extensive studies based on proper psychotherapy have not been published as far as this disease is concerned. Anyway our experience indicates that the patients are responsive to contacts and are eager to come again even in spite of long distances and they are gradually becoming aware of the necessity for psychotherapeutic treatment. In Finland the chances of getting this kind of treatment are, at the moment, rather few, although it is badly needed, in addition to other measures, in the therapy of various diseases.

We intend to present at an early date a more detailed personality investigation of our patients in working age and that of a control group. We assume that it is justified as the present paper has shown the disease entity to be bad uniform and the psychopathological disorder so massive.

Summary

1. Patients with dermatitis herpetiformis were invited to examinations, and the first 50 patients were included in a psychiatric study. Of these patients, 32 were males and 18 females. Their ages varied from 21 to 70 years. The onset of the disease occurred at the age of 10 to 61 years, its duration varied from 2 months to 30 years. The cured patients numbered 7.

2. Broken homes occurred before the age of 16 in 36 %. Emotional behaviour disorders of childhood were discerned in 76 %, 80 % of the patients had suffered from some disease of a long duration or from numerous diseases. All the patients had had some, and in most cases many factors regarded as stresses during the 2 years preceding the onset of the disease, the average being 4 stresses per each patient. Even ordinary changes in life,
such as for instance military service or marriage were experienced as stresses.

3. Psychopathological findings were numerous. Even all the patients included in the normal group, comprising 30% of the total number, manifested deviant features of character. Psychoneurosis or psychoneurotic personality was discerned in 42%, psychopathy in 6%, oligophrenia in 4%, borderline state in 2% and psychosis in 8%.

4. The most frequent disorder was depression. Other typical findings were grave problems of dependence, submissiveness, inhibition of expressing aggressions and emotions in general, a pronounced respect for authorities, hostility and a severe narrowing of the personality which was manifested in disorders of sexual development and in a remarkably restricted life.

REFERENCES


Psychiatric and environmental pilot study of fifty patients with dermatitis herpetiformis

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COMMENTARY ON “PSYCHIATRIC AND ENVIRONMENTAL PILOT STUDY OF FIFTY PATIENTS WITH DERMATITIS HERPETIFORMIS” BY AIRA LAIHINEN AND KIRSTI BLOMQVIST

This study reported the characteristics of 50 patients who were treated for dermatitis herpetiformis in the Department of Dermatology of Helsinki University Central Hospital (HYKS) in 1955 or thereafter. For these patients, both being given a gluten-free diet and the method of immunofluorescence diagnostics were new innovations those days. Fibrin on tips of papillae of the small bowel mucosa was also a new finding.

Currently, the pathogenesis of dermatitis herpetiformis is known more in depth. It is one manifestation of coeliac disease, and the skin symptoms heal with gluten-free diet and relapse on gluten challenge. The diagnosis is confirmed by showing granular deposits of immunoglobulin A in perilesional skin, where epidermal transglutaminase is the autoantigen.

Timo Partonen, Editor-in-Chief
THE LAPINLAHTI LECTURE, SCHIZOPHRENIA AND THE FAMILY

Author: YRJÖ O. ALANEN
Year: 1978
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Foundation for Psychiatric Research in Finland
THE LAPINLAHTI LECTURE

SCHIZOPHRENIA AND THE FAMILY

by Yrjö O. Alanen

In the Finnish-language textbook of psychiatry written by three former Lapinlahti residents (Achété, Alanen and Tienari 1973) schizophrenia is defined as a grave mental illness which usually sets in at an early age and is characterized by the breaking up of the integrated whole of the functions of the personality and by a tendency toward withdrawal from relations with other people to an ideational world of one's own. The more typical the disorder, the more clearly we can see that our patient has for a long time before its onset already had serious problems in his interpersonal relationships, mainly in the sense that the development of age-appropriate relations of friendship and love has been delayed and that contacts with other people even generally tend to arouse exceptionally intense anxiety in him.

Most therapists who have cared for schizophrenic persons and their families get shortly convinced of the great significance of intrafamilial psychic processes and interactions for both the genesis and treatment of this disorder. That the atmosphere in these families is almost invariably pathological has been shown by numerous family studies. Nevertheless, many researchers and psychiatrists feel that the bearing of the family environment on this disorder is still scientifically disputable.

This is the case for several reasons. A research culture based on the methodology of empirical natural science has difficulty in accepting observations of the kind underlying psychodynamic and therapeutic conceptions; observations which, though also based on experience, rest on a case-specific approach involving empathy and understanding and which have proved difficult to confirm by the techniques of natural science. Certain studies of adoptive children by genetically oriented investigators (Rosenthal et al. 1968, 1971, Kety et al. 1977) have stressed the significance of hereditary factors relative to the factors associated with the family milieu — despite the fact that they have not actually investigated interational factors at all. The development of neuroleptic drugs and the demonstration of their effects on psychotic symptoms have strengthened the biological study of schizophrenia and have led to new etiological theories which have attracted much attention. It should be mentioned at this point that, e.g., Arvid Carlsson (1978), a well-known Swedish representative of this approach, emphasized in a survey published this year that, even though the action of neuroleptic drugs leading to a reduction in psychotic symptoms can be largely explained as inhibition of dopaminergic

*The Lapinlahti Lecture

The Psychiatric Clinic of the Helsinki University Central Hospital, the Lapinlahti Hospital, is one of the oldest psychiatric clinics in the world still in existence and at the same time an important centre of psychiatric research. The Psychiatric Clinic and the Foundation for Psychiatric Research have established the Lapinlahti Lecture. Every second year a distinguished Finnish psychiatrist will be invited to give a lecture on an important and topical theme of his own choice. The lecturer will be awarded the Lapinlahti medal and a money prize. The lecture will be published in Psychiatria Fennica.
neural pathways. "So far, no consistent changes in metabolites or enzymes related to catecholamines have been detected in the brains of schizophrenic patients." Yet he adds, hopefully, that "several possibilities for a primary dopaminergic disturbance in schizophrenia remain to be investigated."

Although sincere and serious pursuit of truth is beyond doubt characteristic of the study of schizophrenia, it is obvious, I think, that researchers' views and conceptions are also influenced by psychological defence mechanisms resting not only on an individual basis but on a community-based foundation — they also reflect and represent attitudes characteristic of our cultural sphere more generally. As I see it, this is true not only of biologically oriented investigators; on the contrary, various defence mechanisms with play a part in the views of investigators with a psychoanalytic orientation. As Hauggerød, the Norwegian psychiatrist, states in his book entitled Nytt perspektiv på psykiatrien (1970) and published in Finnish under the title Psychiatry ja rihikeskunta — Psychiatry and society (1975) — theories have a tendency to become such that they will justify the current practice.

In the following I will first consider some of the most central findings of psychodynamic family studies of schizophrenia and the inferences drawn from them concerning the genesis and nature of this disorder. Next I will make use of recent psychoanalytic studies of grariously disturbed personalities, particularly those by Heinz Kohut and Otto Kernberg, and seek to find connections between them and the findings of family studies. In my opinion, such a synthesis — even if deficient — may prove useful both for a better understanding of schizophrenia and for an increased mutual understanding of family investigators and the psychoanalysts engaged in the study of the individual. Thereafter I will consider some aspects of the etiology of schizophrenia, approaching the question from a somewhat wider angle, though, still, from a chiefly psychological standpoint. Finally I will consider relatively briefly the treatment of schizophrenic patients and their families and some recent findings of a research group working under my direction.

CONCLUSIONS DRAWN FROM FAMILY STUDIES

The conclusions drawn from the findings of family studies I will present in the form of four theses and consider each of these separately. 1. Disorders graver than neurotic are frequent in schizophrenic patients' parents. In a study of the mothers of schizophrenic patients, which I carried out at the Lapinlahti Hospital in the 1950s (Alanen 1958), I found that 12 out of 100 mothers of schizophrenic patients had received hospital treatment for psychotic disorders and that in another 11 cases the mother had unmistakable psychotic features or potentials in her personality, revealed by a psychiatric interview or by psychological tests and, in most instances, by both. The most surprising finding, and the one that seemed the most confusing to the still inexperienced investigator, was the large number of mothers who could not be assigned to the group of borderline conditions approximating to the psychotic but whose personality was gravely disordered nonetheless. Apart from a few clearly schizoid or paranoid personalities, this group included mothers who, rather than being typified by any specific kind of clinical symptomatology, were characterized — and had also clearly been characterized before the onset of the child's psychosis — by heightened anxiety, rather poorly controlled aggressiveness and a conspicuous lack of empathic ability, associated with a dominating way of relating to the child. This group included a total of 40 mothers. Of the remaining 37 mothers, 21 were in my opinion neurotically disturbed, whereas 16 were "within normal limits". Among the mothers of the 40 young persons used for a comparative series, who were either neurotic hospital patients or persons included in the series from ordinary environments, there were only three who were found to suffer from disturbances graver than the neuroses. Similar findings were yielded by the study of another research team that worked under my direction (Alanen et al. 1966, Alanen 1968), in which graver than neurotic disorders reflecting the pathology of the ego functions were found to be characteristic of both the mothers and fathers of patients suffering from typical schizophrenia, whereas milder, neurotic-level disturbances were typical of neurotic patients' parents. The dispersion of the schizophrenic patients' siblings on a psychotic-disturbance continuum was notably wider than that of these patients' parents (cf. Table 1). It should be mentioned that the findings concerning schizophrenic patients' parents have later found support in another two unselected series of schizophrenic patients' families at Turku: one dealt with in the doctoral dissertation of Viljo Räikköläinen (1977) and the other in the new treatment study included...
in the schizophrenia research project of our Clinic.
Similar results have been reported by several other investigators. In the United States, Theodore Lidz and his coworkers (1958, 1965) considered that in 60 per cent out of 17 very thoroughly investigated families one parent or the other had psychotic features about his or her personality. In this context they spoke of the "transmission of irrationality", by which they meant that the children in these families had simply learned from their parents aberrant ways of reasoning, whereas models of a sound interpretation of reality had been lacking. Well known are the studies conducted by Lyman C. Wynne and Margaret Singer in the early 1960s by means of the Spouse Rorschach and other communicative tests. These showed according to the psychologist investigator who was unaware of whose test records he scored, that communication between the parents of schizophrenic patients was clearly more conspicuously disturbed in comparison with numerous comparative series (Wynne and Singer 1963, Singer and Wynne 1963, 1965).
Findings like these can of course in themselves be interpreted on the basis of genetic factors, as well as on the basis of environmental factors. David Rosenthal, whose adoptive-child study was mentioned above, has with his coworkers developed the concept of the "schizophrenia spectrum", including in it in addition to actual schizophrenia, other disorders approximating to it. Their reasoning was based thereby not only on the disturbances of the patients' biological parents but also, and in particular, on those observed in schizophrenic mothers' children adopted away.

On the whole, the findings of Rosenthal's research group clearly show that genetic factors do play a role in making for a proneness to schizophrenia; but, as I see it, the interpretation of the term "schizophrenia spectrum" appears speculative, and the differences between the adopted-away children of schizophrenic mothers and other mothers are not clear-cut in this research group's studies (cf. also Hauser et al. 1978).

2. The child who falls ill with schizophrenia is often particularly close to and significant for the parent.
This finding was actually first reported as early as the 1930s, when Kasmin et al. (1934) observed that overprojection, not rejection, was the parental attitude typical of schizophrenic patients' families. In Psychotherapeutic Intervention in Schizophrenia, published in 1955, Lewis B. Hill described the "conditional" love and destructive and possessive emotional relationships of schizophrenic patients' mothers toward their children. In my own study concerning mothers (Alanen 1958) I said that these mothers were "inclined to project their own needs onto their children in an intrusive manner and retain symbiotic ties with them." On the basis of their experience of family therapy, Boszormenyi-Nagy and Framo (1962) stressed the "pathologic need complementarity" between parent and child prevailing in these families.
It is interesting to note at this point that many investigations, including a number of comparative ones — e.g., those by Bennett...
(1960) and Stabenau et al. (1965) and, in Finland, a comparative study of psychotic, neurotic and asocial children by Maliniavaara et al. (1975) — have shown that childhood conditions typified by rejection are more frequent in the histories of individuals developing disturbances of social adjustment than in those of psychotic persons. Studies of children brought up in institutions have also shown that they are likely to develop a proneness to sociopathic character disorders in particular (e.g., Beres and Obers 1959).

The family investigator and family therapist often — though not always — gets the impression that the mothers of schizophrenic patients (particularly male patients) have been strongly attached to the child who later became psychotic. They have often been peculiar but also loving mothers, for whom it was difficult to disengage themselves from the relationship with the child.

Lauri Viita, a highly gifted Finnish author who fell ill with schizophrenia — and whom I met when I first served as an assistant physician at this hospital in November — December 1952 — has given of this a lively description is his largely self-biographical novel Moreeni. He writes: "Whatever Joeselina learned to give up herself during her life-time, she never stopped needing the nearness of her children and the gratification of their innumerable needs." Similar features are often also observed in the relationships between the father and children in these families.

Harold F. Searles (1958) and Michael Conran (1976) have sensitively described a clinical angle these emotional ties between parents and children, characterized by both genuine love and very anxiety-evoking and ambivalent elements. For the patient himself such parental attitudes are frustrating because they do not include enough empathy and understanding for his own needs and strivings.

Helm Sieritin (1972, 1974) has characterized the nature and component factors of such a relationship of interaction as the transactional mode of binding, describing particularly how the parent thereby endeavours to own the child’s inner world, as it were, at the same time that the child’s sense of owning itself remains defective (Sieritin 1976 a).

In my view, these possessive transactional relations have, in spite of all their pathogenicity, one clinically favourable aspect: they form a basis for the fact that the schizophrenic patient usually has ability for a long-term relationship with another person — ambivalent and easily frustrated though this may be. The patient has experience of a human relationship characterized by continuity. Most sociopathic persons are in this respect in a less advantageous position compared with schizophrenic patients.

3. The development of schizophrenia in a child is connected with a disturbed state of the entire family unit.

Many family investigators have stressed how inseparably the development of schizophrenia is connected with the entire network of intra-familial interactions.

The two marriage constellations of schizophrenic patients’ parents described by Lidd and his coworkers (1957, 1965) are well known. In skewed marriages, one of the parents is a gravely disturbed person whose paralogic and whose ability to experience the various family members as separate individuals is defective. Still, it is this parent that strongly dominates the family atmosphere and the upbringing of the children, the other parent being more passive and unable to form a sufficient counterbalance for his spouse. In a schismatic family, on the other hand the parents’ mutual relationship is characterized by continued quarreling or, at least, a hostile state of tension. The parents also compete for their children, each seeking to disparage the other in the children’s eyes. Children growing up in these families will be constantly subject to the cross-fire of their parents’ conflicting expectations and requirements. They often suffer from strong guilt feelings and have an intense need to seek to reconcile their parents, and this for its part, tends to bind them to the home and, also, push them toward an inner experiential world isolated from other people.

The views that the psychopathology of these families is one shared in by the entire family unit have gained in depth particularly through the conjoint family therapy — a mode of treatment in which the therapist meets all the family members or several of them simultaneously in regular sessions. Such a therapeutic constellation at the same time forms a research situation offering an opportunity for continued observation of the current transactions between the family members. The therapist-investigators who have cared for schizophrenic patients’ families have described the phenomena they have come across, using thereby a variety of often closely interrelated terms. Lydman C. Wynne and his coworkers (1958) developed the concepts of “pseudo-mutuality” and “pseudo-hostility” to characterize the defence mechanisms typical of some of these families and shared in by all
the family members. In a family characterized
by pseudo-mutualis a defensive myth of
harmony predominates and efforts are being
made to deny and to ward off from
consciousness all hostile emotions; the result
is that the children will be immensely afraid of
such emotions also later in life. In a pseudo-
hostile family, on the other hand, tender
feelings have a similar fate: they are
experienced as shameful and evoke anxiety.
The family environment dominated by such
a rigid homeostasis will often effectively
prevent the individual of its members, as
Murray Bowen (1961) says, an "un-
differentiated mass ego" is characteristic of
them.
Helm Stierlin divides the transactional mode
of binding already mentioned into three
subtypes: affective or id binding, cognitive or
ego-level binding, and loyalty or superego
binding (Stierlin 1974, 1976b; Stierlin et al.
1977). In his view, cognitive binding is
particularly typical of schizophrenic patients' 
environments of growth. A central aspect of
this type of binding is that the parents
unconsciously manipulate and damage a
growing child's or a young person's ego in
a way hampering its spontaneous and
independent development. As an example
of cognitive binding Stierlin refers to
mystification, described by Laing (1965), or
the interpretation of matters — e.g., emotional
experiences — to the child in a way apt to
distort (mystify) his own experience and his
developing sense of reality. The well-known
double-bind concept, introduced by Bateson et
al. (1950), also can be subsumed under
cognitive binding.
Stierlin's studies have dealt mainly with
the separation problems of young persons and
their parents. It would also be highly
important to investigate the disturbances of
interaction characterized by cognitive binding
in children under three, i.e., children
representing the separation and individuation
stage described by Mahler (1968; Mahler et al.
1975). My guess is that a healthy development
during this stage will be promoted particularly
by an undistorted "mirroring" (to use Kohut's
(1971, 1977) term) and acceptance of the
experiences the child has in the sphere of his
body-self and the emotions connected with
these experiences — Pirko Silfala (1972),
e.g., has referred to this — as well as a
realistic kind of supporting the child's self-
esteen and the child's reliance on its own
capabilities, including its own cognitive
capacity.
4. The psychological pathogenesis of schizo-

phrenia exceeds the limits of individual
psychology and the psychology of the nuclear
family.
Family studies and family therapy have caused
us to see the pathogenesis of schizophrenia in
a wider perspective in a variety of ways. The
study of the intrafamilial transactions has
meant crossing the boundaries of an
individual-centred psychological approach, as
has already appeared from what I have said
in the foregoin. At the same time a restrictive
disorder-centred orientation has been left
behind — for schizophrenia shows itself now
as the gravest-degree manifestation of the
pathology of a given small-group rather than
as a "disorder in itself". Such a point of view
cannot easily be coupled with the generally
one-dimensional theories of genetic
investigators.
It is also important to point out that the
search for the ultimate causes of the
pathogenetic relationships of interaction in-
variably necessitates exceeding the boundaries
of the nuclear family. The causes of the
parents' disturbances, the effects of which are
reflected in their relationships with their
children, are in the last analysis rooted in their
own childhood and sometimes also in the
frustrations they have experienced later,
particularly in their marital relationships.
Bowen (1960) has advanced a specific "three
generation theory"; he sees schizophrenia as
the outcome of a progressive disturbance
process of interaction continuing from one
generation to the next. My own studies also
clearly revealed that the development of many
parents was coloured by a tie of dependency
on their own parents similar to — through less
pronounced than — the one binding their
children to them. What was concerned was
either an overt and apparent persistence of the
parents' ties of dependency on their own
parents or an ambivalent bitterness, reflecting
frustrations, because of lack of understanding
in their own parents — often connected with
a strong feeling that their own children must
be saved from a similar fate.
Another fact that already attracted my
attention in my study of schizophrenic patients' 
mothers (Alanen 1958) — and that is also
clearly in evidence in all the family studies I
have referred to — was that the disturbances
in the patients' mother relationships (and
generally in their family environments), instead
of being limited to their earliest childhood,
were of a lasting nature. This is at least
apparently in conflict with the view of
classical psychoanalysis that the pathogenesis
of schizophrenia is related chiefly and phase-
specifically to the future patient's first year of
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life. I will return this point and to the pathogenesis of schizophrenia, which is, I think, more multi-phasic in nature.

CONNECTIONS OF THE PSYCHOANALYTIC STUDY OF PERSONALITY WITH FAMILY STUDY FINDINGS

I will now change my point of view and seek to elucidate the findings of family studies in the light of certain recent psychoanalytic studies. I will again crystallize my conclusions into a few central theses.

1. The relationships of schizophrenic patients' parents with their children are pronoucedly narcissistic object relationships.

In his book entitled The Analysis of the Self, Kohut (1971) has undertaken a significant revision of the psychoanalytic conception of narcissism, and in his theoretical analysis, established on a firm clinical foundation, has deepened further in The Restoration of the Self, which he published last year (Kohut 1977). Kohut stresses, among other things, that our object relations — i.e., our relations with other people — may also be narcissistic in character. Narcissistic objects, or self-objects (which term Kohut prefers to use in his later book), are "objects which are either used in the service of the self and of the maintenance of its instinctual investment, or objects which are themselves experienced as parts of the self" (Kohut 1971).

It is easy to realize that the concept of narcissistic object relations is very useful for the interpretation of the interrelations between parents and children met in the families of schizophrenic patients. Some investigators have in fact spoken of narcissistic relationships in describing these families; as far as I know, the first to do so was Brodell (1959), who defined such a relationship as a "relationship with the projected part of one's self, mirrored in the behaviour of another person." But similar interpersonal relations were also described by Hill (1955) in his above-mentioned book when he spoke of "conditional" love, just as I did in my monograph on mothers (Alanen 1959), where I introduced a "model of schizoid interpersonal relations" referring to Fairbairn's (1952) object relation theory. Laid and his coworkers also already stressed in the articles they published in the 1950s the "over-investments" made by parents in their offspring, a paradigmatic example of which is provided by the dominating mother of a skewed family who experiences her son as an extension of herself. In his later theoretical considerations Laid (1973) also regards the parents' "narcissistic needs" and a "profound cognitive egocentricity" parallel to these as the most central pathogenetic factors in these families.

These transactional relationships have been studied most empathically by Steiner (1974), who — like Kohut — stresses their bottom-most normality. All relationships between parents and their children, as well as relationships of attachment in general, include binding. Steiner says: binding becomes pathological only when it assures forms that do correspond to the child's age-specific developmental needs — e.g., when even a comparatively old child is excessively cherished and pampered (affective binding); or forms that out of a demand for loyalty for the parents prevent the child, from establishing outside the home such relationships as he desires (superego binding).

This can also be expressed by saying that all parents experience their children not only as individuals separate from themselves but also as complements to themselves and extensions of their own lives. The narcissistic side of a parent's relationship to the child becomes pathological only when it becomes disproportionately strong — relative to the more mature side, appreciating the child as a separate person — and tends to extinguish the strivings originating from the child itself.

2. For the parents the narcissistic object relations have the significance of transactional defence mechanisms.

Another significant psychoanalyst, Otto Kernberg (1967, 1975), has in recent years very lucidly analysed and described personalities affected by disturbances graver than neurotic, for whose inner structure he uses the term "borderline personality organization". He who has acquainted himself with schizophrenic patients' family environments easily recognizes from Kernberg's descriptions also the kinds of parents he has investigated and cared for. Particularly the description that Kernberg gives of the defence mechanisms typical of his borderline personalities is very helpful when we seek to psychologically understand schizophrenic patients' parents and, generally, their family environments.

The defence mechanisms described by Kernberg that are typical of the borderline personalities, are splitting, primitive idealization, the early forms of projection — projective identification in particular — denial, and an inclination to grandiose fantasies and, on the other hand, to the devaluation of oneself both inwardly and relative to other people. The
mechanism of splitting is considered by Kernberg to be the most fundamental of these. In earliest infancy the tendency to splitting is a natural one, as the little child is not first able to combine with each other its "good" and "bad" self, and the same also corresponds to its images of the object, or the person caring for it. (Here, as in many other respects, Kernberg follows in Melanie Klein's (Klein 1946, see also Segal 1973 footsteps). When the individual begins to use splitting actively (though unconsciously), in order to keep antithetical images of self and object separate because of the anxiety these tend to arouse, it becomes a defence mechanism. Denial, projection and the other defences listed above serve the same purpose and are also in fact based on splitting: projection, e.g., is based on it in such a way that the "bad self" — the part of one's own self that is denied and isolated from its "good" part through splitting — is seen as a property of another person, not as one's own. Kernberg stresses how fateful a massive use of these defence mechanisms is for the neutralization of primitive affective states — above all, aggression — as well as for a well-integrated and coherent development of the ego.

It is easy to realize that splitting also plays a role of fundamental significance in the psychology of many a phenomenon met in the families of schizophrenic patients, e.g., in the psychology of double-bind and pseudomutuality. Yet it seems even more important to me that, even though Kernberg describes the defence mechanisms concerned from an individual-psychological, psychoanalytic point of view, they very often also have another side, directed at an connected with another person, this other person being used as a support to and a part of one's own defence mechanisms. This happens particularly in connection with narcissistic object relationships, which will thereby also be used for purposes of defensively-based narcissistic self-expansion. The experience gained through family therapy shows (cf. Alanen 1977) that such transactional defence mechanisms may also be associated with the entire field of the family unit. At this point it may be best for me to use an example to illustrate what I have said. The following case no doubt represents an extreme in its kind (as case illustrations often do), but this is precisely why it quite concretely illuminates a parent's narcissistic relationship to her child and her use of defences, associated with this relationship, for the maintenance of her own inner balance.

The patient in this family was its only child, a school boy, who was admitted to hospital at the age of 17 for grave symptoms of hebephrenic schizophrenia. Characteristic of the patient and his behaviour were helplessness, incoherence and childish regression on the one hand, and both very intense anxiety states, accompanied with catatonic praying, and aggressive outbursts, on the other.

The family situation was skewed. The patient's father was a hard-working man who had succeeded rather well in life; still he was soft and passive at home, seeking support from his wife. A few years before the onset of the patient's psychosis the father had suffered an attack of a somatic illness, which had partly disabled him and had further weakened his role in the family dynamics. The patient's mother was an extremely protective and dominating woman in whose eyes everything was either absolutely black or absolutely white. Kindness and goodness were her supreme ideals and she praised "both her boys" (her husband and son) for meeting them. Manifestations of aggression were virtually completely forbidden in this family, in which an atmosphere of typical pseudo-mutuality, as described by Wynne et al. (1958), prevailed.

Family therapy was attempted because of the possessive attitudes exhibited by the mother during the visits she paid to the hospital and the problems that had made their appearance during the patient's home visits: he would be unexpectedly aggressive from time to time and even grasp his mother by the throat. During the conjoint sessions the mother's attitude was quite reserved; the most important thing in her opinion seemed to be to have the son realize that one must not be aggressive. The father's attitude during the sessions was passive: he mainly shared his wife's opinions, whereas the patient himself kept silent.

In her childhood after her father's death this mother had been placed, at the age of 5, in the care of her own mother's sister as a foster child. She praised her foster-mother as an "extremely good" and admirable human being, denying that she had herself ever had any disappointments or frustrations. Religious ideals had played an important role in her upbringing and she continued to adhere to them. Her way of relating to the patient was infantilizingly cherishing, and she also expected him to be absolutely loyal to her own ideals; thus, her relationship to the son involved all three modes of binding described by Sierlin: both affective and cognitive binding as well as superego binding.

It may be assumed that the idealization of her foster-mother by this mother served the denial of the disappointments and aggressiveness springing from her experiences of rejection; such idealization had no doubt been necessary for her in childhood. Her son and, as a matter of fact, her husband also — she quite clearly experienced as a part of her own self, as it were, and this was why the son's
aggressive behaviour during his psychosis — which behaviour had clearly to do with his age-related though diffuse stirings for individuation — aroused in her both fear and a very intense, ambivalent inner anxiety, which caused her previously dominating attitude to change into a rejecting one. Her dominating attitude was reflecting both the absence of psychological boundaries between herself and the other family members and, quite probably, a strong need for support on their part — a desire to keep them with herself.

In the therapy of a family like this it will be important to listen to the mother and understand her; this is in the initial phase more important than the supporting of the son’s stirings for separation — its time will come only later. The therapist of this family — which was one of the first in our series — was not yet sufficiently aware of this, nor was I, acting as his supervisor. The family therapy came comparatively shortly to an end as the mother stated that she was obliged to leave for the country to care for her foster-mother.

How frequent, then, are so strongly pathological relationships to the child in the parents of schizophrenic patients? In the most recent edition of American Handbook of Psychiatry, Arieti (1974) has maintained that encounters with such "classical type" of excessively dominating and manipulative mothers have led us to partly unfounded generalisations concerning the pathogenic significance of disordered parent-child relationships in schizophrenia — as, after all, such mothers only form a minority of these patients' mothers. Arieti's criticism is justified in two respects: first, in the sense that excessive attention has been given to pathogenic mother-child relationships of this kind and "schizophrenogenic" mothers have been spoken of, taking not into consideration that a mother's ways of relating to her child is never independent of the other interpersonal relations that are influencing or have influenced her; and secondly, in that parental attitudes toward the patient child characterized by evaluation and rejection, rather than symbiotic possessiveness, are also met in schizophrenic patients' families. Yet it should be stressed, on the other hand, that defence mechanisms of a transactional nature can also be perceptible behind such more negatively coloured parental attitudes.

My own attention has been attracted, for instance, by paternal attitudes in cases where the father has, it seems, projected his own "weakness" or "softness" — which he wants to deny in himself — onto his son, whom he has then apparently been able to experience only as "weak" or as needing a "guardian" (for a more detailed account of this, see Alanen 1977). What is concerned here is one form of so-called projective identification, which plays a very central role among the family-dynamic defence mechanisms making use of another person. By it is meant the unconscious "location" of a characteristic of one's own self to another person, with whom one identifies in this respect and in whom this characteristic is cherished, projected and controlled. The well-known family-dynamic concept of delegating, introduced by Strülin, is intimately related to this defence mechanism (even though delegating does not always have the nature of a defence).

In the series of 100 unsedated schizophreniare
group patients formed recently in Turku for our treatment study, we classified the mother’s relationship to the patient in 61 cases as "conspicuously possessive", in 4 cases as "conspicuously hostile", in 21 cases as "conspicuously indifferent" and in 2 cases as "normal", whereas 12 cases remained outside this classification. The father’s attitude toward the patient was "conspicuously possessive" in 30 cases, "conspicuously hostile" in 9 cases, "conspicuously indifferent" in 21 cases and "normal" in 12 cases; in 9 cases the father was lacking. Raimo Salokangas's (1978) multivariate analysis of another series of schizophrenic patients from Turku showed that overdependence in the parent-child relationship was of more frequent occurrence in the group of typical schizophrenics, whereas childhood conditions characterized by lack of family cohesion were met often in the more reactive, schizophreniform psychoses.

We may thus state that the unconscious pathological defence mechanisms, which psychoanalytic research has traditionally seen as intrapsychic phenomena, may also occur in accentuatedly interactional forms, i.e., in forms connected with interpersonal relationships. I have proposed (Alanen 1977) that these should be called "transactional defence mechanisms".

Transactional defence mechanisms are used particularly by persons characterized by a deficient integration of self- and object-representations. This applies especially to the borderline personalities described by Kernberg, and as many parents of schizophrenic patients belong to this category, their dominating and manipulative attitudes toward children become thus easier to understand.

3. The parents' transactional defence mechanisms are often based on their own separation anxiety.
According to Kernberg (1967) the aim in the use of the primitive defence mechanisms based on splitting is, above all, to prevent the "bad" self- and object-representations experienced as dangerous from becoming conscious. As shown by the example presented above, projective externalizations may also comprise representations experienced as "good".

Family therapeutic experience shows that parents' transactional defence mechanisms are related in the first place to their own unresolved separation problems. They may need the child for the mitigation of their own anxiety and will therefore "exploit" it psychologically — just as the child living its separation and individuation phase needs the parent's lap for the same purpose. We may guess that a narcissistic self-expansion due to such a factor was also involved in the above case illustration.

Caring for a young child invariably involves a degree of projective identification with it. This provides a parent — particularly a mother, who has been severely frustrated in her own childhood — an opportunity to get a sort of compensation for her frustrations, by reliving her own childhood with the child, as it were. This is why the child's very earliest developmental phase, when it has not yet become separated from the mother, is often particularly gratifying to the mother. It is tragic that with this is not infrequently associated an endeavour to continue an equally gratifying relationship also later, a desire to "have things remain unchanged", which often characterizes especially the attitudes of affectively bonding mothers toward their children and causes them to resist un- consciously their children's attempts to achieve independence.

SOME ETIOLOGICAL ASPECTS

1. The development of schizophrenia is a multi-phase process.

According to the classical psychoanalytic phase-specific conception of schizophrenia the fundamental disturbance making for a proneness to this disorder occurs during a very early period of life, in infancy, when the boundary between the self and the outer world is still hazy. A sort of therapeutic nihilism is a frequent concomitant of this conception: a person who has been disturbed at such an early period of life, so it is argued, is outside the reach of our therapeutic means. One of the most distinctive clinical characteristics of a schizophrenic condition is, no doubt, the disappearance of a distinct boundary between the self and the external world, as is evidenced by the disturbances of reality testing met in these patients — e.g., the location of inner experiences and perceptions by them into the outside world (for this, see, e.g., the lucid description in Schule 1975).

I already presented reasons why this view seems too narrow to a family investigator. One of them is the often persistent nature of the intrafamilial disturbances in the families in question, which in itself makes one think that the etiological factors may also extend wider in time. The developmental phases have no sharp boundaries; as has been emphasized by Margaret S. Mahler (Mahler et al. 1975), they partly overlap. Moreover, the level of regression need not always exclusively reflect the phase of origin of the disturbance; it is also likely to depend on how development proceeded during the next phase.

Particularly the interactions related to binding will clearly not become remarkably pathogenic until the so-called separation and individuation phase of the child — a phase reaching, according to Mahler, its most critical point during the latter half of the second year of life and extending till the age of 36 months. This applies, I think, especially to the phenomena of cognitive bonding. They will cause disturbances in the child's ego development only during the stage at which the child has already begun to differentiate, organize and also integrate its conceptions of both its own inner self and the external world — a stage, that is, which is certainly not limited to the child's first year of life but coincides mainly with the later part of the separation and individuation phase. The separation problems met in the parents themselves also speak for the importance of this entire phase in the development of their children as well.

Likewise, family investigators have had difficulty in accepting without a great deal of modification the views of the nature and therapy of schizophrenia based exclusively on the psychoanalytic instinct theory. In the 1960s I stressed myself that schizophrenia is not an illness of the id but an illness of the ego (Alanen 1960) and that in the psychology and treatment of these patients the "dependency needs of the ego" — the needs for support and, also, identifications directed at other people — are of crucial significance (Alanen et al. 1966, Alanen 1968). These conceptions find, I think, some justification in the thorough analysis presented by Kohut in his new work, The Restoration of the Self (1977), even though he does not consider the possibilities of therapy — or at least: psychoanalytic therapy — with actually psychotic persons. Instead of speaking of the "dependency needs of the ego" we should
speak, following Kohut, of the "dependency needs of the self." 1

The question of the significance of the later developmental stages in the pathogenesis of schizophrenia is also an interesting one. The experiences based on family research and family therapy, stressing the significance of the family environment as a whole, have revealed that the part played by the father and not only that of the mother is important. There is a lot of evidence suggesting that a disturbed father relationship has been pathogenic in the case of many schizophrenic patients. On the other hand it can be assumed that a good and stable relationship with the father or some other important adult person may greatly compensate the influences

1 According to Kohut, the diseased sector of the self will in the cases concerned not become involved in the "limited transference amalgamations with the self-object" in the way it does in milder narcissistic disturbances (Kohut 1977, 192–193). This view is not, in my opinion, consistent with the experiences gained by psychoses psychotherapists (e.g., Searles 1961, Schulz 1975). Kohut himself may not possess much experience of the psychotherapy of schizophrenic patients. It is another thing that the ordinary psychoanalytic treatment technique is not relevant with them.

originating from a disturbed mother relationship during an earlier developmental phase.

An important part in the pathogenesis of schizophrenia is played by the success or failure of identity formation in adolescence. The illness often sets in during that period of life or soon afterwards. A study by Viljo Räikköläinen (1977) showed that in the majority of cases in an unselected sample the schizophrenic psychosis had set in during some important developmental stage of transition: either when the subject was faced with separation (often a delayed one) from his family of orientation, when he was attempting to establish (usually after failing in love) a more adult-level interpersonal relationship than before, or when some significant change was about to take place in his psychosocial role, Räikköläinen also showed that these persons' inner psychic structures had often remained fragile during their prepsychotic course of development, with the result that they were dependent on the "world of self-objects" — they were dependent for their inner balance either on preponderantly narcissistic object relationships or on grandiose fantasies. The psychosis will set in when such protective

constructions fail.

In considering the factors precipitating the onset of psychosis, reference should also be made to studies that have been made concerning the relationships between the development of psychosis in married persons and their marital problems (e.g., Alanen and Kinnunen 1975).

The proneness to a schizophrenic regression is likely to presuppose a weakness of the early individualization, but the manifestation of the disorder is also dependent on later developmental factors, though variously in various cases. As Mahler (1975) has pointed out, there are innumerable degrees and forms of partial failure of the separation-individuation process. Could it be so that, say, some five per cent of human beings have, owing to their hereditary endowment and early psychological development, a predisposition to fall ill with a schizophrenic psychosis later in life but that only one per cent of them do fall ill, partly because of the influence of later factors — ranging from the continuation of pathogenic parent-child relationships to various detrimental experiences in later life?

2. Genetic factors should not be studied separately, but attention should be given to the interaction between them and the psychological factors of the family environment.

What then, is the significance of genetic factors? I will merely state that both twin studies and adoptive-child studies show that they do play a part in the etiology of schizophrenia. What is concerned, however, is likely to be only a relative, genetically multifactorial proneness to disturbance, rather than a specific disturbance connected with a single gene. Such a conception has found support particularly in Poika Tiianari’s doctoral dissertation, dealing with identical twins and published in 1963, as well as in a similar study published by Einar Kringlen (1967) in Norway.

In investigating childhood psychoses Mahler (1966) was inclined to stress the part played by constitutional factors in the etiology of these disorders. What was concerned, in her opinion, was not so much the presence of a schizophrenogenic mother but, in the first place, a "defect in the child’s intrapsychic utilization of the mothering partner". Still, according to her, the drive for and toward individuation must be regarded "as an innate powerful given," which "may be muted by the parent)" (Mahler et al. 1975). On the basis of our own family studies (Alanen et al. 1966) I have put forward the view that a mother (or a father) craving for a symbiotic relatien-
ship with a child may "select" for this purpose the one of her children that is constitutionally the most passive and, thus, the most apt to respond compliantly to such a request, at the same time that the other children are more defiant and develop more autonomous patterns of interpersonal relationships. The hereditary factors should not be investigated separately from and independently of the interactional processes; on the contrary, one should also be able to see the field of interaction between them and the psychological factors in herent in the family environment.

ON THE THERAPEUTIC ATTITUDES TOWARD SCHIZOPHRENIC PATIENTS AND THEIR FAMILIES

The therapy of schizophrenia has been influenced by family studies along a wide front. The bearing of these studies on the development of family therapy has of course been the most important, but I will also discuss below their impact on the general therapeutic attitudes toward schizophrenic patients.

1. The therapeutic attitude toward the schizophrenic patient.

Simo Salonen (1976), a Finnish psychoanalyst, has used the concept of "holding" to characterize the therapist's basic attitude of the kind that is particularly necessary in caring for schizophrenic patients: an empathic attitude, trustworthy in its continuity, carrying the patient in a psychological sense, as it were. The term "holding" was introduced by Winnicott (1960), who used it to describe the mother's relationship to the child. Marita Torstil (1976), another Finnish psychoanalyst, called the inner space — the symbol of womanhood and maternity quite frequently used in recent psychoanalytic literature (e.g., Häggland et al. 1978) — the "psychic representation" of holding, of keeping the child in the lap and of caring for it.

It may indeed be legitimate to maintain that the woman in each of us — including, ultimately as a result of identifications with mother, every man — has an important part to play in the care of schizophrenic patients and that our culture and psychoanalytic tradition, characterized by a phallic orientation, have for this reason also been inclined to discriminate against these patients.

It should be stated, however, that these patients do need a paternal therapeutic element also: they have a need for a combined parent figure possessing, in addition to understanding, a readiness to delight in the child's growth and individuation. What is concerned is a rather global and patient therapeutic attitude, which cannot adequately be described by the word "gratification", as the "specific curative factor" in the case of psychotic-level pathology has recently been characterized in Finland (Tähtä 1976).

2. On caring for the family.

But a similar empathic attitude toward these patients' families is also called for. The disturbed attitudes of parents, which I have described above, are to be seen as originating from their own problems and difficulties, and both support and understanding should be given to them also. In the conjoint family therapy, which is often necessary with the youngest patients in particular, the therapist is likely to become almost always not only the patient's but also the patient's parents' "parent". As a result of this, the parents will direct their dependent needs at the therapist, and this in turn is likely to ease the psychodynamic position of the patient-child and provide him with improved opportunities for growth. In the most favourable case the conjoint therapy amounts to a process of growth of the whole family, in which matters are discussed and worked through at the levels of more than two generations; in other words, the parents' relations with their own parents will be involved in it. The changes taking place in the parents' personalities are usually not great; nevertheless, the family homoeostasis may develop in a direction important to the patient, largely as a result of the parents' identification with the therapist and, also, with the therapist's attitude toward their child (cf. Alanen 1976, 1977).

One important goal in the family therapy of the young schizophrenic patient is in fact to free not only the patient but also his parents from their ties of dependency. This will happen by working through their mutual separation problems, with which, particularly in the case of the parents, delayed mourning work will be associated (as has been stressed especially by Sierlin, 1974 b). At the same time the therapist has to offer his help for the unravelling of mystifications and has to be ready to encounter justified outbursts of bitterness and hatred, anxiety and, also, guilt, and to aid, through his attitudes, the family to attain a new, and often reconciliating, state of equilibrium. In these his efforts the therapist can find support in the healthy forces and endeavours which are also met virtually always in these families and which are likely to strengthen in the course of the treatment.

A conjoint therapy of the patient and his
parents is not called for in every case of schizophrenia (cf. also [Lidsz, 1973, Stierlin 1976]). In Turku we are currently conducting a treatment study, in connection with which an effort has been made to formulate for each patient an optimal treatment plan consistent with the facilities of a community psychiatric service. (The team includes, apart from myself, Viljo Räikköläinen, Riitta Rasimus and Juhani Laakso; cf. Alanen et al. 1978). During the first stage of our study we regarded the conjoint therapy of the patient and his parents as indicated in 15 out of our 100 cases. This subgroup consisted chiefly of young patients in whom the developmental disturbance and the onset of psychosis seemed to be so intimately connected with intrafamilial interpersonal relations — with such a "dependency knot" — that its unravelling without a direct psychotherapeutic intervention in the intrasomatic interactions did not appear possible. It was presupposed, in addition, that judging from interviews with the patient and his parents, they could be motivated for a conjoint family therapy and that the family's life situation would not prevent such sort of treatment. It should be mentioned for the sake of comparison that intensive individual therapy was considered indicated in the same series in 25 cases, or in a quarter of the total. A prerequisite in these cases, too, was that the patient had a sufficient motivation for the examination of his own problems or that such a motivation could be aroused in him.

One interesting result was that conjoint sessions with the patient and his spouse, for the purposes of family therapy or for the exploration of the family situation, were considered indicated in this study in 80 per cent of the cases where the patient was married (and, in addition, in a few cases where he had recently divorced), or in 26 cases in all. This reflects the very important part that, according to the views arrived at by the investigators, marital problems had played in the onset of illness in these patients. In these families, and particularly in those of them where the patient had children, the preventive-psychiatric significance of family-centred working was also clearly in evidence.

Despite the fact that conjoint therapy was considered indicated only in a section of the families in our series, we regarded a family-centred therapeutic orientation as important in nearly all the cases in the study — only in three of the one hundred cases concerned was there no kind of contact with the patient's family necessary in our opinion. Even the cases where a conjoint therapy of the family or the spouses was considered to be called for included many in which, in our opinion, not only the patient but also other family members were in need of care and support, this being in fact one of the reasons why we regarded precisely such therapy as indicated. Also, in cases where actual family therapy was not considered indicated, the most important reason for drawing up a family-centred treatment plan was an endeavour to support the patient's family members, so as to prevent the patient's illness and its treatment from becoming too anxiety-evoking and stressful to them. Often the patient's individual psychotherapy will also benefit quite substantially from contacts with the other family members. And there are cases where, because of lack of treatment motivation in the patient, some of his family member's keeping in touch with the therapist becomes the crucial factor in his ambulant therapy.

There is one further point I wish to consider here. I hope that it has become evident from what I have said thus far that the goal of the family investigator and family therapist is to understand and help both the schizophrenic patient and his parents and other family members, not to accuse or condemn them. Still, the family investigators are told time and again, also by their biologically and genetically oriented fellow researchers, that through the conceptions they are putting forward they may do as much harm as good, giving rise to self-accusations particularly in patients' parents. In connection with such criticisms it is also often pointed out that, after all, there is not yet enough empirical evidence in support of the findings presented, i.e., empirical evidence gained through the methods of natural science.

In cases where the parents cannot be given the necessary help in the form of family therapy, such assertions are not without justification. It should also be stressed — once more — that disordered transactional relationships are not the only cause of schizophrenia; a part is also played by hereditary factors, as well as other somatic, psychological and, in a broader sense, social-level factors, and the nature of these factors and their interaction has by no means been exhaustively clarified.

But at the same time such attitudes toward family studies involve defence mechanisms, to the existence of which at both the individual and the later-individual level I referred at the beginning of my lecture; above all, defences against the anxiety and guilt that is caused in us by our responsibility for our children and our other fellow human beings. Like all
defences, they are unable to undo anxiety, even though they may be able to cover it, more or less, at the same time that they block the path toward a liberating and reconciliatory development. As I see it, the study of schizophrenic patient families has not only opened up new possibilities for the therapy of these families and the patients belonging to them but has also generally added to our knowledge of both the healthy development of the human being and of the disturbances in this, in a way which may have even far-reaching consequences particularly in the field of prophylactic mental health work.

REFERENCES


COMMENTARY ON THE LAPINLAHTI LECTURE 1978 “SCHIZOPHRENIA AND THE FAMILY”
BY YRJÖ O. ALANEN

The Psychiatric Clinic of the Helsinki University Central Hospital together with the Foundation for Psychiatric Research decided to establish the Lapinlahti Lecture, which is a series of lectures given by distinguished Finnish psychiatrists every other year who were invited to speak about an important and topical theme of their choice. The first Lapinlahti Lecture was given in 1978 by Yrjö O. Alanen.

It is not surprising that the topic of this lecture was schizophrenia. The lecture was 14 printed pages in length and included 64 references. It started with a citation from the textbook of psychiatry by Achté, Alanen and Tienari, which was used for university-level education those days. The lecturer wanted to make the point that the development of antipsychotics had strengthened the biological study of schizophrenia and induced new theories of its aetiology, which had attracted much attention but had distracted from those emphasizing the family.

The lecturer mentioned Lauri Viita, a novelist, who was admitted due to schizophrenia and whom he met when he first served as an assistant physician at the Lapinlahti Hospital in November to December 1952. Since those days his diagnosis has been revisited, and here I advise the readers to have a look at and refer to the book Kirjailijan kieli ja mieli: Lauri Viidan elämä sairauden valossa, which the Foundation for Psychiatric Research published in 2012 (see http://www.psykiatriantutkimussaatio.fi/index.php?id=11). According the principles of sustainable development, the book was sold out and is available only from libraries and second-hand bookshops.

Towards the end of the lecture, it became more and more defensive, as “the family investigators are told time and again, also by their biologically and genetically oriented fellow researchers, that through the conceptions they are putting forward they may do as much harm as good, giving rise to self-accusations particularly in patients' parents”. It ended with a view on family studies of schizophrenia that have added to our knowledge of healthy development and its disturbances, which might have impact on prophylactic mental health work, or in other words used today, on mental health promotion.

Timo Partonen, Editor-in-Chief
ARTICLE

THE IMPORTANCE OF PSYCHOTHERAPY IN HEALTHCARE

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THE IMPORTANCE OF PSYCHOTHERAPY IN HEALTH CARE

by Veikko Tähkä

The Psychotherapy Committee appointed by the National Board of Health recently completed a report which aims to clarify the concept of psychotherapy, the need for psychotherapy and the current opportunities in Finland for the training of personnel qualified to carry out psychotherapeutic activities. Because of this, discussion of the position, participation and importance of psychotherapy in health care services is of particular interest at present. In the following lecture I propose to examine these matters from a personal point of view and also to make some concrete proposals on the basis of this examination.

WHAT IS PSYCHOTHERAPY?

In my textbook of psychotherapy I defined it as “a professional and deliberate attempt to influence a disturbed individual by psychological means, with the purpose of eliminating or alleviating the disturbed state and consequent suffering” (Tähkä, 1970).

By emphasizing psychotherapy as being a professional and deliberate activity, I wanted, firstly, to underline that the practice of psychotherapy necessitates a clearly defined professional training, in which questions of competence and responsibility have been clarified. Unfortunately, such training is in no way usual in present-day society. On the contrary, the psychotherapeutic area is made up of a variegated collection of some extent questionable services, offered against a very uneven educational background and degree of competence. The situation is affected by many factors, the most important of which is probably increasing need for psychotherapy in society, or, rather, increasing awareness among the general public of such a need and the possibility of its fulfilment. Another important factor is that certain subtechniques employed in psychotherapy can be superficially learned relatively easily, in a short time, and these make possible, for instance, the opening of various hypnotism and group therapy centres by individuals without any real training and the necessary knowledge and experience.

Such entrepreneurs, whose basic knowledge of normal and disturbed functioning of human personality, and of the nature of the psychotherapeutic process, is usually highly deficient, and whose judgment and sense of responsibility are often defective, not only constitute a group harmful to the status of psychotherapy as a serious form of treatment, but are also a real danger to individuals accepting their offers of services. The pointless pecuniary loss involved in buying such services is probably the least serious issue. More serious consequences involve exacerbation of mental disturbance through diagnostic
and therapeutic incompetence, or use of the therapeutic relationship to gratify the therapist's own needs. There is an urgent need to intensify the control of various activities carried out in the name of psychotherapy, in the interests of patient safety. Such intensified control naturally presupposes clarification of requirements relating to training and qualifications covering psychotherapeutic activities and, in particular, a definition of the kind of demands imposed by various psychotherapeutic activities, of different types and degrees, upon the skills of the practitioner.

It is also important to stress that psychotherapy is a deliberate action, aiming expressly at certain therapeutic goals. In this respect it differs, for example, from relationships between friends or other similar human interactions which may, by accident, and unintentionally, have temporary or permanent effects favourable to mental health. It is because of the professional and deliberate nature of psychotherapeutic activities that any practitioner of psychotherapy, like any practitioner or another responsible profession, should be able to justify whatever action is taken at any given time, and to define the goals of any activities carried out. The fact that an individual providing therapy has been trained for mental health work by no means guarantees that any interaction between that individual and the patient will be of psychotherapeutic significance. The term psychotherapy has, in this regard, in recent times, effectively suffered from inflation of its meaning, to such a degree that almost any conversation or exchange between a medical professional individual and a patient is readily described as psychotherapy.

A treatment relationship is not synonymous with a psychotherapeutic relationship, but it is possible to increase the psychotherapeutic significance of treatment relationships to patients. I will return later to how such increases can be achieved, and, especially, to why they are important, not only in psychiatry, but in all treatment relationships in health care. The devices of psychotherapy are psychological in nature, and the results achieved depend on the degree to which it has been possible to utilize the relationship between the patient and the therapist in accordance with the patient's therapeutic needs. In order to exercise professional and meaningful activity, the therapist should, in each case, have an adequately justified conception of what relationship has developed, and will develop, with the patient, as well as of the reasons for those changes in the patient's condition which seem to be connected with the therapeutic relationship.

Such an understanding necessitates on the part of the therapist availability of a consistent conceptual frame of reference, embracing a logical empirical theory of the development, structure and function of human personality. Whichever established theory of personality with therapeutic implications may constitute this frame of reference, it is generally only possible to employ one frame of reference at a time. Eclecticism has little place in psychotherapy, because it destroys the possibility of consistent understanding of the therapeutic situation and changes therapeutic endeavour from a developing process into an application of set recipes and various assemblages of tricks.

The above comments are closely linked with the fact that the target of psychotherapeutic activities is not a discrete symptom or disturbance, but an individual suffering from a variety of disturbances and symptoms. This is true not only as regards psychotherapeutic assistance but also in respect of all other health care services, irrespective of whether a patient's symptoms are
manifested primarily in somatic or psychosocial form. I will revert to this later.

In the definition of psychotherapy quoted at the beginning of this lecture, the aim of psychotherapy was said to be the elimination or alleviation of a disturbed state in an individual, and the suffering in which it results. I will not discuss here what constitutes health and what sickness, or what makes up disturbance, and what freedom from disturbance, of functioning and the inner world of the human organism. Definitions of sickness and health are usually regarded as combinations of various facts and value judgements, which may vary to a greater or lesser degree as between different cultures, social systems and subcommunities.

The dependence of definitions of mental sickness and health upon value judgements is, however, in my view, diminished if mental disorders are regarded primarily as disturbances of personality development, with the degree and nature of the disturbance primarily determined by the stage at which development of the personality structures and functions has been arrested or distorted in comparison with empirically determined “normal development”.

However this may be, it suffices here to say that the primary values critical to psychotherapeutic activities, are health values and “knowledge values”. The latter are emphasized, from the patient’s point of view, in those forms of psychotherapy in which attempts are made to extend the patient’s awareness of himself and his motives, i.e. to increase his self-knowledge. Even then, however, the primary aim of increasing knowledge is usually the increase of health and decrease of disturbance.

It is vitally important that psychotherapy as an activity relies as little as possible on value judgements, as an activity devoted primarily to serving the individual, and individual therapeutic needs. This requires that the psychotherapist is aware of, and respects, the fact that people are different, has a certain basic notion of the relativity of human values and has sufficient training and ability to keep his own value judgements apart from the therapeutic situation to a sufficient degree. It has often been claimed that the personal values of the therapist make a sufficiently objective study of patients’ values impossible. In fact, the situation is quite the reverse. It is the very fact that the therapist, like the patient, is a human being, with feelings and values, that makes it possible for the therapist’s own personality to be used as an instrument in the service of understanding the patient. This kind of disciplined use of individual personality to aid understanding naturally requires not only a certain natural aptitude, but also adequate training and experience.

In this connection, it should be noted that the methods and techniques of psychotherapy are increasingly used in modern society to serve values and the attainment of goals other than those associated with psychotherapeutic activities. The methods of psychotherapy are used, inter alia, with commercial intent, in advertising. In political life, they are applied to market various views of the world and differing ideologies, and in an attempt to influence voting behaviour. The Church has, in some respects, adopted psychotherapeutic methods to such an extent that it can often be hard for an outsider to tell whether spiritual charge or psychotherapy in concerned, on any given occasion.

It is this increasing use of psychotherapeutic methods and techniques in the service of other values and goals than those concerned with health and understanding, in particular, that makes it ever more important to draw the
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line between psychotherapy and other activities. Psychotherapy serves man and his needs for therapy, not faith-based ideologies or views of the world. The psychotherapist neither believes that he knows nor claims to know the truth, or all the answers. The utmost that can be done is to help the other person to discover his own truth and his personal solutions. Thus, psychotherapy is not prophecy, nor is it brain-washing, the offering of views of the world, or an attempt at conversion, but simply and modestly an attempt to initiate, within an expert, professional, therapeutic relationship, such processes of interaction which may have corrective and balancing effects on the functioning of the patient’s personality.

HOW DOES PSYCHOTHERAPY HELP?

What, then, is the nature of these corrective interactive processes and what is the basis of their therapeutic significance? This is too extensive a question to be dealt with fully here, and I will, therefore, deal with it only briefly.

If, in accordance with the starting point I mentioned earlier, we regard mental disorders primarily as disturbances of personality development, the aim of psychotherapy must, naturally, be an attempt to correct or alleviate this disturbance, and its consequences (Tähkä 1974).

Our empirical knowledge of human personality development, accumulated over the past few decades, has shown convincingly, from the psychological point of view, that it takes place in the interaction between the congenital equipment of the child and his first caretakers. Disturbances in these early interactions may lead to various disturbances in the formation and integration of personality structures and functions, which later manifest themselves as psychopathology of various degrees and kinds.

In addition, it is known that the earlier and more extensive the disturbances in the interactions between the child and his first caretakers, the greater the tendency to fundamental and serious disturbance of personality development, and the more severe the degree of consequent psychopathology.

Inssofar as personality both develops and is disturbed in early interpersonal interactions, psychotherapy can be seen as an attempt, within the context and with the aid of a new relationship, to correct the early defective or aberrant developmental interactions, and thus, also, to correct or alleviate personality deficiencies and abnormalities (Tähkä 1976).

Such a belated attempt at correction is made possible by the fact that a patient regularly, though unintentionally and, usually, unconsciously, reproduces in the relationship with the therapist the very forms of interaction which originally led to the disturbances in personality development underlying the patient’s pathology. In all psychic disturbances, there always occurs a partial re-activation of developmentally earlier levels of personality functioning, the phenomenon known as regression. In mental disturbance, there is usually regression to the developmental stage and forms of interaction corresponding to the period in which the patient’s fundamental disturbance originated. It is this particular property of psychopathology, to repeat its history, that makes it possible to try, within the scope of a new relationship to change the helpless repetition of the past for a newly-activated developmental process.

In practice, this means that the patients, depending on the nature and stage of their disturbances, unconsciously expect the partner in the developmental interaction to play varying roles, or, to put it another way, patients unco-
sciously expect or need from the therapist the relationship which children at various stages of development expect or need from parents or their substitutes (Tähkä 1974).

To receive and understand this developmental phase-specific message from a patient requires training of the personality of the therapist into a receptive instrument, which implies that the therapist, in addition to his cognitive reactions, must also learn to make use of the information provided by emotional reactions which patients arouse in him.

Two groups of emotionally-charged reactions of the therapist are of particular informative importance. One consists of the empathic reactions of the therapist to communication from the patient, based on temporary identification with the patient, and his situation. Such transient adoption of the patient’s position, and consequent empathic understanding requires that the therapist has, at some stage of his life, had experiences similar or comparable to that currently being experienced by the patient.

The other group of reactions of primary importance is the complementary reactions which the patients arouses in the therapist. These emotions and stimuli to action which the therapist experiences personally originate as responses complementary to the patient’s emotions and expectations in relation to the therapist at any given moment. Their correct identification, therefore, is of particular help to the therapist to understand what the patient, usually unconsciously, expects from him at any given time (Tähkä 1970).

Complementary reactions are probably species-specifically particularly highly developed in man, and are biologically important in a species in which instinctive mechanisms have been almost totally replaced by interactive learning and internalization processes during the long period of childhood. It is, undoubtedly, the parents and other adults looking after a child during the various stages of its development who act as experimental models for the development of complementary reactions. The parents’ complementary reactions towards the child are transformed, via identification, into the child’s own capacity for complementary reaction to other people, and, in time, to his own children. If empathic reactions can be compared primarily to the reactions of a companion sharing one’s fate, complementary reactions can, for their part, be compared mainly with the reactions of parents looking after children of different ages towards their charges (Tähkä 1977 a).

It is, naturally, also possible that emotional reactions of a kind which have their origin in the therapist’s personal background, and in which there is regression on the part of the therapist in relation to the patient, may be engendered in the therapist. The greatest challenge for the psychotherapist is undoubtedly learning to differentiate between what, within his personal emotional reactions, is primarily informative about his patient, and what about himself. This also places particular demands upon the training of psychotherapists (Tähkä 1979).

The treatment relationship turns into a therapeutically effective, or psychotherapeutic experience for the patient once the therapist is able to perceive the phase-specific message of the patient, and to respond to it in such a way that deficient or distorted relationships during the patient’s development are replaced by a new or alternative relationship. This, naturally, does not mean that the relationship between a therapist and an adult patient is identi-
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HOLISTIC TENDENCIES IN MEDICINE

Health care is the application of medical science, which, in turn, makes use of several basic sciences. Among these, however, the natural sciences emphatically hold a dominant position. Apart from the enormous and unquestionable benefits which the natural sciences have conferred upon medicine, the prejudice, common in medicine, against the use of the so-called human sciences in medicine has been considered to be partly due to the fact that this young science is concerned that the use of other than so-called exact knowledge and hard facts in medicine could mean regression to its magic past.

The apparent rationalism of adhering to the natural sciences alone, however, involves superstitious beliefs and objectives of its own. The reduction of causes and effects into as few clear basic formulas as possible, typical of the natural sciences, corresponds, in the area of investigation and treatment of disease, to the need of individuals to reduce threatening issues, experienced as evil and dangerous, to one single factor, separate from self, against which it would then be easier to fight. In pre-scientific, primitive concepts of disease, illness is generally explained as an external evil, resulting from the hostile influence of demons, witches and spirits of the dead. This hostility, in turn, is usually thought to be caused by the fact that the individual concerned has broken taboos, or has an enemy who has used magic against him or her. Even the patients of today are unwilling to regard their illness as a failure of their own inner processes of adaptation, but prefer to conceive it rather as something contagious, or otherwise external in origin, essentially separate from themselves. This external evil, then, has to be eliminated and destroyed, using present-day medical resources, which patients expect medically-related individuals to have at their disposal, replacing the curses and counterspells of the past.

Patients apart, such a system of belief will arise even among those actually practicing medicine, in instances when attempts are made to accord unique aetiological significance to a single factor among the many influencing disease. In such cases, regardless of whether this 'philosophers' stone' is a micro-organism, an abnormal enzyme or a biochemical deficiency, the investigator will try to give effect to his own hopes and those of his patients, that all that is evil and harmful originates from, and is capable of reduction to, one single factor, which can then be isolated and destroyed. However, a reductionistic approach to illness corresponds more to superstition than to reality. A broader and more realistic image of illness and health requires integration of information obtained using the methods of various sciences. It is clear that, as long as only the methods of physics and chemistry are used, only results in accordance with such methods will be obtained. For example, no information on the various implications of illness from the point of view of the patient's inner world and life situation can be obtained using the methods of the natural sciences (Tähkä 1977 b).

Over the past few decades, increasing attention has begun to be paid to the limitations of clinging one-sidedly to the natural sciences as a sole aid to medical understanding and treatment of disease. Medicine is in the process of changing towards increasing comprehensiveness as it integrates with itself knowledge related to man from sources other than natural sciences. In practice, this knowledge originates primarily from psychosocial frames of reference, the medically most useful aspects of which have, so far, been those
based on developmental psychology and the psychology of human relationships. A fundamental change in the attitudes of health care personnel towards patients is occurring at the same time. It is natural that alterations in social distinctions, and in the amount and quality of information, as well as in the social roles of doctors and patients, have contributed towards such changes. However, what has been much more important is the increasing knowledge of and evidence on the central importance of psychosocial factors as factors predisposing to, causing, triggering, maintaining, and aggravating illness, and, on the other hand, also as factors preventing and retarding illness, and furthering cure.

THE PSYCHO-SOCIAL FRAME OF REFERENCE

The fact that some diseases are psychosomatic in nature, which has long been known, has become more widely accepted, and now embraces virtually all diseases, at least in the sense that extensive epidemiological studies have shown that psychosocial stress significantly increases morbidity in man, in general. Factors particularly predisposing to illness have been identified as changes in life circumstances, to which effort is needed to adapt. In particular, such changes are represented by losses which exceed the individual’s capacity to mourn and accept the loss. In such cases, instead of working through, adaptation and gradual acceptance of change, reactions of helplessness, surrender and depression arise, which effectively predispose individuals to illness, contribute to its manifestation, and favour its chronicity and possible fatal course.

Other predisposing psychosocial factors of particular importance as precipitating illness are disturbances in close or otherwise important human relationships.

However, it is important that doctors and others involved in health care understand not only how psychosocial factors contribute to the origin and course of physical illness, but also the reverse, the psychosocially harmful effects which physical illness and various therapeutic measures can have on patients. Illness is always mentally stressful, and this is trying for patients to different degrees, both from the point of view of their inner world of experience and also, often, their life situation. On the reality level, stress is naturally greater, the higher the likelihood of death, the possibility of becoming chronically ill, suffering a permanent change in the body or its functions, or social stigma. Irrespective of the occurrence of these factors, however, individual motives and background factors peculiar to the patient may endow the illness with subjective significances leading to anxiety, depression, guilt or shame, due account of which ought to be taken in treatment.

If the aim of diagnosis is to enable a realistic plan of treatment, best suited to the patient, to be devised, it needs to be multidimensional and to incorporate, apart from physical determination of the nature of the disease, an appreciation of the importance of psychosocial factors in its development and, on the other hand, of the effects of the disease on the overall psychosocial situation of the patient. Both physical symptoms and psychosocial factors, and their various interactions should be carefully taken into account in planning treatment and putting it into effect. Only if the interrelationship of these factors is thoroughly understood for a given patient can an individual prognosis be reached.
Application of the psychosocial frame of reference is, therefore, of critical importance in all therapeutic relationships in health care, both from the point of view of an adequate, sufficiently comprehensive diagnosis and of implementation of treatment, irrespective of the origin of the patient’s disorder. This naturally necessitates appropriate knowledge and skill on the part of health care personnel.

Since application of a psychosocial frame of reference to health care takes place in the interaction between the individual responsible for treatment and the patient, the former ought to be able to create a treatment relationship which will guarantee from the patient an adequate flow of information concerning the disease, and which will mobilize the patient’s available resources to overcome the disease or adapt adequately to the reality of a chronic illness. It has been documented in many studies that the efficacy of physical treatment measures is usually critically dependent upon the quality of the relationship between therapist and patient. This is the basis of, inter alia, the much-discussed placebo effect.

It would, therefore, seem that, to attain these goals, the various groups of individuals active in health care need to be given sufficient knowledge of psychosocial frames of reference, and how to apply that in their work. There would seem to be a particular need for them to learn to understand what takes place within treatment relationships, and how what happens can best be used in relation to the tasks of each group of workers, to achieve therapeutic objectives.

It is of the utmost importance to recognize that the therapist has, as a rule, apart from his matter of fact and realistic professional role, additional less conscious significances to the patient, dependent upon the patient’s personal developmental background. These arise from the regression which is regularly associated with falling physically ill and which, in turn, is linked with the experience by the individual that he is no longer, as an adult, able to cope normally, but that, on the contrary, help and treatment must be sought from someone else. This inadequacy of later forms of adaptation, together with the necessity for a dependent treatment relationship, usually activates earlier levels of personality functioning and earlier forms of relatedness to other people. Usually unconsciously, patterns of experience and behavior become partly childlike, and the patient will tend to relate to the individual responsible for treatment in the same ways as he or she related to the parent or parental substitute in childhood.

Understanding of the fact that the individual responsible for treatment tends, to various degrees, to become a fresh representative of the patient’s early care-takers, opens new and significant possibilities from the point of view of those active in health care, both as regards understanding of the treatment relationship and its adequate utilization. Where an acute or relatively short-term disease is concerned, activation of childhood interpersonal relationships in the treatment relationship is usually also transient. In chronic diseases, in contrast, it tends to persist, and cannot then be used to motivate the patient for restoration of health, although it can be used to support the patient otherwise, especially in promoting rehabilitation.

The situation is, naturally, different if the patient is mentally disturbed before falling ill physically or if the somatic disease triggers a more severe mental disturbance. In such cases, management of the situation may require specialist psychiatric and psychotherapeutic assistance.
PSYCHOTHERAPY AND HEALTH CARE

In the foregoing, I have, quite obviously, spoken about psychotherapy, or at least a certain type of psychotherapy, occurring within a treatment relationship which has goals other than those focusing specifically or solely upon a psychic problem. As mentioned above, physical disease always amounts to a mental crisis, to some degree, for each individual. Therefore, its comprehension and handling require that the therapist’s professional equipment includes basic preparedness for crisis psychotherapy.

The currently made strict dichotomy between the practice of psychotherapy proper, on the other hand, and a psychotherapeutic “attitude” which is not precisely defined, on the other, obscures rather than clarifies the real circumstances. It would be more useful to take as a starting-point the fact that health care consists primarily of a variety of treatment relationships between patients suffering from very different types of illnesses, and health care workers from various fields. These relationships serve therapeutic aims and it is, therefore, of primary importance to try to assess the extent and type of psychotherapeutic content they should embody, to bring about understanding and treatment of the patient’s disease in the most effective way. Such an assessment ought then to lead to corresponding qualitative and quantitative changes, and additions to both the prescribed duties of various groups of workers, and their basic and subsequent training programmes.

It is quite obvious that certain basic psychotherapeutic skills are needed in all treatment relationships of the health care. In addition, different groups of workers and different specialties need psychotherapeutic skills specific to their particular field of work. Virtually all those active in health care therefore need some training in the psychology of human relationships and in psychotherapy.

The most profound knowledge, skills and experience concerning psychotherapy are, of course, required by those engaged in treatment relationships which have psychotherapy as their principal purpose. This imposes corresponding special requirements in training the therapists, as in training an expert in any field. The concept of psychotherapy as an activity necessary to various qualitative and quantitative degrees in a range of treatment relationships does not alter the definition of psychotherapy. Neither does it endanger the position of psychotherapists at specialist level any more than, for example, the conduct of operative surgery at general practitioner level endows the physician concerned with the knowledge, skills and competence of a specialist surgeon.

The Psychotherapy Committee of the National Board of Health has, in its report, in broad outlines, charted both the psychotherapeutic education included in the basic and additional training of the various professional groups engaged in health care, and the psychotherapeutic training programmes proper employed in Finland. Since assessment of all the education of the first-mentioned personnel would require a great deal of time and precise acquaintance with programmes of instruction and their implementation, I will, in this lecture, deal only briefly with the matter, from the point of view of training of physicians.

The teaching of psychology, medical psychology and the patient–doctor relationship which has been incorporated into the basic training of physicians in recent years has undoubtedly increased physicians’ knowledge and psy-
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action of some degree and some kind occurs in all treatment relationships, to be correct, it is reasonable to state that all, or virtually all, those receiving health care need psychotherapeutic help, to some extent at least.

In planning measures to increase psychotherapeutic knowledge and skills in health care in general, a vague recommendation that the general psychotherapeutic expertise of health care workers should be increased, both through structural personnel changes, and more training, is not enough. Instead, I would propose, as a principal recommendation the implementation of a study of the overall need for psychotherapy optimally required in the treatment relationships in health care, taking account of its special character in different specialties and personnel groups. At the same time, naturally, the extent and degree of need for specialist psychotherapeutic services should be charted. As far as I can see, it is only after such an assessment that implementation of the necessary changes in training and personnel structure could begin.

The psychotherapeutic expert committee proposed in the abovementioned report, to be established under the auspices of the National Board of Health, ought, first, to carry out this assessment, and the National Board of Health ought thereafter to contribute to the practical implementation of its subsequent conclusions. The above-mentioned working committee should be available for consultation, to provide continuous expert advice, within this programme for supplementation of psychotherapeutic knowledge and skills, directed towards the health care system as a whole.

I would regard the planning of the basic programme of specialist psychotherapeutic training to be only a secondary task of the expert working committee. It could either approve the existing training programmes as a whole, or in part, as psychotherapeutic training within national health care services, or institute planning of separate nation-wide psychotherapeutic training. The former alternative is supported in the report.

I do not, in fact, see these alternatives as mutually exclusive. The training arranged by certain associations and institutes with organizations of international standing behind them is traditionally of postgraduate level, and leads to a high degree of psychotherapeutic competence. The same applies, to a more limited extent, to certain other training courses now in existence. The existence and importance of this type of training and the competence it gives are not, in my opinion, in any way threatened by serious consideration and eventual implementation of the second alternative. The fact is that qualification as a psychotherapist capable of providing specialist services is, today, in practice, exceedingly long and complex. I do not want to minimize the importance of life experience and wide knowledge in psychotherapeutic work, but the fact remains that a specialist in psychiatry, for example, who has trained to become a competent psychotherapist will have expensed on average, almost 20 years upon training after leaving school. During this period, much time and energy will have had to be devoted to the absorption of information and the practice of knowledge and skills of kinds for which hardly any use will be found in his subsequent activity as a psychotherapist.

While I am well aware of the many obstacles to progress in this matter, not least of which will be the heterogeneity of existing psychotherapeutic frames of reference, I still believe it would be useful to study the possibility of trying to devise and implement training of psychotherapists at university level, with a length of basic training of 4–5 years. There should, additionally, be an op-
portunity for taking higher degrees and for various choices of direction of study.

The recommendation of the Psychotherapy Committee of the National Board of Health concerning support for the supervision of psychotherapeutic work should be particularly stressed. Irrespective of any future measures, supervision at present plays a central role in effectively increasing the psychotherapeutic nature of treatment relationships, even if only, to start with, principally in psychiatric treatment, but later, also, increasingly, in all other treatment relationships in health care.

I have, in the above, tried to put forward briefly some thoughts about the nature of psychotherapy, what is curative in psychotherapy and what are the current challenges for psychotherapy caused by the increasing holistic trends in medicine. Finally, I have tried to discuss how these challenges can appropriately be met within Finnish society.

REFERENCES:

The second Lapinlahti Lecture was given in 1980 by Veikko Tähkä. Judging by its volume, it was second largest by one page, as it was 13 printed pages in length. However, it included only six references, all of which were self-citations.

At the start, the lecturer referred to the Psychotherapy Committee, which had been appointed by the National Board of Health, and completed a report to clarify the need for psychotherapy and opportunities in Finland for the training of personnel qualified to deliver psychotherapeutic activities. This was a real déjà vu experience, as it rings a bell, does not it? In 2010, a reform was announced. Psychotherapist training would be provided only by universities with educational responsibilities in the field of psychology or medicine. The reform clarified the criteria for psychotherapy education and strengthened its scientific basis.

The lecturer continued to criticize “the opening of various hypnotism and group therapy centres by individuals without any real training and the necessary knowledge and experience”, and that “such entrepreneurs not only constitute a group harmful to the status of psychotherapy as a serious form of treatment, but are also a real danger to individuals accepting their offers of services”. This was a second déjà vu experience. After 10-year-long discussions, in 2018, the Ministry of Social Affairs and Health announced a start in preparing legislation on alternative treatments.

This may make us feel frustrated. But, in its essence this process reminds us and resembles the “riverrun, past Eve and Adam’s, from swerve of shore to bend of bay, brings us by a commodius vicus of recirculation back to Howth Castle and Environs. A way a lone a last a loved a long the”.

Timo Partonen, Editor-in-Chief
Article: CAN THE VICIOUS CIRCLE OF CHRONICITY AND INSTITUTIONALIZATION BE BROKEN?
Author: ERIK E. ANTTINEN
Year: 1983
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Can the vicious circle of chronicity and institutionalization be broken?

by Erik E. Anttinenu

The most difficult problem in psychiatry and psychiatric care is the marked tendency towards chronicity that is characteristic of mental illness. We are often faced with a situation where we cannot cure a patient's illness. Neither is it uncommon, I believe, for us to be unable to provide sufficiently versatile treatment or for our health care system not to allow for the implementation of appropriate treatment programmes. These problems are not only due to the gaps which exist in our knowledge of the causes of mental illnesses. Our understanding of the long-term course of these illnesses and the factors which determine it is in many ways inadequate. It is my opinion that some, at least, of these factors should be separated from the causative factors of the illness. The above problems are particularly important with respect to schizophrenia, even though they are typical of all long-term psychological illnesses.

Below, I shall attempt to examine the problems involved in the treatment and rehabilitation of persons whose fate it has been to live with a long-term schizophrenic syndrome. My present views on the subject are largely based on the results of the Sopimusvuori rehabilitation programme, on the gradual accumulation of practical experience over the past two decades or so, and on the observations obtained from the studies carried out during that time. I shall also attempt to describe the development of the Sopimusvuori programme and to examine how it functions.

Before tackling the subject itself, however, I would like to quote the definition of schizophrenia suggested a few years ago by the great clinician and researcher Manfred Bleuler — a definition which Ciompi, after scrupulous study of the lifelong course of schizophrenia, has re-formulated as follows (Ciompi 1981):

"Schizophrenia is a disturbance based on the one hand on congenital factors — e.g., hereditary, organic or biochemical — and on the other hand on a cluster of psychological and social factors. Occurring in various combinations and magnitudes, these factors result in the development of a vulnerable and disturbance-prone personality. This, in turn, leads the person to react to psychological stress with an undue amount of tension and anxiety: his thoughts become disordered, he loses his grip on reality and sometimes becomes overwhelmed by actual paranoid delusions and hallucinations. After one or several psychotic phases and depending on the degree of personality disturbance and, it seems, on the psychosocial environmental factors in particular, the course of the illness may vary highly. It may be cured completely, it may manifest itself either occasionally or continuously as symptoms of varying severity, and it may lead to severe chronic states."
This definition seems to correspond almost word-for-word to the one which Finnish psychiatry, under the influence of Martti Kaila, began to adopt as early as the 1950's. Schizophrenia is clearly the result of a variety of factors, and it may progress in different directions depending on the interplay between these factors. I want to emphasize the significance of the so-called "vicious circle mechanisms" in the unfavourable development which results in chronicity. Even in the formative and initial stages of the illness, it seems that this vicious circle is accelerated by a number of long-term difficulties and other painful factors. Problems in interpersonal relationships and restricted functional capacity at home, at work or in other social frameworks are particularly prominent. Our research on the home care of schizophrenics (carried out in the Mental Care District of Northern Hame during the 1960's) and the surveys on the rehabilitation potential of all hospital patients in the district have also led us to adopt this view. I will briefly describe some aspects of the findings.

The rehabilitation prognosis of hospital patients

On the day of the patient census (April 15, 1967), the District Central Psychiatric Hospital and the three other psychiatric (chronic) hospitals housed a total of 1,491 patients, 827 of whom were diagnosed as schizophrenic. In addition to chronicity and institutionalization, the most conspicuous problems of this group were loneliness, homelessness, the lack of the opportunity to engage in useful activities outside the hospital, and poor social and emotional capacity. These problems are reflected in the following figures; the duration of the latest hospitalization was longer than two years in 79 per cent and longer than five years in 66 per cent of the patients. The average length of hospitalization was 14.2 years. Only 11 per cent of the patients had a spouse, and less than 30 per cent had any noteworthy family support. Only 10 per cent of the patients had a chance of finding a place to live or a job (including the possibility of working at home). It is clear that these problems are linked not only with the illness itself but also with each other. This kind of vicious circle seems to be associated with the attitudes of society in general and of hospital staff in particular. As I see it, we have acquired both direct and indirect evidence of this. It is worth mentioning that we have since carried out similar one-day surveys of all hospital patients on several occasions, the latest being in 1979. The results have been similar to those described above. Even though the resources of the out-patient care in Mental Health Centres of the district and of the Sopimusvuouri programme (which started in 1970 and which will be described in detail below) have increased considerably in the twelve years between 1967 and 1979, the problem of institutionalization has been only slightly alleviated. The problem of loneliness — as measured by the number of patients who are married or otherwise co-habiting — seems to have increased among schizophrenics. In the latest survey, this number had fallen to only 4.3 per cent of all patients, and divorces were of found to have increased among schizophrenics as well as in society as a whole.

A study of home care based on home visits

In the 1960's — at the time of the first hospital patient surveys described above — we started a programme of investigative home care with comparative controls
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(1983:82-97)

The aim of the two-year programme, which covered 100 consecutive schizophrenic patients discharged from the Central Psychiatric Hospital, was to investigate the suitability of rehabilitation in exceptionally intensive out-patient care based on frequent home visits. The programme was also intended to show that it was possible to reduce the typical tendency towards chronicity and institutionalization. In our opinion, the results were promising and showed, among other things, that:

- The creation of a new out-patient stage between hospital and mental health centres helped make individual care a more rewarding experience for the patient.
- It was possible to significantly reduce the home care patients' need for hospital treatment.
- The patients' capacity for coping with sheltered work or other similar activity was greatly increased.
- In the great majority of cases it was possible to improve the patients' mental state of health.
- By means of repeated home visits and consultations it was possible to provide support, guidance and treatment to the patient and his/her family or key persons, which tended to make life easier for a number of other people as well. This, in turn, seemed to have a favourable effect on the patient's rehabilitation prospects, since the family atmosphere usually became more therapeutic.

It was, however, noted during the study period that life, and in particular domestic problems, for about 30 per cent of the home care group was such that placement in a half-way house from which the patient could visit a day-care centre or sheltered workshop seemed the best alternative. These arrangements were not available at the time of the study. In most cases, a decision to adopt this course would have been based on loneliness, conflicts in the relationships between family members or the difficult situation of children and teenagers living in an atmosphere of severe illness. More steps were needed in the outpatient care and rehabilitation system, and so the appropriate action was taken.

The first rehabilitation home experiment connected with the home care study started in 1966 in a rented house near the Central Psychiatric Hospital in the town of Nokia. It was agreed with the borough of Nokia to admit to the experiment six women with clear diagnoses of schizophrenia whose latest continuous hospitalization had lasted from 10 to 28 years. Their links with society were either completely broken or had been highly tenuous for a long time. In some cases, the patient's belongings had been auctioned off by his or her home borough, since it was not believed that the patient would ever be able to live outside a hospital. The money which had been deposited in the patient's bank account now proved useful. The rehabilitation home experiment lasted 2.5 years, after which time it had to be terminated due to the death of the owner of the house and the subsequent termination of the lease. Nevertheless, the project was successful in establishing a new step in our out-patient care system which was intensively supported by the home care programme. The experiment showed that, even after long-term hospitalization, people suffering from severe schizophrenia and who have become trapped in the vicious circle of institutionalization still have remarkable potential for recovery. In the beginning, everything was difficult, the tendency towards isolation, mental impotence and passivity, emotional rigidity, insecurity and even negativity were prominent among the clients of the house. The home nurse had to visit them several times a day to encourage them, guide them into
collective activities and various household chores and assist them in attending to their affairs outside the house. The clients were also encouraged to produce handicrafts for sale. Within 5 or 6 months, as the clients' self-esteem, independence and capacities improved, the atmosphere in the house improved, becoming more active and healthy. When the experiment had to be discontinued in 1969, the only possibility was to offer the clients another hospital placement. They did not want to accept this alternative, and all of them moved into independently acquired flats in the towns of Nokia and Tampere. The 1973 follow-up survey showed that one of the clients had died of a somatic illness and one had sought temporary hospital treatment. All five were quite active socially, and capable of supplementing their pensions by selling handicrafts. In terms of their appearance and behaviour, all the clients were now quite different from the time when they left hospital and moved into the rehabilitation home. They still displayed some symptoms of the illness, but the degree of social recovery was high.

Summary of the background studies and experiments

We feel that the survey on the rehabilitation potential of hospital patients, the home care study and the half-way house experiment provided some clear guidelines for planning the care and rehabilitation of long-term schizophrenic patients and particularly for breaking the vicious circle of institutionalization.

These guidelines may be summarized as follows:
1. The patient must be guided away from loneliness into a small network of functioning relationships.
2. However chronically schizophrenic the person may be considered, his or her independence must be respected, he or she must be treated as a person, the development of his or her self-esteem should be encouraged — in other words, the patient should be able to experience life as a human being.
3. In sheltered circumstances, a long-term schizophrenic is almost always — even though sometimes very slowly — capable of achieving considerable technical skill in work and other activities. In unsheltered circumstances, the utilization of these skills is adversely influenced by social and emotional obstacles associated with both the illness itself and the attitudes of the environment.
4. The above findings present a strong challenge to rehabilitation programmes: psychotherapeutic and collective forms of treatment must always be combined with the acquisition of technical skills in order to develop a creative attitude and the ability to cope with the problems of life.

When the home care study and half-way house experiment ended in 1969, the above conclusions were already evident in a more rudimentary form. They were sufficient, however, to encourage us to put into action our plans for a more active and integrated social psychiatric rehabilitation programme in our district. They also strengthened our determination to implement the idea of the therapeutic community as the elusive instrument of the programme. Some of the main aspects of the founding of the Sopimusvuori Society in 1970 are described below.

As the Mental Health Act in force at that time left the required forms of operation outside the public subsidy system, the only route open to us was to found a society. The fact that the present managing director of the Sopimusvuori programme took part in the initial studies and experiments proved decisive for
the new venture. Her courage and inventiveness helped overcome the difficulties that arose and attracted a number of enthusiastic people of various professions to the cause. The society started from humble beginnings, but grew steadily. Collaboration between the Society and the Mental Care District was close, and both parties felt that it was an important addition to statutory mental health work.

Development of the Sopimuskuisuori programme into an integrated rehabilitation system

In the spring of 1970, before the Society had officially been founded, its first rehabilitation home had already started operating in a desolate building formerly used as an old people's home. The building was located in Tampere on the side of a hill called Sopimuskuisuori ("Convention Hill") — an ancient meeting place. When the Society was founded on May 4, 1970, it was natural to name it after this historic site, as the very ideology of the venture was based on the democratic practice of agreement. Even though the principle of the therapeutic community had not yet been made explicit because it was considered too demanding, this principle set the basic guidelines for the work. The aim of the Society was stated in §2 of the rules approved by the founding meeting as follows: "The aim of the Society is to support persons returning into society from psychiatric institutions and, together with recovering out-patients, to attempt to increase their psychological, physical and social capabilities. In order to achieve these goals, the Society will engage in social psychiatric work." The director and co-founder, employed by the old people's home, became employees of the Society and were now the staff of the newly-established Vaakonkatu Rehabilitation Home which accommodated 21 clients. They had no medical training whatsoever, but their enthusiasm and empathy were more than adequate compensation. The staff was guided and supported by the managing director and a teacher of psychiatric nursing who was a founder member of the Society and who later became an essential part of its operations. The programme thus got off to a good start.

Financial problems were resolved by having the clients pay an agreed monthly sum for their room and board. The City of Tampere started to co-operate by paying a daily subsidy for each client resident in Tampere, and soon all boroughs of the Mental Care District of North Häme followed this example. The Society's funds were also augmented by parishes and the Supporting Committee founded within the Society. This made it possible to continue and develop the programme.

During its first year of operation, the Society started a second house — a supported residence for seven clients — which served as a further step towards normal life. In the years that followed, the total capacity of the various establishments run by the Society increased rapidly. This increase has been determined flexibly by the supply of clients from the psychiatric hospitals of the district and by the need for special forms of rehabilitation. Of course, the accommodation available to the Society at different times has also influenced the programme.

At the moment, Sopimuskuisuori maintains a total of 228 places. Their internal division during the past 12 years has varied depending on the needs of the district and the results obtained with different forms of operation. It has proved expedient to integrate the programme into public hospitals and outpatient units as well as other public rehabilitation programmes, and thus to create a stepwise system in which a client may progress according to his or her potential for recovery. The
system adopted its present form in 1976. Six rehabilitation homes in Tampere and Nokia provide a total of 77 places, while there are 20 places in so-called small homes, 29 places in supported hostels and residences, 30 places in day-care centres, 60 places in a therapeutic workshop and 12 places in so-called preventive rehabilitation homes dealing with special cases.

The illustration shows how the Sopimusvuori programme is organized with regard to the clients' accommodation, activities, rehabilitation and life in general. It operates in close collaboration with the hospital and out-patient units of the Mental Care District from which most of its clients originate. More recently, the stepwise structure of the programme has become even smoother, more inclusive, flexible and less bureaucratic, more encouraging and more tolerant of set-backs; its aim has been to maintain both an individual and a community-oriented approach. It is our impression that all these qualities are necessary for a successful integrated rehabilitation programme.

Financial co-operation with the clients' home boroughs has been smooth. Subsidies from the boroughs have in the past few years accounted for 43 per cent of the programme's total budget. The clients themselves have contributed 47 per cent through their pensions and social security benefits. The remainder has been covered by the profits from the workshop, public funds (from the receipts of Government-controlled gambling machines) and donations.

The ideology of the Sopimusvuori programme

As already mentioned several times, the Sopimusvuori programme is based on the principles of the therapeutic community. This implies that there are no patients: persons in need of help and support are the Society's clients and, when they so wish, its fully fledged members. The programme is based on community and group activity which involves both clients and staff and is, as far as possible, based on equality.

Decisions are collective, and all everyday activities and tasks necessary for the recovery process are dealt with collectively. Over the months and perhaps even years, the group of people will become a therapeutic community capable of supporting and encouraging the healthy resources of its members and reducing the occurrence of pathological behaviour.

This creates the most favourable circumstances for the development of collective responsibility as well as one's responsibility for oneself and others. The strengthening of the self-concept, the clarification of interpersonal relationships and organized activity and work play a crucial part in the revitalization of the clients' emotional life, the development of social skills and the integration of their psychological world. The result is progress towards health. People from outside the community, such as visiting therapists, tutors and the "ordinary" people who take part in the extensive "friend network" of the Society provide encouragement and greater opportunity for interaction. This was our assumption when the work started, and we still believe that this kind of development is possible. We do not deny that there may be a degree of idealization involved in the ideology described above, but, as Utopian thinking may well be a necessary ingredient in all new ventures, we regard it as permissible.

The staff of Sopimusvuori is small: for the 228 places there are only 26 members of staff, including administrative and office personnel. Half of them have a basic health care training. All take part in regular counselling sessions and
have the opportunity to take part in relevant courses and lectures. As benefits our basic ideology, the numbers of staff are discussed and settled by the members of each community. It is our contention that this procedure emphasizes the collective responsibility of communities, and all members — not only staff — have to work towards the agreed objectives. Members of staff are needed as catalysts, stimulators and guides and, above all, as fellow human beings who represent empathy and reality. As everything is done collectively, according to the division of work typical of a family, no kitchen or cleaning staff are needed. The client-members of the community are responsible for running the unit in the evenings, at night and on weekends as well as while members of staff are on vacation. We consider all these principles useful for rehabilitation. They are based on mutual trust and the acceptance of every member of the community.

All matters affecting the life of the community are discussed and decided in group meetings. It is worth noting that this also applies to a significant proportion of the running costs of the community. The budget of each unit is planned by its members, and the unit also allocates funds for food, cleaning and so on.

Recreational activities are also discussed and planned collectively as far as possible. Thus the Society has given the therapeutic communities a great deal of responsibility for their own affairs. We consider this very important. Even though it is true that those members of the community who are in poor health are less capable of taking part in decision-making than their healthier fellows, they are still given an opportunity to do so. This is also an aspect of trust and esteem.

The clients are expected to conform to collectively agreed systematic work programmes, and all creative work and handicrafts are encouraged. These play a part in providing greater opportunity for self-expression for the community and its members. Each unit, including the workshop, seeks to combine therapeutic, interactive activities and the acquisition of the technical skills necessary for working.

Of course, these aims are not always realized by all clients, but it is our impression that most of the clients make some progress. The results of the programme will be described briefly below.

Results of the Sopimusvuori programme

Since 1972, the Sopimusvuori programme has been the subject of many studies of therapeutic communities, the research group led by Assistant Professor Markku Ojanen warranting special mention. The findings of these studies have been used as feedback in the planning and development of the programme and in the professional guidance of staff. Particular emphasis has been given to observations on the changes in the atmosphere of the different communities and on how the indications characteristic of a therapeutic community have been achieved. Changes in the clients' social skills and their success after leaving the programme have also been monitored, as have the opinions of clients and staff on the advantages and problems of the programme. Research has concentrated particularly on the rehabilitation homes, the day-care centre and the workshop. The research project is supported by the Finnish Academy and the National Board of Health.

As the rehabilitation home system is the essential part of the Society's attempts...
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...to break the circle of institutionalization, I will briefly evaluate its functioning. Supported hostels and residences, independent homes, day care centres and workshops represent the first out-patient stages for people who are not severely institutionalized. Clients who come to rehabilitation home direct from hospital are generally in the poorest health. Fifty-two per cent of this group have been in hospital for 10 years or longer, and 65 per cent for longer than 5 years. Nearly all of them are pensioned, and their social and emotional capabilities are highly inadequate. Progress is therefore particularly important in this group.

The most tangible results are probably found in the statistics on the placement of the clients of rehabilitation homes either within or without the system. It has proved possible for people who have been in hospital for lengthy periods — even 30 or 40 years — to manage in independent accommodation. Follow-up studies of a sample of rehabilitation home clients (N = 201) over several years show that over half (3/5) have either found supported accommodation, moved back to live with their parents or found rented or self-owned homes. The follow-up study shows that this group of clients have done quite well, even in their own opinion. Only nine percent of them have had to seek hospital treatment, and another nine percent have returned to Sopimusvuori — back to a rehabilitation home, for example. For about one fifth of the clients, the rehabilitation home seems to remain the highest stage of recovery. Only one fifth of the clients of rehabilitation home have had to return to hospital, probably to stay. Their symptoms have remained grave, and no motivation for rehabilitation has developed. It may be worth mentioning that more than 20 or the 500-plus rehabilitation home clients until now have bought small homes of their own. Considering that there was a time when hospitalization seemed the only possible alternative for these clients, this result — and subsequent placements in general — must be regarded as quite good. It is also significant that each year a few clients have been able to give up their pension after finding a regular job. Not all clients, however, have managed to maintain the capacity for work which they have achieved.

On the other hand, it must be said that in the case of a long-term hospital patient any improvements are often quite slow. It generally takes a year, and often several years, before any tangible changes become evident. This is our impression, even though it is generally acknowledged that there are serious methodological problems in studies of such changes. This requires a great deal of long-term thinking on the part of psychiatric rehabilitation programmes. This point has been emphasized by, among others, Wing (1976, 1978), Ciompi and Müller (1976) and Huber, Gross and Schütter (1979). According to Jokinen’s data for our first 201 rehabilitation home clients it seemed that the need for hospital treatment fell by half after one year and almost disappeared after three year’s stay in a rehabilitation home.

According to the preliminary findings of Anttinen and Jokinen (1982), there are significant differences in the quality of life between clients who have stayed in a rehabilitation home en route from hospital to independent life and similar patients who have returned home directly after discharge. The former are more active, more independent and more participatory than the latter. Another interesting result is that both the overall death rate and suicide rate are lower among the Sopimusvuori clients than among the control group. Because of some problems in the sampling of the control group, however, these findings should for the moment be regarded with caution.

Follow-up studies carried out at various times show that our rehabilitation home programme, the workshops and day-care centres yield the best results for
middle-aged and older persons with a long history of illness. It has also been found that women have more recovery potential, which is activated by our programme, than men. This finding is supported by the aforementioned British, Swiss and German results based on different types of study.

The programme has been least effective in the case of young single men, particularly those whose stay in hospital has been short and whose illness has been in its formative stage. On the basis of our follow-up studies, we agree with the suggestion that the symptoms of the schizophrenic syndrome may diminish as the person gets older. This has been pointed out by Bleuler, and Ciompí and Müller (1976) who showed in their monograph that there is a positive correlation between aging and alleviation of psychiatric symptoms. We would like to emphasize that, as we have apparently been able to show empirically, progressively more recovery potential is released in schizophrenics as middle age approaches. This is the age when a certain reorientation begins towards one's own psycho-physiological self as well as towards one's interpersonal relationships. It may be said that old intrapsychic conflicts assume a new position as instincts and needs change. It is our opinion that this "visitation period" of treatment and rehabilitation should be put to good use, especially in the case of middle-aged and older hospital patients and out-patients. The first period of visitation is, of course, the early part of treatment, which should be made more effective by all possible means.

Membership in a small community and participation in its activities are very important for patients. According to comparative evaluations, the atmosphere of therapeutic communities is significantly different from that of psychiatric hospital wards. The former are perceived as more interactive, functional, stimulating and democratic, though also more demanding. Follow-up studies and experiences of the staff show that the development of a community includes many problematic stages. Entering a community is not always easy for an institutionalized hospital patient, and the first two or three months are critical. In the course of the evolution of a community, problems are created by the group dynamics and the illness itself, but changes in the small staff, the departure of important client-members and new arrivals may also cause crises. The management of crises, however, is also part of the maturation process, a process which also leads to the maturation of individual participants and is therefore beneficial for recovery.

The repeated evaluations of communities by both clients and staff show that they are different in various respects and that they develop in different directions. This has been interpreted in terms of differences in the clients' aims and needs and differences between clients and staff as human beings. We do not want to set any narrow limits to the development of communities. We have also drawn a parallel between communities and families which take into account the differences between family members without any one-directional rules.

Our studies cannot provide an unequivocal answer to the question of why these communities have been able to help our clients to the extent described above. It is, however, possible to set hypotheses, the testing of which is one of the tasks of further studies. Of course, the emergence of the "institutionalization syndrome" is first and foremost connected with the duration of the patient's stay in hospital. The often rigid regulations, limitations and authoritativeness typical of a hospital ward as well as the asylum-oriented attitudes of staff and society in general tend to increase the danger of institutionalization. The long-term patient begins to assume characteristics which Ludwig (1971) has described poignantly in his "code of chronicity". A chronically hospitalized person supplements his or
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her self-image with many new characteristics in order to feel at home in the ward. Dullness, harmlessness and unconspicuousness are characteristics typically associated with a model patient, while strange behaviour and aggressiveness are thought to indicate the need for attention. Evasion of responsibility, minimization of stress, ignorance of others, a black-and-white mode of reacting, the right to unpredictable behaviour and to a kind of diplomatic inviolability are also part of this code.

As community treatment is aimed at freeing the clients from most of these qualities, it is vital that members of staff do not themselves become institutionalized and stagaant, lose their optimism, retreat into bureaucracy or seek refuge in authoritativeness.

It is our impression that in a small community the mobility of the thoughts, emotions and actions associated with the community's internal interactive processes may, to paraphrase Edelson (1970), unlock rigid, ossified patterns of disturbance and prevent new assifications. The collectively agreed models, norms and programmes strengthen the clients' internal control. The group supports, feels and responds to feelings and is thus at its best deeply humane; the resulting air of safety provides help. Experiencing human equality strengthens one's self-esteem, as does responsibility for the outcome of individual and collective actions. Greater self-esteem is fundamental for all psychological recovery.

A group is akin to a family within which it is possible to work one's way through painful matters in a controlled manner and, on a more adult level, to obtain corrective experiences and support for maturation. One learns to manage one's own problems, listen to others, defend oneself, trust others and to experience acceptance as well as confrontation. This learning process gives the patient more room to move psychologically. The group members' different objects of identification point the way back to reality and to an effort to develop oneself. It seems that the communities have also shown how the relaxation of interactive tensions between members may often ease tension and anxiety in an individual.

The kind of collective and individual development described above only becomes evident when individual clients are followed up for several years. According to the diagnostic criteria currently in use, they may still be chronically ill. Their level of integration and socialization, however, is completely different from what it was during their long hospitalization, which in some cases may have lasted several decades. Perhaps the most crucial aspect of the change that has taken place is to do with strengthened self-esteem and the increased need for independence and self-sufficiency.

This means that the vicious circle of institutionalization, at least, has been broken; its symptoms begin to disappear and a kind of a "good circle" emerges. It is our contention that the Sopimusvuori experiment has managed to illustrate this in practice. We have, although cautiously, also reached the conclusion that the programme has had a beneficial effect on the process of chronicity by way of breaking the vicious circle which I have also attempted to portray on a more hypothetical level above. Our answer to the question posed in the title is therefore in the affirmative.

REFERENCES

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The third Lapinlahti Lecture was given in 1982 by Erik E. Anttinen. It was the first one to not only present a question immediately in its title, but also to give the answer in the end. [Warning! The following sentence contains disclosures to the whole plot and uncovers the answer!] The answer was “in the affirmative”.

It is not surprising that the topic was schizophrenia once again, as if Finnish psychiatry was at its best, most interested in and focused on schizophrenia, leaving other disorders aside. The lecture was based on the results of the Sopimusvuori rehabilitation programme. Founded in Tampere in 1970, it was the first mental health rehabilitation association in Finland which followed the principals of a therapeutic community. It is still currently working today.

The lecturer mentioned Manfred Bleuler as a great clinician and researcher and quoted the definition of schizophrenia suggested by him a few years earlier. Finnish psychiatry, under the influence of Martti Kaila, had begun to adopt this definition almost word for word as early as in the 1950s. The vicious circle mechanisms, which were accelerated by problems in interpersonal relationships and restricted functional capacity in important areas of functioning in everyday life, were emphasized as a key to the chronic course. Therefore, breaking this vicious circle of institutionalization was seen as the target, and this change was thought thereafter to permit a kind of a good circle to emerge.

We have witnessed a number of reforms in psychiatry as part of the healthcare system. A change is permanent, and a rolling stone gathers no moss, etc. But, it is a reality, not any parallel universe, that the revolving door of psychiatric care is still today going round like a wheel of fortune.

_Timo Partonen, Editor-in-Chief_
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THE INCOMPREHENSIBLE FINAL DESTRUCTION

by Eero Rechardt

The Lapinlahti Hospital, highly esteemed and rich in tradition, and today known as the Helsinki University Psychiatric Clinic, is once more celebrating its anniversary. I am deeply pleased to have the honour of delivering the fifth Lapinlahti address on this occasion. My sincere thanks go to the Director of the Clinic, Professor Achté, and his personnel.

These walls have stood witness for some hundred and fifty years to demonstrations and case reports of psychiatric patients brought to the attention of generations of medical students. It is my intention now to carry on that tradition, and to present to you a sort of case history. When a psychiatric case history is drawn up with due skill and care it often touches a responding chord in the listener; 'something there could just as well apply to me'. In this case history we are all equally taking the role of the patient who vainly tries to get a grip of the almost overwhelming chaos in his mind. This is a report of man's effort to continue his life in the thermonuclear age, and to strive to get under control the unfathomable power threatening with total and ultimate chaos.

There is in our minds an incomprehensible black hole associated with nuclear destruction which we share as a mutual vision.

The book «Counsels of War» by Gregg Herken (1) on the history of nuclear strategy in the United States is an exceptionally illuminating document of how ineffectual the efforts of even top experts have been to create strategically functioning and politically reasonable uses for nuclear arms technology.

THE DOCTRINES OF NUCLEAR ARMS STRATEGY

First the bomb was built, and after that it had to be decided how to live with it. Soon after the atomic bomb had been dropped on Hiroshima and Nagasaki, a book was published in the United States opening the discussion on nuclear strategy (2). The thoughts expressed in this book indicate that because of their massive and irrational destructive power nuclear arms render all purposeful military strategy impossible. Lasting peace will therefore be inevitable. About the

My special thanks are due to my colleagues in the Finnish group of «Psychoanalysts Against Nuclear War» which belongs to the IPANW. These thoughts are essentially based on discussions in that group.
same time, another book (3) was also published with radically different conclusions proving that the USA must immediately embark on preparations for nuclear war in the nearest future to make sure of maintaining superiority. Atomic weapons strategy became a subject for study in a number of concurrent research institutes especially founded for the purpose by different military services, and by some private enterprises and universities. In the main, the plans that have evolved from these studies have circled round four different strategic doctrines.

1. Doctrine of Balance of Terror. According to this doctrine nuclear war has no strategically rational goals. If it should break out it would be final Armageddon. Strategists are therefore left to prevent both supremacy and inferiority of nuclear power so that neither side could possibly use the advantage of first strike.

2. Doctrine of Limited Nuclear War. Gradual escalation plans must be made in anticipation of nuclear war. Escalation of war in these plans grows by degrees and the war may be protracted even for the length of years until one side or the other surrenders in face of total destruction.

3. Doctrine of Effective Defence. The first two doctrines appeared right after World War II. Instituting effective nuclear defence in place of effective nuclear attack was first suggested on the political forum by Kosygin at the start of the 1960s.

4. Doctrine of Disarmament Step-by-step. Disarmament and dismantling of nuclear weapons are the remotest and the least discussed issues of strategic planning. Mutual distrust leaves little room for it, or there is absolutely no inclination to surrender the political and military superiority rendered by nuclear arms.

**DOCTRINE OF BALANCE OF TERROR**

Shortly after World War II the idea of balance of terror was hailed as a blessing. For the first time in the history of mankind wars become impossible since no strategically reasonable purpose could be achieved by nuclear destruction nor could there be a winner in nuclear war. The nuclear weapon could thus be used as a guarantee of peace. At the beginning when the United States was in sole possession of the atomic weapon, the military-political relations were more or less based on the dictatorship of terror. Maintaining the balance of terror became practical politics gradually alongside the development of their own atomic explosive by the Soviet Union, and their further construction of the hydrogen bomb. Balance of terror is constantly under suspicion. Uneasily it is feared to be only a sham, and the opponent is actually suspected of secretly acquiring superiority and the advantage of destructive first strike or that he already has possession of them. All the while, in the shade of the balance of terror nuclear weapons technology has progressed and the arms race has been going on. New generations of politicians and nuclear strategists are experiencing life in the balance of terror intolerable. It is a state of existence that cannot continue. Balance of terror, the agreement with the Soviet Union on mutual assured destruction (MAD) is morally obscene. It is intolerable that the administration has left the citizens hostages of the enemy ~ that's real MADness. Plans for a limited, victorious nuclear war, the possibility of a deterrent first strike, and superiority of technological nuclear arms are alluring topics that arise time and again to tempt the minds of politicians and strategic theorists.
DOCTRINE OF LIMITED NUCLEAR WAR

The doctrine of limited nuclear war and the possibility of achieving a victorious end emerged about the same time as the strategic doctrine of balance of terror. According to it the United States must embark on preparations for the nuclear arms race with utmost speed so as to secure absolute nuclear superiority. Nuclear war will be a blitzkrieg between rocket bases which calls for the assurance of maintaining the technological and quantitative superiority necessitated by first strike. This is meant to force the opponent to surrender in order to save his own country and population from total destruction.

When McNamara became Secretary of Defense he was introduced to the triad strategy of nuclear war by the military high command. Target points were pinpointed on illuminated panels, estimated casualties and amounts of radioactive fallout were specified numerically. In the first phase light point appeared in a number of the greater Soviet population centres. The second phase brought out point all over the Soviet Union by the tenfolds. And, finally the third phase had hundreds of target points covering the whole map. The number of casualties in the Soviet Union and surrounding countries was estimated as 350 millions. Fatal nuclear fallout spread over neutral and friendly countries. McNamara later said he was shocked. Do the U.S. political leaders have no alternatives for war other than capitulation or bringing about the end of the world? In order to find room for alternative approaches McNamara gave orders to investigate the feasibility of creating a gradational nuclear strategy which would be limited and not lead to total destruction. This brought to the forefront the nuclear strategists who had lobbied for more precise doses of nuclear strikes, for the possibility to wage nuclear war that can be prolonged, and that could avoid culmination in the final Armageddon. But this would mean a threat to the balance of terror. In its place an idea began to gain ground of nuclear war to be fought in reality, a war which could be held in rein, and which would involve achieving and securing technological and material superiority. The politicians and nuclear strategy researchers who held the view that there was only one kind of nuclear war, the insane end of the world, found it increasingly more difficult to make themselves heard.

After McNamara’s departure from office, it was Kissinger’s turn to acquaint himself with the nuclear weapons strategy created by his predecessor. He telephoned McNamara directly asking him how he could have been secretary of defense for seven years, and left behind such a flawed plan? McNamara readily conceded that the war plan was inappropriate, but that there were extenuating circumstances as it seemed extremely unlikely that the plan would ever be utilized. Kissinger laboured eight subsequent years on the same project, and privately conceded to McNamara that he, too, had finally been unable to make any sense out of nuclear strategy. The horrifying end-of-the-world plan introduced to McNamara had at least some reason in that it was irrefutable reminder of the true nature of nuclear weapons, of their absolute uselessness in any kind of warfare. All the other kinds of strategies open a view to traditional warfare; they revive the fantasies of waging war to politicians, soldiers and laymen alike in a manner that sets the mind at ease. As if 100 million own casualties against 250 million of the opponent were a military victory. Very often the talks of nuclear strategists are manic and strangely inconsistent. For the sake of simplicity a million bodies is a megabody. The destruction caused by limited nuclear war is diluted with inspiring
stories of survival of ingenious farmers in the wild west who build personal fallout shelters with a spade and plastic sheets at the distance of a mile from the epicenter of the explosion. There is no end to the enthusiasm evoked by nuclear weapons superiority. The advantage of a first strike must be kept at all cost – political cunning will do. Powerful, lightweight nuclear weapons must be designed for transportation behind enemy lines. The nuclear strategist seems to be heading dangerously for the mental state of psychopathology which could be termed nuclear mania.

DOCTRINE OF EFFECTIVE NUCLEAR DEFENCE

In 1962 when the leading politicians of the Soviet Union and the United States were discussing nuclear arms for the first time, Kosygin told the Conference that the Soviet Union will start to invest in defensive rather than offensive arms, and that a defensive system around Moscow was already under construction. The US negotiators said that in their view the Soviet Union is aiming at the advantage of first strike by crippling US weapons, and that this compels the United States to develop their offensive arms in order to maintain the balance. The outcome of the Soviet defense plan would be the further doubtful escalation of nuclear technology. An agreement was reached ensuring both mutual assured destruction (MAD) and the balance of terror by abandoning defensive measures. Nonetheless, the threat of surprise attack by first strike keeps haunting the minds of nuclear strategists. Experiments and calculations have shown that a first strike aimed at missile silos can paralyze the greater part of the nuclear weapons of the United States, and that attack is always more effective than defense. The strategic planners of limited nuclear war began to demand the fortification of missile silos to withstand a close hit and defensive missiles to protect them. They suspected that the Soviet Union in any case would take such steps, and would clandestinely gain the readiness for first strike. The fantasy of such a threat demoralizes trust in any kind of political decisions. Their place is taken by fantasies of nuclear warfare for which sophisticated technology is necessary for protection. According to Reagan's pet idea the United States must develop a reliable space defense system to surpass offensive weapons. After this has been accomplished negotiations could be started about dismantling useless offensive weapons. Jastrow's (4) manic pamphlet gives an excited description of Reagan as the saviour whose plan will free the world of nuclear weapons. The greater majority of scientists sees the plan for space defense (Space War) as so much nonsense. As far as its ponderous weight and astronomical expense are concerned it is altogether impossible to carry out. There is no guarantee that its computer system would be reliable. With great complacency Jastrow neglects the impossible task of defending against cruising missiles fired from submarines and flying in very low altitudes.

DOCTRINE OF DISARMAMENT

In Khruschchev's time the Soviet Union absolutely declined to take up the question of nuclear disarmament. By and by it became evident that this was
political poker. The United States strategists and politicians calculated their budgets for defence against several hundreds of Soviet Union missiles. They were not informed about the satellite pictures, which revealed that the USSR had a total of four intercontinental missiles. At the present time the Soviet Union nuclear armament has already been for a considerable time equal to the American one. The greatest benefit of the SALT-negotiations was that they were the first concrete step taken toward disarmament. The failure of the negotiations to put a stop to increasing the numbers of nuclear weapons was due to the fact that plans to MIRV (multiple independently targetable reentry vehicles) then under way were overlooked. This new weapon with its multiple warheads enables the multiplication of total explosive power of a single missile. Instead of one missile destroying one Soviet missile in its silo, MIRV could destroy ten to fourteen Soviet ones depending on the number of its warheads. The stockpiles of nuclear weapons and their total explosive power have, in fact, increased in terrifying degree. Neither side has considered its position stable enough to continue disarmament negotiations in earnest. The jungle of suspicion, fear and fantasies has appeared to be impenetrable. In the name of security the stockpiles of nuclear weapons keep on growing. At this very moment they guarantee thousandfold doomsday and end-of-the-world.

THE BLIND ALLEY OF NUCLEAR STRATEGY

The nuclear arms strategist-political thinking has come full circle with no end nor outcome in sight. The old familiar ideas: the balance of terror, limited nuclear war, and enforced nuclear defence keep cropping up over and over again. Brodie, the expert nuclear strategist of the first generation who well could be regarded as the father of nuclear strategy spoke with disgust of the forever repeated new-old patterns of thinking.

Nuclear arms are increasing, the balance of terror is culminating toward inevitable explosion. It seems that first hand solution is essentially sought not from negotiations, politics, mutual activities between people and deeper understanding of self, but from messianic techniques. In the minds of the younger generation strategists there is a growing suspicion that something has been fundamentally wrong so far in strategic thinking. Herken who wrote the history of nuclear strategy in the USA says at the end of his book that the nuclear nations have become prisoners of shadows. These shadows are the images of an enemy lingering in their own souls.

LOOKING INTO THE ABYSS

Nietzsche, the supreme master of the aphorism, says:

«And if thou gaze long into an abyss,
the abyss will also gaze back into thee.»

When I look at the incomprehensible, at something that has no finished content whatsoever, I see there the primitive building material of my selfness, of me. The
conception of severe psychic disturbances has moved toward the view that there are in them psychically formless areas of chaos, either extensive or limited, that pose an intolerable threat to selfness. The great helplessness they cause is dealt with in various ways. Narcissistic pathology characteristically responds by constantly avoiding these areas with illusions of self-sufficiency, by trivializing one’s own feelings and those of others, and by fantasies of superiority. A person with borderline disturbance is less successful in avoidance, and more helpless than a narcissistic person when faced with threatening chaos. A psychotic person is at least part of the time totally at the mercy of chaos, and looks straight into the abyss. Nevertheless, even the most severely psychotic patient fills the chaos and the void of his mind with fragments of his selfness, with the most primary constructive parts of his own self. He might see in the abyss the horrifying Satan threatening him and all mankind with annihilation. What he is seeing is his own destructivity from which his selfness has begun to evolve while striving for omnipotence. He might see there the Messiah that omnipotent mother who comforted him in the helpless anxiety of his childhood. Those experiences were indispensable for the formation of his selfness. The world and its people are much too incomprehensible to a psychotic person. Instead of engaging in human relations, he knows nothing but helplessness, chaos and emptiness. In the void of the abyss he may see the omnipotent embryo of his selfness: everything around him, the whole world and its people are a part of his self, an extension to him, fully under his control. There, in the void of the abyss, in a horrible vision, the images to the mighty parents of his primal scene fantasies are perhaps fighting and deciding his fate (5). From the depths of the abyss his helpless self is looking back into his eyes, the self that believes only in merciless destructive superiority.

What has all this to do with the ordinary person? In what way are sane, highly intelligent experts of nuclear strategy connected with this? The connection is that every human being either briefly or for a length of time unavoidably comes face to face with the incomprehensible – to gaze into the abyss. Among such experiences are, for instance, strange and hitherto unknown circumstances, strangers, foreign cultures, unorganized groups or groups in search of outward forms, new life conditions, physical bodily changes, new stages of individual development (6). Under such circumstances each of us tends more or less to search for his or her selfness, my own self, in fantasies of superiority, in manic omnipotence, in the world of primal scene fantasies of our parents’ relationship. The necessity to destroy and the threat of being destroyed come to our mind, and we are susceptible to messianic messages. Perhaps we shall try to fill up the incomprehensible abyss with something very concrete, clearly defined and trivial. We may find there some familiar functions of our own body which aid us to grasp the incomprehensible. All of these are also the rudimentary forms of our thinking. The basic contents of physics, such as force and speed, have originally been bodily experiences that gradually have evolved into abstract mathematically formulated concepts. From that incomprehensible abyss a psychic world can also arise.

How do the abysses of the mind of an ordinary, down-to-earth, sane person differ from psychotic illness? They do not present themselves in vast and horrifying form, nor do they pose a threat to the functioning self, but are clearly defined and easily avoided. They lead to a sort of everyday narcissism, to the shortsightedness, narrow-mindedness and prejudice of the ordinary person.
There are in nuclear strategic thinking several features that bring to mind a narcissistic personality with borderline-level disturbance. They tell the psychoanalyst that psychic work has reached but little clarification and is badly incomplete. There is evidence of stubbornly striving for absolute superiority and, at the same time, fear that someone else already has that absolute superiority in his possession. Nothing but absolute crushing supremacy can bring results to my actions. The world of nuclear strategists is ruled by satans and messiahs, the satanic technology of the other and my messianic technology. The inconceivable destructive effects of the bomb are put in overly concrete numerical terms. The destructive power of the H-bomb is conceived of as POWER on my side, allied with me and giving me the manic feeling that I represent the GOOD and the RIGHT in everything I think and do. These mutually contradictory contents of the mind manifest themselves simultaneously and concurrently as they do in the mind of narcissistically disturbed person.

A great many nuclear strategists are well aware that it is their job to look unremittingly into the abyss of incomprehensibility. There are no former solutions nor cultural traditions acquired thus far that could supply the tools needed to continue to live in the H-bomb age. Herman Kahn, one of the most well-known nuclear strategists, gave his book the title Thinking about the Unthinkable (7). It has been my intention by these short illustrations of nuclear scientists to bring to light the fact that they are still looking down into Nietzsche’s abyss, into that same abyss down which people in psychic distress as well as sane people hitherto have always looked. But from the ABYSS OF THE HYDROGEN BOMB NOTHING AT ALL LOOKS BACK. The most incomprehensible of all is the non-existence of selflessness, the annihilation of self.

THE INCOMPREHENSIBILITY OF THE NON-EXISTENCE OF SELFNESS

The H-bomb (also called the Super) has started a completely new era and civilization, the civilization of non-being. In creating the nuclear weapon which extinguishes the possibility of the realization of every selfness, of every single I, man has created a situation which to grasp and to actively deal with we lack the tools. We have no means to grasp a state of existence from which all the dimensions and products of selfness, of our own selves, have vanished. In the world of our mind the forms of selfness, of me, continue to exist even after self is no more. Destruction, annihilation in which all that is related to selfness, to me, has been nullified is unthinkable. In all our fantasies of nuclear extinction we yet leave some part of our selves to act. For this reason every description of nuclear destruction is at fault: we are the audience in a horrifying play, but as onlookers still part of it. The obstacle blocking our way to comprehend nuclear catastrophe is that we have no tools to grasp its meaning. The totality of non-existent selfness, of no me, does not belong as a possibility in the sphere of psychic work. We strive to change the issue of nuclear weapons into something that is possible to define and to act upon; a limited war; a great war but not the final catastrophe; a problem of survival; a struggle between good and bad; or a technological challenge. It may well be that for the present, at this stage of civilization, only the balance of tangible terror can succeed to remind us of the presence of relentless reality.
We cannot understand a void from which not even the thinnest fragments of selflessness, of me, do not return our gaze. We cannot comprehend that the H-bomb's destructive power is not a familiar one to us. We cannot grasp the fact that the destructive power of nuclear weapons could not be utilized to strengthen selflessness, the I, as destruction and destructive weapons hitherto have been used. We do not have the ability to grasp nuclear weapons in any other sense than as a means of accomplishing something. It is possible for us to act by using nuclear weapons to destroy, to annihilate mankind. It is also possible for us to play dangerous games with them but the ball can't be kept rolling because it explodes in the end. We do not have the capacity just to be and to live on the brink of nuclear destruction. We cannot understand that we ought to live with the void without doing something about it. Such behaviour is not intrinsic to the mind of human beings either in sickness or in health.

Do we not really comprehend the total non-existence of selflessness? After all, we know that we are mortal beings that our own death is the most certain thing in our lives. We probably know that human life on this globe will come to an end when the heat of the sun starts to cool. Intellectually, these are certain facts ranging from with a wide range to now to the distant future. A psychoanalyst is well acquainted with the difference between knowing and comprehending. No one has a true conception of his own death. All our fantasies are based on our conception of life and its symbolical forms. The fruits of our work, our offspring, the nation, matter and ideologies reside in the fantasies of our own death. Should the need arise we are prepared to sacrifice our own lives for the survival of others and the protection of what we value because in them a part of selflessness will continue to exist. In every fantasy of death and annihilation some parts of selflessness remain alive. Even in self-destruction and suicide here is an experience of preserving and controlling selflessness. For the first time in the history of mankind we truly need, in practice, a mental picture of total and ultimate destruction, and, in addition, of the entire but also symbolic non-existence of selflessness because we are holding in our hands the possibility of such destruction in the form of the hydrogen bomb. Some nuclear strategists have begun to suspect that there is something fundamentally at fault in nuclear strategy thinking, and that a new beginning has to be made from a totally new starting point. That fault may be the same one that McNamara sincerely and convincingly was talking about. He felt that it was urgent to invest some life and hope into the issue, the nuclear explosion. It seems that when the reality of total destruction begins to dawn upon us there comes the absolute necessity to say noso to that threatening reality: radiation quantities are not fatal, annihilation is not total, nuclear winter will not come, medical facilities will not be crippled. This is the familiar psychological defense mechanism, denial that gives protection against disturbing and threatening reality, and also prevents us from seeing it clearly. It is then possible to turn one's thoughts with hope to the possibility of limited nuclear war, to effective protective systems, and finally to a New Heaven erected in space where a messianic super-computer keeps watch over the fate of mankind like a New God. It is then necessary to think that the survivors of nuclear war climb out of their underground shelters into a new life. Or that the group rescued into space returns back to the face of the earth to start humankind anew. Or a group of elite individuals lives in an underground biosphere throughout the nuclear war preserving for life what is best in the human race. Or, as happened in a cartoon film:
mighty robots left behind by humans are waging war on the glaciers of nuclear winter carrying on the honourable heritage of human civilization.

THE ERA OF THE END

The era of the hydrogen bomb, this present thermnuclear age, nonetheless, needs something quite the opposite. In his well known writing "On Negation" (8) Freud stated that the first form of thought is negation. The first symbol of some need in the mind is NO. The infant has the use of the concept "mama" when he is in possession of the mental picture of mother's absence, of "mama is not". We need the capacity to say NO to our immediate needfulness, our desire for action and our feelings in order to have room and to be free to think that a thing can be something else than what we want it to be. In order to be able to think about nuclear destruction we need the capacity to have thoughts which say NO to our desire to live and to hope. We are forced to look into an abyss where not even an embryo of life is left by us. The nuclear age demands thinking to have clarity whose capacity for negation equals the absoluteness of nuclear holocaust. Nietzsche's abyss does not suffice. Such new era of thinking cannot be created instantly. The balance of terror, merciless mutual destruction is one phase of that thinking. It is a reminder that nuclear war knows no hope. The symbol of non-existence is being created by the physicists' description of nuclear winter. According to them the climatic changes caused by even limited nuclear war will bring about total ice age to our whole hemisphere. They are saying; there will be NO life. The organization of physicians against nuclear war has scientifically indicated that in whatever kind of nuclear attack the medical maintenance system will be paralyzed and totally destroyed. They are saying; there will be NO aid, treatment, protection in existence. Symington (9) has said that people must be made to believe that there will be a nuclear war. It is our only hope even though a very unlikely one. What he wishes to say is: hope CANNOT combat nuclear extermination. Perhaps we need the kind of nuclear strategy that investigates every possible way by which nuclear destruction can occur despite counterforce: what are the measures that DO NOT save us?

Our present age can be called the era of the end. Not in the apocalyptical sense that the end is imminent, but in the sense that we desperately need a clear concept of the ultimate end to go on living. The world view of this era could also include the perception of the human race gradually fading away side by side with the extinguishing sun without the need of self-inflicted end. The grief over such a world view might strengthen the desire to avoid an end which, after all, is in our own hands. Perhaps we need a sort of ecology of annihilation of the human race. Its task could be not only to study how nuclear destruction can be brought about, but also in what other ways the human being is being destroyed either of his own accord or despite his own actions. As the human race prepares itself for its expected death possible to occur in various different ways, it can at best continue to live as long as it is possible for reasons that are beyond its control.
REFERENCES

(3) Borden B. There will be no time. Princeton University Press, 1946.
(6) Rechardt E, Ikonen P. The interpretation of the death drive. To be published.
(9) Symington N. Psychoanalysis & the bomb. Paper delivered on 23 May, 1984 in London at a meeting of the Section for the Application of Psycho-Analysys.

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COMMENTARY ON THE LAPINLAHTI LECTURE 1986 “THE INCOMPREHENSIBLE FINAL DESTRUCTION”
BY EERO RECHARDT

The fifth Lapinlahti Lecture was given in 1986 by Eero Rechardt. The lecturer took advantage of the free choice concerning the topic. The topic was an important one, but it was not about psychiatry or even science, unless you consider the actions of the Finnish group of Psychoanalysts Against Nuclear War, which belonged to the International Psychoanalysts Against Nuclear Weapons, as such. Currently, these pressure groups may exist but are not active anymore. Instead, the International Physicians for the Prevention of Nuclear War gained support and was awarded the Nobel Peace Prize in 1985. Nowadays, a group of people Against Climate Change would be similar to these, but more rooted in science in its actions, and timely.

By coincidence, in the year of this Lapinlahti Lecture 1986, the Institute of Medicine Steering Committee for the Symposium on the Medical Implications of Nuclear War released a book which Fredric Solomon and Robert Q. Marston had edited for National Academy Press. It was hailed as the most comprehensive work yet produced on the subject and among other themes addressed the nuclear arms race from a psychosocial perspective as well.

On the nuclear threat, psychoanalysts had kept writing about it for years dating back to 1946. During the years of Cold War from 1947 to 1991, there were many, more or less formal groups of resistance such as the pressure group called Psychoanalysts for the Prevention of Nuclear War which was founded in 1983. The motivation for creating these groups lay in the naive conviction that a profession could bring to bear particular insights and skills, and in the desire of some to enter the political arena and bask in the limelight for their 15 seconds of fame. As you know, all are equal but some are more equal than others.

Timo Partonen, Editor-in-Chief
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ON SLEEP AND SLEEP PROBLEMS

by Björn-Erik Roos

LAPINLAHTI LECTURE IN HELSINKI ON THE 10TH AUGUST, 1988

Our diagnoses of mental illness and mental deficiency conditions are based essentially upon clinical observation. Technical methods have played, and still play, a very minor role in the diagnoses. Only in most recent time within the last 20 years have both methods and investigation into various substances in CSF or immunological investigations primarily of antibodies against certain viral diseases begun to have clinical significance. PET methods, i.e. positron emission tomography are under development, NMR i.e. nuclear magnetic resonance tomography, likewise. Computer tomography is routine method in many hospitals but more for the aid of neurologists than psychiatrists.

As far as the mental functions are concerned, the brain is still an unknown organ — our last unknown organ nesting in its hard, cranial cavity inaccessible to intervention and examinations. The roentgenological methods PET and NMR have made greater development possible but for results we must wait at least a further 20 to 30 years. In order to attain research results, in addition to physicians, we need psychologists trained in natural science which here in the North we suffer a lack of — but such people are in the process of being trained in Europe and the USA, as I have been able to ascertain for myself in the course of my travels in recent years.

Virtually all diagnostic activity is based upon observation on people awake, whilst that third of each 24 hours when we sleep almost no attention whatever is applied. That changes during sleep could form bits of this diagnostic puzzle with which we are all engaged every day has nevertheless been clear to many researchers since the beginning of the century.

Sleep was long regarded, however, as a homogenous process and our conception of sleep as a differentiating phenomenon arose as recently as the end of the 1950s when some American researchers observed how people asleep several times during the night carried out horizontally directed rhythmical movements of the eyes of 20 to 30 minutes' duration. These phenomena were first discovered with children, and shortly after with adults, to become soon called REM periods after the English 'Rapid Eye Movement'. They occurred 4 to 5 times a night and were connected with dreams.

But research into sleep was both very time-consuming and dependent on apparatus and it has only lately become more general by means of modern electronics. Right now it is swarming with new technical proposals and views. The cause of this lies in so many sleep researchers being neurophysiologists with a fondness for new apparatus and methods. One easily forgets the purpose of it all, which is the study of the nature of sleep, foremostly human sleep.

As well as the study of the structure of sleep itself, of its course, the study of
the variations in the rhythm of each 24 hours lies also within this research area. Such research has been conducted since the 1930s but the results lie outside the scope of today. But thereby the question also becomes actual of the cyclical courses that are typical of the transformation of a multitude of substances in our body. And also the question of circadian rhythms.

Let me first describe in brief the structure of sleep, which is well known enough to some of us but for many still something not quite clear. The various stages of sleep are determined through analysis of the EEG picture in combination with the registered electro-oculogram (EOG) and the electro-mygogram (EMG). In its most simple form this occurs by registering through 4 channels, 2 eye registrations, one EEG and one EMG registration. When examining patients with presumed apnoea in sleep or narcolepsy one often employs as many as 9 to 10 channels for registration.

When sleep research began to develop REM sleep was regarded as the most interesting phenomenon. Every soporific reduced REM sleep. When the soporific was removed, the REM sleeping time increased, and one spoke of REM-rebound. Strongly increased REM time is often accompanied by nightmares, the cause of which is not clear. The REM periods vary with age becoming shorter with the years.

In recent times, however, deep sleep (SWS) has begun to interest researchers more and more. The reason for this is that the subjective experience of sleep is thought to be connected with deep sleep. Among other things it is known that nearly all growth hormones (GH) are secreted during the deep sleep period.

From the psychiatric viewpoint there are at least three different aspects to the interest in sleep. Firstly, the basic pattern of sleep seems to be connected to the basic personality, and secondly the structure of sleep seems to be able to change whenever mental illness is present. Finally, if dream research is understood as psychiatry it could also be added that this research is of special interest and that it has developed considerably in recent years.

There may be a mutual connection between the basic pattern of sleep and mental illness, at least the clinical pictures of various concepts of illness give such an impression. Actually, psychiatric illnesses should be divided into two major groups. One of the groups concerns disturbed affects, i.e. depressions and manias. Here we see two typical changes in sleep which we employ in diagnosis. This is partly due to abbreviated REM-latency and the reduced part of deep sleep in the structure of sleep. REM-latency is the time between the commencement of stage two and the first REM period. REM-latency shows a tendency towards normalization during the course of treatment with anti-depressives, though mostly perhaps when using MAO-inhibitors or electro-shock treatment, but the change is not constant from patient to patient and it is hardly dependent on the innermost cause of the depression. Deep sleep (SWS) which is often entirely absent in severe depressions disappears virtually completely during treatment with anti-depressives, which is also a sign, as I have just stated, of having a certain relevance. It is a mutual mechanism which is affected.

Something then about the 24 hour rhythm. If human beings are divided into morning people and evening people, one generally finds that as a rule the emotionally ill are among the latter. This was already shown in 1940 by Bingel. It is typical of these people that they attain their maximum temperature first in the afternoon.
and also their optimal level of achievement. It is of course a known fact that the endogenously depressed are sometimes able to feel as good as in full health in the evening, whilst the next morning brings along the same troubles as before. Systematic studies of circadian rhythms are in progress in many parts of the world. Carroll has carried out excellent studies in corticosteroid secretion; melatonin and the secretion of melatonin have interested a research group of Lennart Wetterberg and his colleague Johan Beck-Frös. One can mention in connection with the problem that cyclothymic people are especially common among the manic-depressives. Cycloid people are usually evening people.

The other major group of the mentally ill are people with disturbance of perception. They are generally morning people, also according to Binge. These people have their maximum temperature in the morning along with their optimal level of achievement and psychical activity. There is a disconnected pattern in the structure of their sleep with a large number of wakeful periods and late appearing SWS which is also short and divided into several passages. The reduced REM-latency which is seen in emotional states, and which is a sign of increased cholinergic impulse intensity, is not regarded as connected with this group of patients suffering from perceptual disturbance.

It is worth noting that so-called neurotics have quite normal sleep registrations once they have fallen asleep. They come also within the morning-evening rhythm category without showing preference for neither one nor the other. A factor which accompanies the evening-morning pattern is the appetite, which with depressives increases toward the evening. Evening people sleep also longer than morning people, their sleep increasing in addition during the periods of depression. The SWS part of the sleep is generally low. It is considered that the patients are unable to recharge their batteries normally.

To revert to the affective illnesses, it may be said that monopolar patients sleep longer than normal but with lesser benefit, above all in SWS and with almost normal REM sleep, whilst bipolar patients sleep a short SWS in a normal length of sleep during their periods of depression and less REM sleep than normal during their manias.

During the acute phases of various schizophrenic condition the sleep is severely disturbed with irregular REM periods and often almost lacking SWS because of constant wakefulness. But in the chronic phase an almost normal or wholly normal sleep with regularly occurring REM periods has long been observed. This was strange in view of, for example, Abrey Lewis's conception of psychosis as a dream in the state of wakefulness. But a more precise analysis of the REM sleep produces a surprising result. The REM rebound after the deprivation of sleep which normally occurs is not found in schizophrenia, but when the patients have their positive periods, i.e. when free of perceptual disturbance, they do then have extremely powerful REM rebound periods. As with so many other things with these patients, the cause of this is unknown. There are several other unsolved riddles as, for example, in connection with periods of high temperature, i.e. fever, an almost complete normalization of the picture of schizophrenic illness is observed and the 24 hour rhythm of these patients is different from that of normal people.

In summary I should like to mention the following:

1. The diagnoses of various mental illnesses, particularly the major, severe illnesses,
are based on clinical observations during daytime. We have very few technical
tests and observations that can be relied on. Whatever occurs during the night
we do not know much about, but certain phenomena we ought to pay atten-
tion to in our diagnoses. The night is, after all, one third of our lives. The
structure of sleep changes under the influence of mental illness. We ought to
be able to employ such knowledge in our diagnoses.
2. Changes in our 24 hour rhythm must have some significance to our well-being.
When we fly over time-zone boundaries we meet with what is called in English
time-lag — something most unpleasant from which we recover only after sev-
eral days. Sleep and wakefulness, appetite, body temperature, hormone produc-
tion, etc., are controlled by clockwork of which we know little in conjunction
with mental illnesses. One might speak of this as an almost untapped field of
research.
3. We know that REM-lateness and SWS are typically changed in psychic illnesses,
which points towards the endogenous character of the illnesses, and further,
that people with tendencies towards 24 hour rhythm more easily acquire psy-
chic symptoms, or rather perhaps vice versa, that people with tendencies to-
wards psychic illness are evening types.
4. We know that morning people are more vulnerable to illnesses connected with
perception clashes and that their sleep during the psychotic stage is totally dis-
tegrated and their 24 hour rhythm disturbed. In the chronic phase we see
changes in REM rebound of an untypical manner, absent when the symptom
of perception disturbance increases, but present again when the patient be-
comes better.
Sleep research is thus an important part of psychiatry.
Lastly, a few words about dreams and dream research. The important question
which still remains unanswered is whether during the various REM periods of the
night one dreams different dreams, or whether one has the same dream pattern
throughout the whole night. Research under this heading is proceeding in many
parts of the world and is something with which we ought to occupy ourselves.
How the content of dreams varies with different experiences during the day is also
an extremely interesting and important research area which should demand a
wealth of research.
I repeat that sleep research is an important part of psychiatry whether one is
interested in pure neurophysiology, classical psychiatry of psychologically and
psychodynamically oriented psychiatry. Everyone is able to find an outlet for his
interest in research within sleep research.
COMMENTARY ON THE LAPINLAHTI LECTURE 1988 “ON SLEEP AND SLEEP PROBLEMS”
BY BJÖRN-ERIK ROOS

The sixth Lapinlahti Lecture was given in 1988 by Björn-Erik Roos. This was also the first one of these lectures during which I listened and sat as a medical student in the audience at the lecture hall of Lapinlahti Hospital. It is my favourite as well in that the lecture was only four printed pages in length and included no references. So, it was the lecture, and I have in fact taken the liberty to make it a personal choice for its take-home message.

The lecture discussed not only about the structure of sleep, but also about the circadian rhythms. At first, the lecturer balanced with pessimism and optimism by saying that “the brain is our last unknown organ nestling in its hard, cranial cavity inaccessible to intervention and examinations”. Immunological investigations as well as brain imaging studies were regarded as promising, but “for results we must wait at least a further 20 to 30 years”.

Well, 30 years have passed now, and what do we have at hand? First, Arvid Carlsson, Paul Greengard and Eric Kandel were awarded the Nobel Prize in Physiology or Medicine in 2000 for their discoveries concerning signal transduction in the nervous system. Second, Jeffrey C. Hall, Michael Rosbash and Michael W. Young were awarded the Nobel Prize in Physiology or Medicine in 2017 for their discoveries of molecular mechanisms controlling the circadian rhythm. That is it.

The lecturer went on to mention (Adolf Abraham Gustav) Bingel and his early findings of 1940 on the chronotype, and stated that “the appetite with depressives increases toward the evening”. Further, that “evening people sleep also longer than morning people, their sleep increasing in addition during the periods of depression”, and that “the slow-wave sleep part of the sleep is generally low”. Thus, finally, that “the patients are unable to ‘recharge their batteries’ normally”.

The lecturer summarized: “Changes in our 24-hour rhythm must have some significance to our well-being, of which we know little in conjunction with mental illnesses. One might speak of this as an almost untapped field of research.” Yet, the conclusion was undeniable: “Everyone is able to find an outlet for his interest in research within sleep research.”

Here, in the end, I want to bring back to you, my readers, the wise words from a subscriber who wrote in his letter to the Editor of The Journal of Paris as early as in 1784 as follows: “I will not dispute with these people, that the ancients knew not the sun would rise at certain hours; they possibly had, as we have, almanacs that predicted it; but it does not follow thence, that they knew he gave light as soon as he rose. This is what I claim as my discovery. If the ancients knew it, it might have been long since forgotten; for it certainly was unknown to the moderns.” But, I know a change will come, oh yes, it will. So, if it were not a paradigm shift in psychiatric research, climate change will come anyway: maybe not today, maybe not tomorrow, but soon and for the rest of your life.

Timo Partonen, Editor-in-Chief
DISCREPANCY BETWEEN SELF-REPORTED RESILIENCE AND OBJECTIVE COGNITIVE PERFORMANCE IN ASSESSMENT OF WORK ABILITY: AN ANALYSIS OF TWO DIAGNOSTIC GROUPS

ABSTRACT

Subjective evaluation of psychiatric patients is less accurate and more variable than the average in the general population and, thus, it is important to discuss the relationship between subjective and objective ability. However, few studies have explored differences between psychiatric patients’ subjective ability and objective cognitive test performance. We gathered a sample of consecutive (unselected) patients referred for psychiatric assessment of work ability at Helsinki University Hospital. Subjective resilience was measured with Wagnild’s 14-item Resilience Scale (RS-14) and objective ability with Cambridge Neuropsychological Test Automated Battery (CANTAB). As a whole, the patients estimated their resilience to be low. Patients diagnosed with depressive disorder or bipolar disorder estimated their resilience significantly lower than the other psychiatric group. Yet with neuropsychological tests there was no difference between groups. Resilience correlated positively with the work ability recommendations given at the end of the assessment period. When resilience increased, the probability of belonging to the group that was able to work was significantly higher compared to the groups that were totally or partially unable to work. The result remained the same even if education was taken into account.

KEYWORDS: ABILITY TO WORK, CANTAB, COGNITION, DEPRESSION, NEUROPSYCHOLOGY, RS-14
INTRODUCTION

Neuropsychological assessment is concerned with identifying the cognitive, emotional and behavioural consequences of brain dysfunction [1]. In addition to the objective information (for example, education, work history, standardized tests), the patient’s subjective experiences of their own abilities, strengths and symptoms are collected in an interview and often via different structured questionnaires. The self-evaluation of psychiatric patients is complex, less accurate and more variable than the average in the general population [2], thus, it is important to discuss the relationship between subjective and objective functional ability [3].

Resilience has been seen as a powerful concept in psychiatry for the prevention of, and recovery from, mental illness and has many theoretical associations with work ability. Although there is no single, universally accepted definition of resilience, it has been defined as a personal competence and positive personality characteristic that enhances individual adaptation [4]. Resilience is related to one’s capacity to use various and flexibly appropriate coping strategies [5], experience positive emotions [6-8] and develop higher self-esteem and a more positive attributional style [9], as well as self-regulation capacity and emotion regulation skills [10]. Weak resilience, on the other hand, has been reported to be associated with mental illness, especially depressive symptoms and depression [7, 8, 11-13]. Moreover, there is a negative relationship between resilience and the severity of depression [13].

With these observations in mind, we included subjective and objective measures in psychiatric neuropsychological assessment of work ability. Subjective measure in this study was Wagnild’s 14-item Resilience Scale, which has been found to be a useful evaluation tool in the healthy Finnish population [14]. Studies have shown that mental health problems are reflected in Wagnild’s Resilience Scale in that people with such problems tend to attain a lower score [12, 15-17].

Objective measure was Cambridge Neuropsychological Test Automated Battery (CANTAB®) tasks [18, 19]. Psychiatric patients often have the same neuropsychological problems, regardless of their diagnosis [20, 21], and cognitive difficulties observed in psychiatry are often associated with the severity of psychiatric disorder.

To this end, our specific aims in this study were (i) to compare the resilience of healthy Finns to a sample of Helsinki University Hospital psychiatric patients, (ii) to evaluate the subjective (resilience) and objective (cognitive) performance between the depressive group and the other psychiatric group, with a special focus on depressive patients, and (iii) to explore the extent to which resilience is associated with objectively estimated work ability.

SUBJECTS AND METHODS

STUDY FRAME AND ETHICS

The study is part of a larger HUS Helsinki University Hospital psychiatric research project that began in January 2016. The research data were collected as part of the clinical assessment in the Outpatient Clinic for Assessment of Ability to Work at HUS Helsinki University Hospital between February 2016 and March 2017. Ethics approval for the study was obtained from the Ethics Committee of HUS, Finland.

PROCEDURE

This registry study sample included 150 patients who were evaluated by neuropsychologist as part of a large, multi-professional clinical assessment, in order to obtain both subjective and objective information about patients’ functional capacity within a structured and semi-structured assessment situation. The study included Finnish-speaking patients who were cognitively capable of participating in the Cambridge Neuropsychological Test Automated Battery (CANTAB®, www.cambridgecognition.com) [18, 19].

The final sample consisted of 95% of all the patients attending the specialized psychiatric unit between February 2016 and March 2017. The patients were referred primarily by occupational healthcare (37%), psychiatric clinics (31%), HUS (9%) or private physician (9%).

PARTICIPANTS

The sample consisted of an equal number of men and women. The patients ranged in age from 20 to 65 years, with an average age of 44.8 years (SD=10). There were 48 patients (32%) in the 20–39 age group, 49 patients (33%) in the 40–50 age group and 53 (35%) in the 51–65 age group. There was no significant difference in age between men and women (mean=45.5, SD=9.8 vs. mean=44.1, SD=10.2, respectively; p=.39).

We classified the participants in terms of education as follows. Two participants (1%) in the study had not completed primary school, 11 patients (7.5%) had completed primary school, but had no further education, 11 (7.5%) had complete upper secondary school without further education, 57 patients...
(38%) had acquired vocational education after primary school and 69 patients (46%) had higher education. Patients with higher education had either completed their studies at a university of applied sciences (n=36; 24%) or acquired a university degree (n=33; 22%).

All of the patients were evaluated by means of a structured interview SCID-I [22] and SCID-II [23] and diagnosed in accordance with the ICD-10 system [24]. A primary diagnosis of depression was confirmed in 75 (50%) patients and eight patients (5%) had bipolar disorder (Depressive group, F30–F39, n=83, see Table 2). Out of those patients who had psychiatric problems other than mood disorder (F30–F39), 27 patients (18%) were given an anxiety diagnosis (F40–F49), 12 patients (8%) had a primary personality disorder (F60–F69), 11 patients (7%) had psychosis spectrum diagnosis (F20–F29), four patients (3%) had substance abuse disorder, one patient (1%) had insomnia, seven patients (5%) were given an organic diagnosis and five patients (3%) were given a learning disability (F80-F89) or an ADHD diagnosis (F90).

Based on the final discussion after the large, multi-professional clinical assessment period, the work ability of the patients was classified as follows: 31 patients (21%) were unable to work, 77 patients (51%) were partially unable to work and 42 patients (28%) were able to work.

MEASURES
All participants (n=150) completed the Finnish version of the shorter Resilience Scale RS-14 [7, 8], which comprises 14 questions with a seven-point scale (1=strongly disagree, 7=strongly agree). The maximum score is 98 points and the lowest 14. According to Wagnild’s rating, scores in the 14–56 range are classified as very low, 57–64 as low and 65–73 at the low end. Moderate scores range between 74 and 81, moderately high between 82 and 90, while high scores fall in the 91 to 98 range [8].

Losoi’s [14] reference data “healthy Finns” were collected by researchers and psychology students mainly from the departments of their respective workplaces and universities (n=243, 75% female, with an average age of 41 years).

Patients filled in several questionnaires during the psychiatric assessment period. Since we collected the data retrospectively in this register study, some information was missing. The study included questionnaires related to depression and anxiety: the Beck Depression Inventory, BDI (n=137) [25] and the Overall Anxiety Severity and Impairment Scale, OASIS (n=105) [26]. Moreover, work-related questionnaires such as the Sheehan Disability Scale (n=133) [27], the Return-to-Work Self-Efficacy scale, RTW-SE (n=100) [28] and the Return-to-Work Readiness Questionnaire, RTW-RQ (n=108) [2] were administered. Alcohol consumption was measured with the Alcohol Use Disorders Test, AUDIT (n=127) [29].

Full neuropsychological assessment was carried out on 50 (33%) of the examinees by a neuropsychologist. Cognitive assessment was carried out on 53 (35%) of the examinees by a psychologist. All participants completed Cambridge Neuropsychological Test Automated Battery, CANTAB [18, 19], which included Attention Shifting Task (AST), Motor Screening Task (MOT), Paired Associates Learning (PAL), Rapid Visual Information Processing (RVP) and Spatial Working Memory (SWM).

STATISTICAL ANALYSIS
The data were analysed using the IBM SPSS statistics program for Windows, version 22. The average difference between groups was examined by means of t-test. The association between resilience and education was studied using the one-way analysis of variance. Multinomial logistic regression was applied to examine how resilience was associated with work ability, and the group that was unable to work was used as the reference group.

RESULTS
RESILIENCE (RS-14) IN SAMPLE OF HEALTHY FINNS COMPARED TO PSYCHIATRIC SAMPLE
The overall resilience of the psychiatric patients was significantly lower than in Losoi’s (convenience) sample of healthy Finns (mean=60.11 vs. mean=76.30). On average, the patients’ scores in all of the items were lower than those of the healthy Finns [14] (see Table 1). There were no significant differences between the RS-14 values in women and men (p=.08), while a weak but statistically significant association was found between the RS-14 and education [F (5,144)=2.36, p=.04].

SYMPTOMS AND COGNITIVE PERFORMANCE (CANTAB) BETWEEN TWO PSYCHIATRIC GROUPS
On average, the psychiatric patients estimated their resilience as low. Patients with major depressive disorder or bipolar disorder had very low resilience (see Table 2). The average difference between depressive group and the other psychiatric group was highly significant with RS-14, and also
BDI, OASIS and Sheehan Disability Scale. Return-to-Work Self-Efficacy (RTW-SE) and Return-to-work Readiness (RTW-RQ) were significantly lower with the depressive group.

In objective neuropsychological tests, Cambridge Neuropsychological Test Automated Battery (CANTAB®, www.cambridgecognition.com) [18,19], we did not find statistically significant differences between depressive group and other psychiatric group. On average, both groups had cognitive difficulties. The depressive group had a slightly better education level (higher education 49% vs. 42%).

THE RELATIONSHIP BETWEEN RESILIENCE AND WORK ABILITY

Based on the multi-professional clinical assessment, the work ability of the patients was classified into three groups. The patients were classified as unable to work, partially unable to work or able to work. In statistical terms, when resilience increased, the probability of belonging to the group that was able to work was significantly higher compared to the groups that were unable or partially unable to work [OR=1.07, 95% CI 1.04–1.11, χ2(1)=19.51, p<.001]. In other words, the ability to work was associated with higher resilience. The result remained the same even when education was taken into account. There was no difference between the “unable to work” and the “partially unable to work” groups with regard to the questionnaires, apart from the Return-to-Work Self-Efficacy rating (see Table 3).

DISCUSSION

The overall aim of this study was to examine self-reported resilience (RS-14) and objective cognitive tasks (CANTAB) as components of the neuropsychological assessment of psychiatric work ability. The first objective was to compare resilience between the sample of healthy Finns to the psychiatric sample of Helsinki University Hospital patients. Another important objective was to evaluate the resilience (subjective) and the cognition (objective) performance between different diagnosis groups. The third aim was to explore how resilience is associated with objectively evaluated work ability.

MAJOR FINDINGS

In general, we found resilience to be low if the patient had mental problems, but there were differences in resilience between the diagnosis groups. Depressive and bipolar patients estimated their resilience as very low and their subjective estimation was significantly lower than the rest of the patients, even though we did not find differences in objectively tested cognition between groups. It was found that the higher the resilience, the better the work ability.

RESILIENCE AND COGNITION OF THE PSYCHIATRIC PATIENTS

As expected, the patients who took part in this study estimated that their resilience was considerably lower than the average of the healthy Finns. In Losoi’s sample, the RS-14 mean was 76.30, which is moderate. In our study, the average self-reported resilience of the psychiatric patients was low, at 60.11. In other studies using the RS-14 questionnaire, the group with mental disorders was found to be less resilient than the control group [12, 15-17].

Those patients with a diagnosis of depression or bipolar disorder had the lowest resilience of all. Low resilience has been particularly associated with depression and depressive symptoms [7, 8, 11-13]. There is a negative relationship between resilience and the severity of depression [13]. Depressive patients subjectively estimated that they had more depressive symptoms, more anxiety symptoms and lower ability to work than the rest of the patients.

All the patients had the lowest scores in response RS-14-05 (“I feel that I can handle many things at a time”) which is reflective of their cognitive problems. Psychiatric patients often have subjective and objective cognitive problems, regardless of their diagnosis. Objectively tested, we found that the depressive patients had, on average, as many cognitive problems as the other psychiatric patients.

Lack of resilience is associated with challenging functional deficits in patients, including secondary adverse behavioural patterns, such as fear-avoidance reactions, and tertiary deficits including a maladaptive sickness role with established negative self-expectations and a narrowed outlook [2, 30]. Confidence in one’s capacity to deal with stress also increases a sense of control, active problem-oriented coping, motivation and perseverance, thereby modifying responses to stressors and buffering against stress-related psychological disorders such as depression [31]. As neuroplasticity is exhibited throughout the lifespan, many of the stress-protective resilience factors can be enhanced through practice and training [31] or psychotherapy [32].
THE RELATIONSHIP BETWEEN RESILIENCE AND ABILITY TO WORK

The third main objective of this study was to explore whether resilience is connected with work ability. We found that resilience was related to the objective work ability recommendation that was given after the assessment period. When resilience increased, the probability of belonging to the group that was able to work was higher. For those who were able to work, the RS-14 mean total score was 72.93 (SD=14.4), which is at the low end/near moderate, according to Wagnild’s rating. There was no difference between the “totally unable to work” and the “partially unable to work” groups in terms of resilience. Both groups had resilience classified as very low.

The results suggest that subjective experience was taken into account in the work ability recommendations after the assessment period. Patients’ subjective experiences of their own functional capacity have been found to be relevant in predicting the return to work [33-35].

In addition to ways in which the patient can improve their personal resilience, the work community also has a role in helping less resilient workers [36].

LIMITATIONS

Due to the cross-sectional design of this study, causal relationships with resilience cannot be inferred. However, some patients spontaneously said that before their psychiatric illness they would have evaluated their resilience as being higher. On the other hand, other patients said that their resilience had been low since childhood. Hence, the RS-14 questionnaire may provide the clinician with valuable non-numerical information about rehabilitation opportunities and psychological resources for individual patients.

One limitation of the study concerns the fact that the cases who were not cognitively capable of participating in cognitive tasks were excluded. However, the strength of this study was that all of the patients received a broad and multi-professional clinical assessment, and the sample was highly representative of the patients at the specialized unit for the assessment of work ability at HUS, despite the fact that it was not homogeneous.

The reference group “healthy Finns” were a convenience sample of 243 individuals recruited by researchers and students of psychology mainly from the departments of their workplaces and universities [14]. It may not be optimal for the reference group, but in clinical assessment it seems to work very well.

PRACTICAL IMPLICATIONS

Questionnaires are an important part of neuropsychological assessment when self-reported, subjective information is combined with more objective data from standardized tests conducted by a neuropsychologist. It is also beneficial to collect objective information about the patient’s education, work history and everyday functional capacity. A more complete picture of the person’s situation can also be obtained by considering data provided by informants [3] and a multi-professional clinical assessment. In this context, self-assessment tools such as the RS-14 may provide clinically relevant information about the patient’s style of responding, positivity, emotional regulation and self-regulation. Muschalla [37] found that a person with a mental disorder may have a higher level of work anxiety and their affective judgment about work can be negative, so it is also important to ask questions which are not directly related to work.

On the other hand, neuropsychological evaluation alone is not enough when conducting a psychiatric evaluation of work ability. Neuropsychological difficulties of psychiatric patients are often non-specific, and neuropsychological difficulties observed in psychiatry are often associated with the severity of psychiatric disorder.

CONCLUSION

In sum, resilience is generally lower if mental problems are present, but there may exist major differences in the level of resilience between different psychiatric diagnosis groups. In objective neuropsychological tests, differences between diagnosis groups seem to be small, if any. The ability to work associates significantly with higher resilience.
Table 1. Resilience (RS-14) mean and standard deviation (SD) in sample of healthy Finns compared to Finnish psychiatric sample.

<table>
<thead>
<tr>
<th>Items</th>
<th>Healthy Finns (n=243)</th>
<th>Patients (n=150)</th>
<th>t(191)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-14-01 I usually manage one way or another</td>
<td>6.22</td>
<td>1.58</td>
<td>9.38***</td>
</tr>
<tr>
<td>RS-14-02 I feel proud that I have accomplished things in my life</td>
<td>5.84</td>
<td>2.00</td>
<td>7.91***</td>
</tr>
<tr>
<td>RS-14-03 I usually take things in stride</td>
<td>4.48</td>
<td>1.95</td>
<td>4.18***</td>
</tr>
<tr>
<td>RS-14-04 I am friends with myself</td>
<td>5.38</td>
<td>1.94</td>
<td>6.79***</td>
</tr>
<tr>
<td>RS-14-05 I feel that I can handle many things at a time</td>
<td>5.51</td>
<td>1.80</td>
<td>14.39***</td>
</tr>
<tr>
<td>RS-14-06 I am determined</td>
<td>5.41</td>
<td>1.75</td>
<td>7.04***</td>
</tr>
<tr>
<td>RS-14-07 I can get through difficult times because I’ve experienced difficulties before</td>
<td>5.26</td>
<td>1.88</td>
<td>5.23***</td>
</tr>
<tr>
<td>RS-14-08 I have self-discipline</td>
<td>4.97</td>
<td>1.70</td>
<td>2.91***</td>
</tr>
<tr>
<td>RS-14-09 I keep interested in things</td>
<td>5.59</td>
<td>1.89</td>
<td>9.40***</td>
</tr>
<tr>
<td>RS-14-10 I can usually find something to laugh about</td>
<td>5.48</td>
<td>1.95</td>
<td>7.21***</td>
</tr>
<tr>
<td>RS-14-11 My belief in myself gets me through hard times</td>
<td>5.53</td>
<td>1.82</td>
<td>11.45***</td>
</tr>
<tr>
<td>RS-14-12 In an emergency, I’m someone people generally can rely on</td>
<td>5.21</td>
<td>1.77</td>
<td>3.28***</td>
</tr>
<tr>
<td>RS-14-13 My life has meaning</td>
<td>5.81</td>
<td>2.08</td>
<td>8.25***</td>
</tr>
<tr>
<td>RS-14-14 When I’m in a difficult situation, I can usually find my way out of it</td>
<td>5.59</td>
<td>1.65</td>
<td>6.95***</td>
</tr>
<tr>
<td>RS-14 total</td>
<td>76.30</td>
<td>18.60</td>
<td>10.82***</td>
</tr>
</tbody>
</table>

Table 2. The Beck Depression Inventory (BDI), the Alcohol Use Disorders Test (AUDIT), Overall Anxiety Severity and Impairment Scale (OASIS), Resilience (RS-14), The Sheehan Disability Scale (Sheehan), Return-to-Work Self-Efficacy (RTW-SE), Return-to-Work Readiness (RTW-RQ), Attention shifting task (AST), Paired Associates Learning (PAL), Rapid Visual Information Processing (RVP) and Spatial Working Memory (SWM) of two diagnostic groups.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Depressive(^a) (n=53)</th>
<th>Other psychiatric(^b) (n=67)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>45.35</td>
<td>44.09</td>
<td>10.61 NS</td>
</tr>
<tr>
<td>BDI</td>
<td>28.31</td>
<td>14.08</td>
<td>12.80 (135)=-6.76***</td>
</tr>
<tr>
<td>AUDIT</td>
<td>4.10</td>
<td>3.49</td>
<td>4.47 NS</td>
</tr>
<tr>
<td>OASIS</td>
<td>12.25</td>
<td>7.39</td>
<td>5.51 (103)=-5.01***</td>
</tr>
<tr>
<td>RS-14</td>
<td>52.45</td>
<td>69.61</td>
<td>16.60 (148)=6.31***</td>
</tr>
<tr>
<td>Sheehan</td>
<td>8.47</td>
<td>6.54</td>
<td>3.24 (131)=-4.47***</td>
</tr>
<tr>
<td>RTW-SE</td>
<td>17.48</td>
<td>28.14</td>
<td>18.26 (98)=3.42**</td>
</tr>
<tr>
<td>RTW-RQ</td>
<td>1.94</td>
<td>4.05</td>
<td>3.85 (106)=3.66**</td>
</tr>
<tr>
<td>AST % correct</td>
<td>93.05</td>
<td>91.90</td>
<td>7.78 NS</td>
</tr>
<tr>
<td>PAL total errors</td>
<td>19.90</td>
<td>25.31</td>
<td>33.32 NS</td>
</tr>
<tr>
<td>PAL total errors 6</td>
<td>6.03</td>
<td>7.52</td>
<td>10.70 NS</td>
</tr>
<tr>
<td>RVP A</td>
<td>0.67</td>
<td>0.87</td>
<td>0.96 NS</td>
</tr>
<tr>
<td>RVP false</td>
<td>2.22</td>
<td>2.20</td>
<td>3.75 NS</td>
</tr>
<tr>
<td>SWM errors</td>
<td>31.43</td>
<td>33.05</td>
<td>22.99 NS</td>
</tr>
<tr>
<td>SWM strategy</td>
<td>33.78</td>
<td>34.70</td>
<td>6.92 NS</td>
</tr>
</tbody>
</table>

Note: \( \text{aDepressive [F30–F39]: higher education 49\%, female 48\%}; \text{bOther psychiatric: higher education 42\%, female 53\%}. **<.01, ***<.001
Table 3. Resilience (RS-14), The Sheehan Disability Scale (Sheehan), Return-to-Work Self-Efficacy (RTW-SE), Return-to-Work Readiness (RTW-RQ) and demographic characteristics of the work ability groups.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unable to work (n=31)</th>
<th>Partially unable to work (n=77)</th>
<th>Able to work (n=42)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>Age</td>
<td>48.29</td>
<td>9.92</td>
<td>43.65</td>
</tr>
<tr>
<td>RS-14</td>
<td>52.61</td>
<td>18.96</td>
<td>56.14</td>
</tr>
<tr>
<td>Sheehan</td>
<td>8.30</td>
<td>2.76</td>
<td>8.10</td>
</tr>
<tr>
<td>RTW-SE</td>
<td>13.86</td>
<td>12.59</td>
<td>20.21</td>
</tr>
<tr>
<td>RTW-RQ</td>
<td>1.44</td>
<td>2.47</td>
<td>2.49</td>
</tr>
</tbody>
</table>

Note: Higher education = university of applied sciences or university degree
CONFLICT OF INTEREST:
The authors declare that they have no conflict of interest.

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Discrepancy between self-reported resilience and objective cognitive performance in assessment of work ability: an analysis of two diagnostic groups
Health-related quality of life (HRQoL) has improved in adults in Finland. Much less is known about HRQoL of adolescents. The aim of the present study was to compare HRQoL between school samples from 1996 and 2013. Furthermore, we investigated age and gender differences in HRQoL. The study samples comprised 239 adolescents in 1996 and 373 adolescents in 2013 from schools in the Helsinki Metropolitan area, and in Helsinki, respectively. The mean age of the adolescents was 13.6 years in 1996 and 13.7 years in 2013. According to Tobit regression there was no statistically significant difference (difference 0.001, \( p=0.767 \)) in the mean 16D scores between samples from 1996 and 2013. Ageing had a statistically significant decreasing effect (-0.005, \( p=0.014 \)) and male gender a statistically significant increasing effect (0.015, \( p<0.001 \)) on the mean 16D score.

In conclusion: HRQoL showed no change from 1996 to 2013 among Finnish 12- to 15-year-old adolescents. Adolescent boys had better HRQoL than girls and HRQoL scores deteriorated with increasing age.

KEYWORDS: ADOLESCENTS, AGE, GENDER, HEALTH-RELATED QUALITY OF LIFE, TIME TREND STUDY
INTRODUCTION

One way to monitor the success of health and social policies is to study changes in the population's health-related quality of life (HRQoL), defined as an individual's satisfaction or happiness in various life domains that are affected by health (1). The Finnish Health 2011 survey suggests that HRQoL of the adult population has improved from that observed in a national health survey performed in 2000 (2,3). Until now, there had been no research focusing on changes in HRQoL among Finnish adolescents. In Germany, HRQoL of 11- to 18-year-old children and adolescents was studied in 2007 (4) and the study was replicated five years later, using the same instrument, among 9- to 18-year-old individuals (5). The HRQoL had improved and substantial changes were observed in physical well-being, emotional well-being, self-esteem and family relations.

Michel et al. (6) studied HRQoL in more than 20,000 children and adolescents from 12 countries, including one Nordic country (Sweden). Children generally showed better HRQoL than adolescents. At the age of 8 years, boys and girls showed a similar average score, but a substantial gender difference was observed from ages 13 or 14 years onwards. In adolescence, boys scored higher in general HRQoL, physical well-being, psychological well-being, mood and emotions and self-perception. Additionally, boys also scored higher in autonomy, financial resources and relations with parents, but these effect sizes remained low. Girls scored higher in peer and social support and social acceptance, but the effect sizes were low. HRQoL decreased along with ageing in both genders, but this tendency was more pronounced among girls.

In 1996, HRQoL of 12- to 15-year-old Finnish school girls and boys was measured using the 16D instrument (7). A similar study was carried out in 2013. The aim of this paper was to analyse these data sets separately and pooled in a methodologically uniform way to see: whether there had been a change in HRQoL between these years, whether the possible changes had been similar for boys and girls and whether age already has an effect on HRQoL in this narrow age group. Based on earlier research, we hypothesized that: 1) HRQoL would be better in the latter sample, 2) the overall 16D score would deteriorate with increasing age and 3) the overall 16D score would be higher in boys than in girls.

SUBJECTS AND METHODS

THE SAMPLES

The study sample by Apajasalo et al. (7) was collected from 4 comprehensive schools in the Helsinki metropolitan area. The selection of comprehensive schools was based on best judgement to include adolescents with different socioeconomic backgrounds in the sample. Of 263 pupils aged 12 to 15 years, whose parents had given an informed consent for the child to participate, 239 (91%) eventually filled in the 16D questionnaire (115 girls and 124 boys). The mean age of respondents was 13.6 years (SD 0.92). The mean age of girls was 13.6 years (SD 1.08) and that of boys 13.7 years (SD 0.76).

In 2013 the data were collected in 13 randomly sampled schools in Helsinki, focusing on grades 6 to 9. The first author (A.R.) randomly assigned a running number for each school, separately for primary schools and for junior high schools. She then contacted the school headmasters in order of the numbers. If the headmaster did not grant research permission, she contacted the next school in order until the desired number of pupils was reached. Guardians of the pupils received an information letter about the study by mail. They were invited to give an informed consent allowing their offspring to participate. In case the guardians were divorced, informed consent was obtained from both parents. The first author (A.R.) then attended a class meeting with those adolescents whose parents had given a written informed consent and provided information about the study project. Of pupils with their parents permission, 363 (74.5%, 210 girls and 163 boys) wanted to participate, gave their written informed consent and completed the 16D questionnaire. The mean age of respondents was 13.7 years (SD 1.04; range 12-15). The mean age of girls was 13.7 years (SD 1.04) and that of boys similarly 13.7 years (SD 1.04).

THE HRQOL INSTRUMENT

The 16D© is a generic, standardized and self-administered HRQoL instrument for early adolescents aged 12-15 (7). The 16D is based largely on the 15D instrument designed earlier for adults. The structure and the valuation system (an application of the multi-attribute utility theory) of these HRQoL instruments are the same. These instruments can be used as both a profile and single index utility score measures. When developing the age-appropriate instrument for early adolescents, the questions of the 15D were modified (e.g. usual activities reformulated to school and hobbies), one
question was deleted (sexual activity), and, in addition, two other questions were added (physical appearance, friends). The 16D questionnaire consists of 16 multiple choice questions each representing one dimension of health (vitality, seeing, breathing, distress, hearing, sleeping, eating, discomfort and symptoms, speech, physical appearance, school and hobbies, moving, friends, mental function, excretion, depression). For each dimension, the respondent is advised to choose one of the five levels best describing his/her state of health at the moment (the best level=1; the worst level=5). The single index score (16D score), representing the overall HRQoL on a 0-1 scale (1=full health, 0=being dead) and the dimension level values, reflecting the goodness of the levels relative to no problems on the dimension (=1) and to being dead (=0), are calculated from the health state descriptive system (questionnaire) by using a set of population-based preference or utility weights. Mean dimension level values are used to draw 16D profiles for groups (Apajasalo et al. 1996). The 16D health-related quality of life (HRQoL) instrument is available from: http://www.15d-instrument.net/16d-and-17d/16d/ [Internet, cited on 26.05.2019].

**ETHICS**

The protocol of the 1996 study sample was approved by the Institutional Ethics Committee of the Helsinki University Children's Hospital, and the protocol of the 2013 study sample was approved by the Institutional Ethics Committee of the Helsinki and Uusimaa Hospital District on November 21, 2012 (registration number 341/13/03/03/2012). For both studies, the permission of each school headmaster was a prerequisite for conducting the study. In addition, the protocol of the 2013 study was approved by the Helsinki City Education Department.

**STATISTICAL ANALYSES**

The data were analysed using the SPSS for Windows statistical software version 25.0 (SPSS, Inc., Chicago, IL, USA). The statistical significance of the differences in the mean dimension level values (the 16D profiles) between 1996 and 2013 data, and between gender groups, was tested with independent samples t-test, and as distributions of level values were skewed, differences in medians were tested with Mann-Whitney U-test as well. To check whether possible differences in the age and gender structure of the 1996 and 2013 data might have had an effect on the result when comparing the mean 16D scores between these points of time, the variance of the 16D score in the combined data was explained by Tobit regression with age, gender and year dummy as explanatory variables. In addition, Tobit models were run to check whether the effects of age and gender had changed over time. The Tobit model was deemed suitable for two reasons. Firstly, the distribution of the dependent variable (16D score) was skewed and censored at 0 and 1 (the range of the scores 0–1) and, secondly, a substantial proportion of the observations was at the upper limit of 1 (21.7%). The Tobit model accounts for these special features of the distribution (8,9).

The differences between groups (based on means and 95% confidence intervals (CIs)) are reported for the main results. P-values <0.05 were considered statistically significant.

**RESULTS**

**COMPARISON BETWEEN THE TWO SAMPLES OF THE 16D PROFILES**

The 16D profile of adolescents from 1996 did not differ significantly from that of adolescents from 2013, with two exceptions: adolescents from 2013 scored significantly higher on seeing and vitality (Figure 1). When girls from 1996 were compared to those from 2013, girls from 2013 scored significantly higher on the dimensions seeing and vitality, whereas girls from 1996 scored significantly higher on friends (Figure 2a). Regarding boys, none of the dimensions showed a statistically significant difference between the samples (Figure 2b).

**GENDER DIFFERENCES IN THE 16D PROFILES**

In 1996, boys were significantly better off than girls on the dimensions of seeing, sleeping, depression and physical appearance (Figure 2c). In 2013, boys scored significantly higher on the dimensions of hearing, discomfort and symptoms, depression, distress and physical appearance (Figure 2d). In all these comparisons, t-test and Mann-Whitney produced virtually identical results.

**VARIABLES ASSOCIATED WITH THE 16D SCORE**

In the sample from 1996, the mean 16D score was 0.949 (SD 0.049) and in the sample from 2013 0.947 (SD 0.058). When age and gender were adjusted for in the Tobit regression analysis of the pooled data, there was no statistically significant difference in the mean 16D scores between the samples (difference 0.001, p=0.767). However, although the
age range in the data was narrow, the marginal effect of age (-0.005) turned out to be statistically significant (p=0.014) as did the coefficient of gender (0.015, p < 0.001), indicating better HRQoL in boys both in 1996 and 2013.

In the sample from 1996, girls’ mean 16D score was 0.944 (SD 0.045), and that of boys 0.954 (SD 0.052). In the sample from 2013 it was 0.939 (SD 0.062) in girls, and 0.957 (SD 0.052) in boys. In the sample from 1996, the marginal effect of age was -0.008 (p=0.013) and that of gender 0.012 (p=0.038), whereas in the sample from 2013 the corresponding effects were -0.004 (p=0.175) and 0.017 (p=0.003), respectively. Thus from 1996 to 2013 the deteriorating effect of age may have decreased, whereas the HRQoL difference in favour of boys had increased.

Figure 1. The adolescents’ mean 16D profiles 1996 (n=239) and 2013 (n=373). Statistical significance tested between samples.

Student’s independent samples t-test. ** = significant difference at p < 0.01
Mann-Whitney U-test
* = significant difference at p < 0.05, *** = significant difference at p < 0.001 of applied sciences or university degree
Figure 2a. The girls’ mean 16D profiles 1996 and 2013. Statistical significance tested between samples.

Student’s independent samples t-test. ** = significant difference at p < 0.01
Mann-Whitney U-test
* = significant difference at p < 0.05, ** = significant difference at p < 0.01
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Figure 2b. The boys’ mean 16D profiles 1996 and 2013. Statistical significance tested between samples.

Student’s independent samples t-test. NS
Mann-Whitney U-test NS
Figure 2c. The girls’ and boys’ mean 16D profiles 1996. Statistical significance tested between gender groups.

Student’s independent samples t-test.
* = significant difference at p < 0.05, ** = significant difference at p < 0.01,
***=significant difference at p < 0.001
Mann-Whitney U-test
* = significant difference at p < 0.05, ** = significant difference at p < 0.01, *** =
significant difference at p < 0.001
Figure 2d. The girls' and boys' mean 16D profiles 2013. Statistical significance tested between gender groups.

Student's independent samples t-test.

*=significant difference at p < 0.05, ** = significant difference at p < 0.01,

***=significant difference at p < 0.001

Mann-Whitney U-test

*= significant difference at p < 0.05, ** = significant difference at p < 0.01, *** = significant difference at p < 0.001
DISCUSSION

This study provides updated population reference values for the 16D HRQoL instrument among Finnish 12- to 15-year-old adolescents. Such data are important for the comparison of the HRQoL of patients with various diseases to that of the general population.

Our first hypothesis that HRQoL of Finnish adolescents would have improved over the years was not supported. Similar positive development in HRQoL as reported among middle-aged and older Finnish people (3) was not observed among adolescents. Interestingly, recently published articles, comparing results of the Finnish nationwide School Health Promotion Studies from 2000 and 2015, reported inequality trends in school bullying and smoking: the likelihood of bullying and being bullied, as well as the likelihood of smoking, increased markedly among adolescents with the most socioeconomic adversity (10,11). Torikka et al. (12,13) examined depression and alcohol use comparing the School Health Promotion Studies from 2000 to 2011. They found that the largest increase in the prevalence of self-reported severe depression was seen among socioeconomically disadvantaged pupils, whereas the overall decreasing trend in frequent alcohol consumption was not observed among them. These studies clearly demonstrate the trend of polarization of adolescent health and well-being in Finland. It is possible that our results, indicating that there had been no substantial change in HRQoL between the school samples from 1996 and 2013, reflect the sum effect of this polarization.

Our second hypothesis about a deteriorating 16D score with increasing age was supported. This finding was in line with several earlier studies (5,6,14-17). The impaired HRQoL, especially in girls, has been associated with challenges in coping during developmental transition from childhood to adolescence (5,6,15). The upper graders’ impaired HRQoL, when compared to that of the lower graders, may also have implications for the need of healthcare services (17). Although the age range of adolescents in this study was narrow (12-15 years), the 16D score deteriorated as age increased. Self-reported pubertal development has been shown to have a strong deteriorating impact on HRQoL when 13- to 17-year-old girls were compared to 11- to 12-year-old girls (18). There are also some conflicting findings regarding the deteriorating effect of age on adolescents’ HRQoL, as an earlier one-year follow-up of healthy adolescents showed recalibration effects of some HRQoL domains (19), and adolescents’ chronological age and biological maturation, measured by bone age, were found to have different effects on some HRQoL dimensions (20). Moreover, among normal weight girls, biological maturation, measured by percentage of predicted adult height, was reported to be a confounding factor between chronological age and general HRQoL (21).

As postulated in our third hypothesis, the mean 16D score of boys was better than that of girls. This finding is in line with a recent Finnish study (17) and several other studies from all over the world (6,14-16,22,23). This gender difference has been associated with physiological and psychological vulnerability of adolescent girls, as well as with the social demands that girls encounter (6,24). It is also known that adolescent girls express better self-observation readiness than boys. For example, studies using the Youth Self-Report (YSR) instrument by Achenbach and Rescorla (25) have repeatedly found that girls report more problems in their emotional and behavioural functioning than boys (26,27). In agreement with previous studies by Bisegger et al. (24), Michel et al. (6) and Svedberg et al. (15), girls from the 2013 sample disclosed substantially more depression, distress and dissatisfaction with their physical appearance than boys.

STRENGTHS AND LIMITATIONS

An obvious strength of this study is that it reports adolescents’ own perceptions of their quality of life. This is important since it has previously been shown that HRQoL ratings of parents correlate weakly, or at best moderately, with the ratings of their offspring (28,29). Furthermore, the study instrument was originally developed for adolescents and it has shown good psychometric properties (7). However, the samples were collected from the capital city area of Finland, and this might limit the generalizability of our findings to the whole country.

CONCLUSIONS

Our data provides updated population reference values for the 16D HRQoL instrument, and shows that positive development in HRQoL that has been reported in middle-aged and older people has not taken place in adolescents. Our results confirm the earlier finding of substantially better HRQoL in adolescent boys than in girls and that the 16D scores on average deteriorate as age increases.
Comparative study of health-related quality of life among Finnish 12- to 15-year-old adolescents in 1996 and 2013

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References


QUETIAPINE USE BEFORE EIGHTEEN YEARS OF AGE AMONG FORMER ADOLESCENT PSYCHIATRIC INPATIENTS IN NORTHERN FINLAND

ABSTRACT

The use of antipsychotics among children and adolescents has increased in Finland, as it has worldwide. Quetiapine is the second most common antipsychotic prescribed to children and adolescents in Finland, after risperidone. Unlike risperidone, quetiapine has no licensed indication for use in children or adolescents. We examined indications for the prescription of quetiapine to adolescent psychiatric inpatients aged under 18 years.

The data covers a clinical sample of 508 adolescents, who were admitted for psychiatric inpatient treatment, between the ages 13–17 years, from April 2001 to March 2006. The psychiatric diagnoses leading to quetiapine prescription were searched from national healthcare registers, provided by the Finnish National Institute for Health and Welfare. The information on purchases of quetiapine, and other psychotropic medications, was obtained from the national register of prescribed medicines, provided by the Social Insurance Institution of Finland.

Of the 49 adolescents who had purchased quetiapine before 18 years of age, a total of 32 (65.3%) had an indication for psychotic disorder and 5 (10.2%) for an affective disorder. A total of 12 (24.5%) were defined as being off-label users of quetiapine. Two-thirds of adolescents defined as off-label users of quetiapine had been diagnosed with conduct disorder during index hospitalization. In addition, they were often impulsive, had suicidal behaviour or behavioural instability.

The prescription trends of quetiapine in youngsters mainly followed the official indications for quetiapine in adults. This symptomatic use of quetiapine is explained by a belief that it is both less addictive than benzodiazepines and has a lowering impact on suicidal behaviour.

KEYWORDS: ADOLESCENT, OFF-LABEL, PSYCHIATRIC INPATIENT, QUETIAPINE
INTRODUCTION

Antipsychotic use among children and adolescents has increased in the past ten years in Finland, as it has in many other Western countries such as the United States, Canada and Denmark (1-5). In Finland, very few antipsychotics are licensed for use in children (1). After risperidone, quetiapine is the second most commonly prescribed antipsychotic used for children and adolescents in Finland (6). In 2015, only 11% of those under 18 years of age who were prescribed an antipsychotic suffered from psychosis or bipolar disorder that included psychotic symptoms. Most of the antipsychotic prescriptions were dispensed off-label. The percentage of antipsychotic users who suffer from psychosis has gradually decreased since 2008, when 19% of the under 17-year-old users of antipsychotics were prescribed reimbursable medications, indicating that they suffered from a psychotic disorder (6).

Quetiapine should always be prescribed with caution in children and adolescents and the duration of use should be kept to a minimum, because they may be at higher risk of experiencing side effects compared to adults (6,7). Different studies have proposed that antipsychotics may cause more severe hyperprolactinaemia in adolescents, and that minors may be at higher risk of significant weight gain and glucose and lipid abnormalities associated with atypical antipsychotics, compared to adult populations (7-9). Antipsychotics also increase the risk of neurological side effects in paediatric populations (10). Because of this, young patients should always be closely monitored for the development of these adverse side effects. Only a few studies have systematically monitored the short- and long-term safety of atypical antipsychotics in children and adolescents (9). Quetiapine is not recommended for first-line treatment in children and adolescents, because of the lack of detailed information on its use in this age group (6).

Children were prescribed antipsychotics for attention-deficit hyperactivity disorder, anxiety or mood disorders (13).

Quetiapine is not licensed for use in minors in Finland, unlike risperidone, which is one of the few antipsychotics to have a license for use in children (1). However, in clinical practice quetiapine is used to treat various psychiatric symptoms in children and adolescents. The aim of this study is to investigate the use of quetiapine among adolescents with severe mental disorders. The study population consisted of a group of young psychiatric inpatients, whose psychiatric treatment episodes after discharge, and use of quetiapine, were followed until the age of eighteen years by linking the data to the information from national healthcare registers.

METHODS

STUDY POPULATION

This study is a part of the STUDY-70 project, which is a clinical study initiated in 2001 to examine the associations of several psychosocial risk factors with different psychiatric disorders. The study population consists of 508 minors (208; 40.9% male and 300; 59.1% female), who were admitted to psychiatric Unit 70 at Oulu University Hospital between April 2001 and March 2006 (referred to here as index hospitalization). Unit 70 treats all 13- to 17-year-old adolescents in need of acute psychiatric hospitalization in Northern Finland. The patients who were 18 years or older, had a diagnosis of a mental retardation, had an organic brain disorder or whose inpatient stay was too short for their interviews to be completed were excluded from the study population. 83.7% of the eligible adolescents (n=607) participated in the study. The study protocol was approved by the Ethics Committee of Oulu University Hospital.

RESEARCH INSTRUMENTS

To evaluate DSM-IV psychiatric disorders, all adolescent inpatients were interviewed during their hospitalization using the semi-structured Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime (K-SADS-PL) (14). Details from the parents' or guardians' K-SADS-PL interviews were used to complete information missing from the adolescents’ interviews. The interviews were conducted by the treating physician or by trained medical students.
NATIONAL REGISTERS

To explore the possible diagnoses that led to quetiapine prescriptions, we used the Care Register for Health Care (CRHC) (15), provided by the Finnish National Institute for Health and Welfare (THL). Details of outpatient admissions for specialized-level care were available from 1998 to the end of 2016. Diagnoses in CRHC were based on ICD-9 classification before 1996, and on ICD-10 classifications from 1996 onwards (15).

Information about quetiapine and other psychotropic medicine purchases (ATC: N02-, N03-, N05-, N06- and N07B-) among the study population was obtained from the Social Insurance Institution (SII) of Finland. The information of purchases was available from 1999 to the end of 2012 (16).

QUETIAPINE PURCHASES

From the study population, we identified those adolescents who had purchased quetiapine before the age of 18 (n=49). Both the number of quetiapine purchases and the age at first purchase were obtained from the SII of Finland. SII also provided information on whether a patient had bought other psychotropic drugs before quetiapine. From the CRHC, we searched diagnoses for psychotic disorders before quetiapine purchase. If a patient did not have a diagnosis, we selected the psychiatric diagnosis the patient had prior to their purchase of quetiapine (purchase-related diagnosis). We grouped the patients into three different indication groups according to the diagnoses they had prior to purchasing quetiapine: psychotic disorder, affective disorder and off-label. This grouping was based on adult official licensing for quetiapine: psychotic disorder, affective disorder and off-label. This grouping was based on adult official licensing for quetiapine use in Finland, although all usage is “off-label” among minors.

The psychotic disorder group (n=32) consists of patients with the following diagnoses: F20, F25 (Schizophrenia spectrum disorders, n=6), F22 (Delusional disorders, n=2), F21 (Schizotypal disorders, n=2), F23 (Brief psychotic disorder, n=3), F28 (Other specific psychotic disorder, n=2), F29 (Unspecified or other psychotic disorder, n=14), F31.2 (Bipolar disorder, current episode manic severe with psychotic features, n=2) and F32.3 (Major depressive disorder, severe with psychotic features, n=1). In the affective disorder group (n=5), patients with following diagnoses were included: F31.9 (Bipolar disorder, unspecified, n=2) and F32.2 (Major depressive disorder, single episode, severe without psychotic features, n=3). The Off-label group (n=12) contains patients with the following diagnoses: F32.1 (Major depressive disorder, single episode, moderate, n=3), F41.2 (Mixed anxiety and depressive disorder, n=1), F41.9 (Anxiety disorder, unspecified, n=1), F43.1 (Post-traumatic stress disorder (PTSD), n=1), F84.8 (Other pervasive developmental disorder, n=1), F92.0 (Depressive conduct disorder, n=2), F93.8 (Other childhood emotional disorders, n=1), F98.0 (Non-organic enuresis, n=1) and F98.8 (Other specified behavioural and emotional disorders with onset usually occurring in childhood and adolescence, n=1).

CLINICAL CHARACTERISTICS DURING ADOLESCENTS’ INDEX HOSPITALIZATION

Reasons for index hospitalization were based on the information gathered using the semi-structured admission form at admission to psychiatric unit 70. Index diagnoses are those DSM-IV diagnoses that the patients fulfilled in the K-SADS-PL interviews during index hospitalization. Multiple diagnoses for one patient were possible (17).

Information on non-suicidal self-injury (NSSI), suicidal ideation and suicide attempt was based on the items in the screening section for depressive disorders in the K-SADS-PL interview. In this study NSSI, suicidal ideation and suicide attempt were defined as being present if the threshold level of an item was met. Any self-damaging act without the intent to die that had occurred at least 4 times a year or caused serious injury to self, met the threshold criterion for NSSI. Those adolescents who were classified as having suicidal ideation, had planned the method of suicide and had recurrent suicidal thoughts. The threshold criterion for suicide attempt was achieved if the adolescent had recently harmed her- or himself with the intention of dying or the self-harm had been life-threatening.

Impulsivity in adolescence was defined based on one question derived from the screening section in the K-SADS-PL interview. An adolescent was asked whether they had ever, during their lifetime, often acted before thinking and if there had ever been a time when this kind of behaviour caused trouble. In this study, the threshold value for impulsivity was met if the adolescent was often impulsive and the problem had a moderate to severe effect on functioning.

K-SADS-PL interview also provided information about the adolescents’ family structure/living environment prior to index hospitalization. Four family structure subgroups were created, based on the interview information: two biological parents, one biological parent with or without married/cohabiting partner, child welfare placement and other (alone, residential home or foster family). Other covariates in this study, obtained from the K-SADS-PL interview, included...
adverse life-events including: witnessing domestic violence (yes/no), physical abuse by parents (yes/no) and victim of sexual abuse (yes/no).

**FOLLOW-UP INFORMATION**

Diagnoses for personality disorders (ICD-9: 301, ICD-10: F60), after the index hospitalization period until the end of 2012, were based on in- and outpatient information obtained from the CRHC and reviewed according to the DSM-IV-TR criteria by an experienced psychiatrist (LK). The validation of personality disorders has been described in more detail earlier (18).

**STATISTICAL METHODS**

Group difference in categorical variables was examined with Pearson Chi-square or Fisher’s Exact test and, in continuous variables, using Student’s t-test. All statistical tests were two-tailed and a limit for statistical significance was set at $p<0.05$. Statistical analyses were performed using IBM SPSS version 23 for Windows.

**RESULTS**

Of the 49 adolescents who had used quetiapine by the age of 18, 32 (65.3%) had received a diagnosis of psychotic disorder and 5 (10.2%) a diagnosis of affective disorder before their first quetiapine purchase. A total of 12 (24.5%) were defined as being off-label users of quetiapine, according to the official indications for quetiapine use in adults.

*Table 1* shows the adolescence-related sociodemographic and clinical characteristics of the study subjects by three different indication groups. Age (in years) at first quetiapine purchase did not differ between indication groups for psychotic disorder (mean=15.8, SD=1.3), affective disorder (16.2, 0.8) and off-label (15.7, 1.1) ($p=0.708$).

In the psychotic disorder indication group, 56.3% of the adolescents had fulfilled the DSM-IV criteria for that disorder during their index hospitalization ($p=0.001$). Further, affective disorder during index hospitalization was the most common diagnosis, both in the affective disorder indication group (80.0%) and among off-label users of quetiapine (75.0%) ($p=0.007$). The great majority of off-label users (66.7%) had been diagnosed with conduct disorder during index hospitalization ($p=0.026$). Half of the off-label users displayed impulsivity during index hospitalization ($p=0.001$).

*Figure 1* demonstrates the use of psychotropic medication before first quetiapine purchase by the study groups. There was no statistically significant difference between the three indication groups for quetiapine in the preceding use of mood stabilizers ($p=0.492$), antipsychotics ($p=0.754$), antidepressants ($p=0.052$) and other psychotropic medication ($p=0.132$) as well as among those without any previous psychotropic medication ($p=0.163$). Of note, however, is that most patients in the affective disorder indication group (80.0%) had used antidepressants prior to their first purchase of quetiapine.

*Table 2* presents the case characteristics of those study subjects defined as being off-label users of quetiapine. Only three of the off-label quetiapine users had psychotic symptoms as a reason for adolescent psychiatric admission, and only one fulfilled the diagnostic criteria for psychotic disorder. NSSI, suicidal behaviour and impulsivity were common among off-label users. One third of the off-label users was diagnosed with personality disorder later in life, all being women.
Table 1. Sociodemographic and clinical characteristics of study subjects assessed during their psychiatric inpatient hospitalization at ages 13–17 years in relation to quetiapine use before 18 years of age.

<table>
<thead>
<tr>
<th>Indication group for quetiapine prescription</th>
<th>Psychiatric disorder (n=32)</th>
<th>Affective disorder (n=12)</th>
<th>Off-label (n=49)</th>
<th>Total (n=49)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male gender, n (%)</td>
<td>13 (40.6)</td>
<td>1 (12.5)</td>
<td>5 (41.7)</td>
<td>19 (38.8)</td>
<td>0.814</td>
</tr>
<tr>
<td>Age at admission, mean (SD)</td>
<td>15.1 (1.3)</td>
<td>15.0 (1.4)</td>
<td>14.9 (1.3)</td>
<td>15.0 (1.3)</td>
<td>0.949</td>
</tr>
<tr>
<td>Family type, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two biological parents</td>
<td>14 (43.8)</td>
<td>3 (60.0)</td>
<td>3 (25.0)</td>
<td>20 (40.8)</td>
<td>0.364</td>
</tr>
<tr>
<td>One biological parent</td>
<td>5 (15.6)</td>
<td>1 (20.0)</td>
<td>3 (25.0)</td>
<td>9 (18.4)</td>
<td>0.746</td>
</tr>
<tr>
<td>Child welfare placement</td>
<td>8 (25.1)</td>
<td>1 (20.0)</td>
<td>5 (41.7)</td>
<td>14 (28.6)</td>
<td>0.497</td>
</tr>
<tr>
<td>Other type of home environment</td>
<td>5 (15.6)</td>
<td>0 (0)</td>
<td>1 (8.3)</td>
<td>6 (12.2)</td>
<td>1.000</td>
</tr>
<tr>
<td>Psychiatric disorders in adolescence, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychotic disorder</td>
<td>18 (56.3)</td>
<td>1 (20.0)</td>
<td>0 (0.0)</td>
<td>19 (38.8)</td>
<td>0.001</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>5 (15.6)</td>
<td>2 (40.0)</td>
<td>3 (25.0)</td>
<td>10 (20.4)</td>
<td>0.304</td>
</tr>
<tr>
<td>Affective disorder</td>
<td>10 (31.3)</td>
<td>4 (80.0)</td>
<td>9 (75.0)</td>
<td>23 (46.9)</td>
<td>0.007</td>
</tr>
<tr>
<td>Conduct disorders</td>
<td>11 (34.4)</td>
<td>0 (0)</td>
<td>8 (66.7)</td>
<td>19 (38.8)</td>
<td>0.026</td>
</tr>
<tr>
<td>Substance use disorders</td>
<td>11 (34.4)</td>
<td>1 (20.0)</td>
<td>5 (41.7)</td>
<td>17 (34.7)</td>
<td>0.816</td>
</tr>
<tr>
<td>Any personality disorder (PD)*, n (%)</td>
<td>5 (15.6)</td>
<td>3 (60.0)</td>
<td>4 (33.3)</td>
<td>12 (24.5)</td>
<td>0.071</td>
</tr>
<tr>
<td>Schizotypal PD</td>
<td>0 (0)</td>
<td>1 (20.0)</td>
<td>0 (0)</td>
<td>1 (2.0)</td>
<td>0.102</td>
</tr>
<tr>
<td>Borderline PD</td>
<td>3 (9.4)</td>
<td>2 (40.0)</td>
<td>3 (25.0)</td>
<td>8 (16.3)</td>
<td>0.114</td>
</tr>
<tr>
<td>Other PD</td>
<td>2 (6.3)</td>
<td>0 (0)</td>
<td>1 (8.3)</td>
<td>3 (6.1)</td>
<td>1.000</td>
</tr>
<tr>
<td>Suicidal behaviour, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suicide ideation</td>
<td>16 (50.0)</td>
<td>3 (60.0)</td>
<td>7 (58.3)</td>
<td>26 (53.1)</td>
<td>0.910</td>
</tr>
<tr>
<td>Suicide attempt</td>
<td>6 (18.8)</td>
<td>1 (20.0)</td>
<td>4 (33.3)</td>
<td>11 (22.4)</td>
<td>0.674</td>
</tr>
<tr>
<td>Non-suicidal self-injury</td>
<td>14 (43.8)</td>
<td>2 (40.0)</td>
<td>6 (50.0)</td>
<td>22 (44.9)</td>
<td>0.910</td>
</tr>
<tr>
<td>Impulsivity, n (%)</td>
<td>1 (3.1)</td>
<td>1 (20.0)</td>
<td>6 (50.0)</td>
<td>8 (16.3)</td>
<td>0.001</td>
</tr>
<tr>
<td>Witness to domestic violence, n (%)</td>
<td>11 (34.4)</td>
<td>2 (40.0)</td>
<td>7 (58.3)</td>
<td>20 (40.8)</td>
<td>0.327</td>
</tr>
<tr>
<td>Victim of physical abuse, n (%)</td>
<td>6 (18.8)</td>
<td>0 (0.0)</td>
<td>5 (41.7)</td>
<td>11 (22.4)</td>
<td>0.143</td>
</tr>
<tr>
<td>Victim of sexual abuse, n (%)</td>
<td>8 (25.0)</td>
<td>1 (20.0)</td>
<td>2 (16.7)</td>
<td>11 (22.4)</td>
<td>0.873</td>
</tr>
</tbody>
</table>

* Personality disorders at age 16 or above, follow-up information. Other PD includes other specific PD (F60.8) and PD nos (F60.9)
Table 2. Case characteristic of the study subjects defined as being off-label users of quetiapine.

<table>
<thead>
<tr>
<th>Id</th>
<th>First purchase of quetiapine</th>
<th>Characteristics assessed during index hospitalization between the ages 13-17 years</th>
<th>Personal disorder (PD) at age 16 or above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
<td>Reason for admission</td>
<td>Psychiatric disorders</td>
</tr>
<tr>
<td>1</td>
<td>16, F</td>
<td></td>
<td>Depressive and psychotic symptoms, substance use</td>
</tr>
<tr>
<td>2</td>
<td>15, M</td>
<td>MDD (single episode, moderate)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>17, M</td>
<td>Suicidality, NSSI</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>16, M</td>
<td>Anxiety</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>15, F</td>
<td>Anxiety</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>15, M</td>
<td>PTSD</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>13, M</td>
<td>Other pervasive developmental disorder</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>17, F</td>
<td>Depressive conduct disorder</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>16, M</td>
<td>Depressive and behavioural symptoms</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>15, F</td>
<td>Psychological symptoms</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>15, M</td>
<td>Non-organic enuresis</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>13, F</td>
<td>Other specified behavioural and emotional disorder (onset in childhood and adolescence)</td>
<td></td>
</tr>
</tbody>
</table>

N = Male, F = Female, NSSI = Non-Suicidal Self-Injury, MDD = Major depressive disorder, ADHD = Attention-Deficit Hyperactivity Disorder, PTSD = Post-traumatic Stress Disorder
Figure 1. The use of psychotropic medication before the first purchase of quetiapine, by indication groups.
DISCUSSION

A major finding in our study of former adolescent psychiatric inpatients was that most prescriptions of quetiapine to adolescents aged under 18 were given in accordance with the licensed indications for its use in adults, and only one fourth of prescriptions were used off-label. In a Norwegian study that covered all prescriptions in the entire Norwegian population, except those given in institutions, the most common diagnoses among 0–18-year-old male quetiapine users were hyperkinetic disorder (44.6%), anxiety disorder (28.5%) and depressive illness (25.3%), and in girls, anxiety disorder (57.1%), depressive illness (52.4%) and schizophrenia-like psychosis (29.3%) (19). These results are in line with our findings, with exception of hyperkinetic disorder. Additionally, in our study population, a notably high number (66%) of adolescents in the off-label indication group were diagnosed with conduct disorder during their index hospitalization. Only 11% of Finnish children and adolescents using antipsychotics were reported as suffering from an affective disorder or/and conduct disorder (6). In that study, however, only the overall use of antipsychotics was analysed, while in our study we focused on quetiapine, which was prescribed for their medication (6). In that study, however, only the overall use of antipsychotics was analysed, while in our study we focused on quetiapine, which was prescribed in accordance with adult indications among 75% of the adolescents.

In our study population, more than half of the patients in the affective disorder indication group, and one third of the patients in the off-label indication group were diagnosed with a personality disorder after they turned 16. Furthermore, 67% of all quetiapine users with a personality disorder suffered from borderline personality disorder.

We suggest that adolescent patients with a developing personality disorder may be prescribed quetiapine even before they are given a diagnosis. We believe this is because antipsychotics are frequently used in the management of mood instability in patients with borderline personality disorder, and not just for psychotic symptoms (20). Patients with borderline personality disorder may also suffer from brief psychotic reactions (21), which may justify antipsychotic medication use. Additionally, quetiapine may possess potential benefits as a suicide risk-reducing drug among impulsive youths who are developing borderline personality disorder (22).

Another finding in our study was that a notable number of adolescents in the off-label group were diagnosed as suffering from an affective disorder or/and conduct disorder during their index hospitalization. The off-label group was also characterized by impulsivity and suicidal behaviour in adolescence. In the treatment of young patients, psychotropic medications are targeted to specific disorders or for controlling different symptoms of mood and behavioural instability, such as aggression, impulsiveness, fears and self-injurious behaviour (23). This is in line with our study results, since 50% of patients in our off-label indication group were impulsive and 7 out of 12 had a history of suicidal behaviour.

A strength of our study is that details of psychotropic medicine purchases were extracted from the national register of purchase of medicines. The Care Register of Health Care provided us with detailed information on the adolescents’ psychiatric treatment periods, covering the whole lifespan of the study subjects (24,25). During index hospitalization, between the ages 13–17 years, adolescents’ psychiatric disorders were carefully determined using the semi-structured diagnostic K-SADS-PL interview, which has been shown to have good psychometric properties for screening DSM-IV diagnoses in adolescents (14).

A limitation of our study is that all of the adolescents in this study were psychiatric inpatients, so the results could differ in adolescents treated in outpatient care. Our data did not include information on the patients’ sleep disturbances, which we see as a weakness of the study, because quetiapine is commonly prescribed to children and adolescents for this condition, in order to avoid benzodiazepine use. A further weakness of our approach is that the definition of diagnoses for quetiapine purchases in the off-label group were assumed to be the diagnoses just before the purchase in the CRHC, because we did not have access to the patients’ medical records.

In conclusion, compared to the findings in previous literature, our study confirms that quetiapine prescriptions for youngsters are made in accordance with the treatment practices used for adults. Those children and adolescents who are prescribed quetiapine off-label were often impulsive, had demonstrated suicidal behaviour or were behaviourally unstable. We believe that this symptomatic use of quetiapine is explained by the fact that it is believed to be less addictive than benzodiazepines and to have a lowering impact on suicide risk.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

Quetiapine use before eighteen years of age among former adolescent psychiatric inpatients in northern Finland

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References


ABSTRACT

The presence of psychiatric disorders among high-level politicians and military leaders has been noted in historical studies and in the media. This article focuses on political and military leadership in Finland during the wartime period of 1939-1944 and to 1981. The historical literature contains well-described cases, but lacks properly designed studies focusing on epidemiological and medical issues. High-level leadership is demanding and stressful during wartime, but has also been in general over the past several decades. Leadership positions do not necessarily facilitate early detection of and intervention in mental disorders. In the media, psychiatrists should ensure that people with mental illness are treated in a manner which preserves their dignity. Commonly accepted ethical principles stress that psychiatrists should not make announcements to the media about presumed psychopathology and diagnosis of any individuals. For a psychiatrist, the care of these eminent persons presents a clinical challenge that requires experience, clinical skills and multidisciplinary team work, usually within the occupational health system.

Emperor Nero burned Rome – modern leaders may burn the whole world. While unstable dictators mainly belong in history books, democracy and decentralized power do not always offer protection against such leaders. This article focuses on Finnish heads of state and military leaders, particularly from 1939 to 1981.

The state of health of those working in demanding positions, such as soldiers, can be monitored; the President of Finland is also the commander-in-chief of the Finnish Defence Forces. The state of health of soldiers, including their mental health, must fulfil specific requirements. Most likely, no standard models to monitor or treat the mental health of high-level leaders exist. Only limited research data is available in this area.

I have previously written an article in Finnish of the mental health of top executives (1). The bibliography of this article lists key sources (in Finnish) of the medical records of Finland’s Presidents and military leaders during Finland’s wars.

KEYWORDS: MENTAL DISORDERS, DIAGNOSIS, HIGH-LEVEL LEADERSHIP, ETHICS, TREATMENT
FINLAND’S GOVERNMENTAL AND MILITARY LEADERS

In Finland, the president has held significant powers since our independence (1917). The term of office is a long one (six years) and it is limited to two terms. The president was previously elected by an electoral college or, in irregular situations, by members of Parliament. Since 1991, the president has been elected by a direct popular vote. The president’s powers have decreased, in particular, through the amendments to the Constitution of Finland in 2000 and 2012, while the powers of the prime minister and Parliament have increased.

Finland has had 12 presidents. The significant power, together with the state of health and functional capacity, of Finland’s presidents with their long terms of office have had a significant impact, especially on decisions made during times of crisis and war. Previously, the health of a president was largely taboo, a forbidden topic, even though presidents were often elderly men with different illnesses. Following President Kekkonen’s term (1956–1981), which was coloured by major health problems during the final years, the state of health of Finland’s presidents has been discussed more openly in public and some presidents have even reported on their health.

During the most recent presidential election in 2018, a test of cognition and resistance to pressure, the general state of health of the eight candidates was discussed, but their mental health was not. Should it have been discussed? Yes, and no. Mental health may have a significant impact on the president’s ability to work. However, people in high-level positions also have the right to personal protection, including privacy.

Being a small country, Finland has been in a difficult geopolitical position between large superpowers. The key mission of politicians and soldiers has been to protect and maintain their country’s independence and the freedom and welfare of its citizens. In this article, I will discuss the health not only of top politicians, but also of leading soldiers during Finland’s wars.

MEDICAL RECORDS IN BIOGRAPHICAL RESEARCH

An expert description of the medical history of influential persons can offer valuable information about the content of diagnoses and treatment and the impact of illnesses. In Finland, the obligation to keep medical records confidential continues even after the patient has died. Descriptions must be based on public documents and their strict source criticism.

One methodological challenge is to find reliable sources and reduce the inaccuracy of retrospective diagnoses (2–6). Finnish historical research of the health of top leaders has been relatively exhaustive (1, 6), while epidemiological and medical research and descriptions of symptoms have often been incomplete (3, 4). Therefore, precise diagnoses (e.g. psychosis, neurocognitive disorder, memory disorder, stress disorder or normal exhaustion/fatigue) are not often easy or possible retrospectively.

DIAGNOSTICS OF MENTAL DISORDERS AND THEIR IMPACT ON FUNCTIONAL CAPACITY

Current psychiatric classifications of diseases and disorders (mainly DSM and ICD) have been prepared for diagnostics and treatment. Psychiatric diagnoses are criteria-defined questions based on symptoms, the amount of suffering and decreases in functional capacity. In the world of politics, any irregular behaviour is not mainly regarded as a mental disorder. Psychiatric diagnoses can rarely explain political insanity. There are exceptional leaders who do not meet diagnostic criteria for certain disorders. Such exceptional individuals seem to be increasingly successful when new leaders are selected.

Psychiatric diagnoses should be applied to clinical work, study of the mental state, assessment of the ability to work, privilege and responsibility, the development of treatment, the assessment and comparison of prevalence, and to scientific research. Any improper use will lower their value and limit their application. A proper diagnosis is based on reliable documented data, clinical competence and thorough clinical research: psychiatrist William Carpenter interviewed John Hinckley, who tried to kill President Reagan, 45 hours before his testimony in court.

Different forms of psychosis often involve the loss of the sense of reality and cognitive deterioration. These usually have a significant impact on functional capacity. Non-psychotic disorders are common and they may involve a notable decrease in functional capacity. Post (4) analysed the mental health (DSM-III-R criteria) of 50 top politicians using biographical data and discovered a significant amount (58%) of mild-to-severe psychopathology, mainly depression (41%), somatic symptom disorders (33%) and anxiety (22%).

The prevalence of brain disorders, such as strokes and
memory disorders, or of their pre-condition, cognitive impairment, increases among the older population. The older age and long terms of top leaders also expose them to increased risks of these disorders during their term of office. Common symptoms among the older population include a mild memory loss, an uneven or impaired cognitive state, impulsiveness and mood swings. These symptoms can be part of the normal ageing process, but also as signs of a memory disorder, substance abuse or depression. Expert psychiatric, neurological and neuropsychological examination offers more information about the health and performance of the brain.

MENTAL HEALTH AND FUNCTIONAL CAPACITY OF US PRESIDENTS BETWEEN 1776–1974

A study of US presidents (3) was based on biographical data and the fulfilment of diagnostic-based criteria. Two experienced evaluators defined diagnoses and prepared a structured and independent estimate of their reliability and impact on functional capacity.

In this study, half of all US presidents (between 1776 and 1974) were diagnosed with a psychiatric disorder (DSM-IV), which adversely impacted on the job performance of half of those who were affected (i.e. one quarter of all presidents). The most common diagnoses were depression (24%), anxiety (8%), bipolar disorder (8%) and alcoholism (8%). These figures do not largely differ from the prevalence of these conditions in the general population.

WHAT ABOUT THE HEALTH OF FINNISH PRESIDENTS BETWEEN 1919 AND 1981?

As a researcher of psychiatric diagnostics and an enthusiast of political history, I conducted a diagnostic assessment, similar to that carried out in the study of US presidents (3), of Finland’s first eight presidents, from Ståhlberg (term of office from 1919 to 1925) to Kekkonen (from 1956 to 1981). I obtained information about the state of health and functional capacity from biographical studies that I considered to be reliable (1).

Finland’s presidents have been strong personalities, some even peculiar, such as temperamental Paasikivi (from 1946 to 1956). I did not discover any disorders that would have satisfied the DSM-IV or ICD-10 criteria, especially at the beginning of the term. Some presidents had difficulties towards the end of their term, mainly due to physical illnesses, stress and ageing.

Older age and poor health started to put a strain on hard-working, poorly educated but politically experienced Kyösti Kallio (1873–1940, term of office 1937–1940) after he turned 60. He had been plagued by illness since the spring of 1938, and was ill or recovering for a total of six months during his term. After the Winter War (1939–1940), Kallio suffered cerebral infarction in August 1940 and was unable to work for four months. His substitute was Prime Minister Risto Ryti, who forced Kallio to step down from his position in November 1940.

Risto Ryti (1889–1956, term of office 1940–1944) faced extreme pressures during his presidency, especially during the final stages of the Continuation War (1941–1944), when the Soviet Union launched its major assault and the process of finding peace was difficult. He did not lose control over his nerves or break under pressure, but he felt tired, became passive and relied on the spiritualism that was important to his wife, but this interest probably did not influence his political decisions.

The presidency of Carl Gustav Emil Mannerheim (1867–1951, term of office 1944–1946), Marshal of Finland, commander-in-chief 1918 and 1939-1944, was characterized by Finland’s withdrawal from wars and heavy peace negotiations. Nervousness, capriciousness, indecisiveness, states of fear, continuous illnesses, impaired memory and defective judgment, in particular, shadowed the end of his term. His physician, internal medicine specialist Lauri Kalaja, already found Mannerheim to be unable to continue in office at the end of 1944 and at the beginning of 1945. However, Mannerheim stepped down from office, reluctantly, in March 1946. During 1946-1951 he was often in poor health but wrote his memoirs supported by a small team – and had until his death a new girlfriend, Countess Argo Valley.

The later years of the excessively long presidency of Urho Kekkonen (1900–1986, term of office 1956–1981) was coloured by an increasingly visible memory disorder. Its progress into severe brain disease and impact on Kekkonen’s ability to work are described in the statement of professor and neurologist Erkki Kivalo issued on 1st February 1992 (1).

At the end of their terms, Kallio and Kekkonen suffered from a brain disease that led to a neurocognitive disorder. Somatic symptom disorders, stress and older age had a significant impact on Mannerheim’s presidency and led to a notable loss of cognitive performance. According to my evaluation, Ryti’s symptoms do not meet the criteria set for DSM-IV or ICD-10 disorders.
The presidency was particularly stressful during Finland’s war years and when presidents were in possession of significant powers. Three of the eight studied presidents (Kallio, Mannerheim and Kekkonen) were ill during the final stages of their presidency in a manner that decreased their performance and the fulfilment of their duties. This is roughly the same percentage as in the study of US presidents (3) and among the general population. Physical illnesses were the main causes of a deteriorated functional capacity, not psychiatric disorders, as was observed among US presidents. Ryti’s well-timed resignation was mainly based on political reasons, but also partly on health-related reasons. The resignations of Kallio, Mannerheim and Kekkonen were delayed due to severe illnesses, as well as indecisiveness, a difficult political situation, strong powers and a lack of support from advisors and political decision-making system.

**PRESIDENTS FOLLOWING KEKKONEN**

Since Kekkonen stepped down from office in 1981, Finland has had four presidents: Mauno Koivisto, Martti Ahtisaari, Tarja Halonen and Sauli Niinistö. I do not consider it to be ethically acceptable to evaluate their state of health. I do not have proper authorisation: they and their relatives are not ethically acceptable to evaluate their state of health. I do not have proper authorisation: they and their relatives are not mere historical figures. What is more, the amount of publicly available medical records is fairly limited, even though some of them have made some medical records and statements public. However, the publicly available information strongly suggests that health has not limited their functional capacity during their term of office. The first three fully served presidents had a strong societal presence after their presidency. Ahtisaari also won the Nobel Peace Prize. Three of these four were elected for a second term, while Ahtisaari decided not to run for re-election.

Kekkonen’s problems with his health and functional capacity during his later years led to extensive political debate, even innovations, and discussion in the media about the state of health of his successors. Some presidents made brief medical statements public from time to time. Health factors may have also had an impact on the decrease in the president’s powers and the corresponding increase in the powers of the prime minister and Parliament during the 2000s.

The challenges facing Finland’s prime minister and other top leaders have not decreased, despite a decreased threat of a war: global problems, climate change, terrorism, external, internal and military tensions, media, round-the-clock readiness, elections and rapid changes in the operating environment. Normal physiological exhaustion (not a diagnosis or illness) may be a consequence and, if untreated, the cause of more serious problems. Six years is a long time to serve, particularly for older people. Therefore, it should be considered that the term of office of Finland’s president be reduced to four years.

The position of the prime minister has strengthened in Finland. The goal is that a single government and prime minister would rule throughout the four-year term, although this has not always been the case. An increasing amount of attention has been paid to the health and functional capacity of the prime minister, other ministers, top civil servants and military leaders.

**MENTAL HEALTH OF MILITARY LEADERS DURING FINLAND’S WARS**

Finland’s challenging history and geopolitical position are main reasons for the many wars: Finnish Civil or Independence War in 1918, Winter War from 1939 to 1940, Continuation War from 1941 to 1944 and Lapland War from 1944 to 1945. The military institution and military leaders have been integral parts of society. The health problems and symptoms of individual military leaders have been reported in historical studies (1,5,6), whereas not much epidemiological nor medical research data is available.

Warfare is cognitively and emotionally demanding and stressful. Stress comes from the complexity and unpredictability of command (5), responsibilities, chaos, a lack of sleep, the nerve-racking basic mission (killing and ordering people to kill), poor leadership and people skills, fear and a lack of nutrition, physical exercise, human relations and hygiene. The heavy use of alcohol had an impact on the functional capacity of Finland’s top military leaders, all the way to commander-in-chief Mannerheim (6). In war, the goal is victory and defeating and destroying the enemy, and even victory can be very stressful. There are rarely any winners in a war.

The destiny of the homeland causes worry in the face of an overwhelming enemy demanding surrender. What about one’s home and relatives? Between 1939 and 1944, some 20 top politicians and soldiers lost their next of kin, mostly their sons who fought in one of Finland’s wars. Even though military activities were focused on the eastern border, bombardments extended to all parts of the country, and the deployment of some half a million men had a significant impact on society as a whole.
Where do soldiers find the strength to face major challenges, even death? Key sources of strength and resilience include education (the majority of Finland’s military leaders were trained at foreign military academies), collegiality, discipline, patriotism, religion, traditions, camaraderie, home and family.

During Finland’s wars between 1941 and 1944, there were relatively few psychiatric disorders that required hospital care: some 15,700 people with an incidence of 15.8 per 1,000 people per year (7). Mainly, professional soldiers were well-prepared for the high stress and workload (7). Still, case descriptions show that many elite soldiers showed signs of exhaustion and stress, even at the highest level of command (6). Psychologically ill top soldiers were not usually treated by the wartime medical organisation; instead, their treatment was apparently improvised and took place in field conditions. According to Ponteva (7), the highest-ranking officer who received treatment for a psychological disorder in a hospital between 1941 and 1944 was a major. Only a few per cent of soldiers receiving hospital care (7,8) were officers.

### EXAMPLES OF PSYCHOLOGICAL PROBLEMS AMONG MILITARY LEADERS

Soldiers faced the most psychological problems, particularly during Finland’s attacks on the Soviet Union (from June to December 1941) and during the critical final stages (from June to September 1944) when the Soviet Union launched its major assault (7). The three cases presented below may not necessarily be representative or typical.

A few generals suffered from exhaustion and lost their functional capacity, at least temporarily (6). General Erik Heinrichs (1890–1965) was the number two man in the Finnish Defence Forces during the wars, a competent military leader, a frontline commander, a diplomat and an honorary doctor at Helsinki University who also received the Mannerheim Cross (the most esteemed Finnish military decoration). He studied at a French military academy between 1926 and 1928. He used alcohol moderately, and he performed well under pressure (6). His son, second lieutenant Martin was killed in action in 1943. Heinrichs lost his functional capacity and sense of reality in September 1944 after returning from heavy peace negotiations in Moscow. Rest and care organized by his adjutant Sutela and three days sleep after medication ordered by doctor Kalaja (personal doctor of commander-in-chief Mannerheim) helped him to get back on his feet after two weeks of sick leave. After this episode he competently performed major military, literary and political services to the fatherland. Heinrichs is a good example of how a mentally strong and well-trained soldier can have his breaking point, but also the ability to recover.

Urpo Viinikka (1920–1944), bachelor of medicine, was a military doctor at a dressing station and a military official. During the Soviet major assault in July 1944, he was “shell-shocked” and had “a nervous breakdown” and ran away in an apparently psychotic condition. He was sentenced to death for cowardice, and he was executed in August 1944 (a death sentence for cowardice was very rare and irregular). Viinikka was the only officer executed during Finland’s wars. The sentence resulted in public debate and trials, which continued after the war. It was later found to be legally valid. This case indicates how an extreme situation in a war can lead to a psychotic reaction and a total failure of the judicial system.

Eino Polón (1892–1975) was a jaeger colonel who was trained in Germany and France and who also received the Mannerheim Cross in 1942 (6). The military career of the promising captain ended in 1922 when he was forced to receive psychiatric care after he, in a psychotic condition, raped and assaulted his maid. After his recovery, he continued his military career in 1935. During the Winter War and the Continuation War, he excelled in demanding assignments on the front, even though he suffered from exhaustion and health problems (documented as poor vision) during the enemy’s major assault in June 1944, after which he was withdrawn from the frontline. His son Rolf, a young messenger, was killed in action in September 1941, and his other son, second lieutenant Tauno, died in July 1944. After the wars, Eino Polón enjoyed a significant civilian career. This case shows that it is possible to recover fully from a severe psychosis, even though it may leave more or less visible scars.

### PHYSICIANS IN MEDIA: CAREFUL OR BOLD?

Democracy, official supervision and free media do not always offer protection against illness in high-level leaders. Medical knowledge may increase self-protection through democracy. But how?

In 1964, a group of US psychiatrists stated that presidential candidate Barry Goldwater was psychologically unfit to become the president, partly due to his ideas regarding the use of nuclear weapons. The Goldwater Rule (1973) of the American Psychiatric Association states that it is unethical if a psychiatrist presents a professional opinion of a person...
who they have not examined or whose mental state they are not authorised to study.

Debate over the Goldwater Rule continues (9). The American Psychoanalytic Association considers that its members can issue a general opinion of public persons. Psychiatrist Bandy X. Lee organised a meeting over President Trump’s mental health and edited The Dangerous Case of Donald Trump: 27 Psychiatrists and Mental Health Experts Assess a President (2017).

The rules of the World Psychiatric Association (2011) (10) consider it to be unethical if a psychiatrist presents a diagnosis-related and psychopathological opinion in public. Public comments must be scientifically sound, and they must facilitate the position of patients. According to the ethical guidelines (2014) of the Finnish Medical Association (11), when appearing in public, physicians must observe proper discretion, avoid any unnecessary focus from being placed on themselves and adopt a respectful attitude towards patients. On social media, physicians must act responsibly. Physicians must form their opinions based on medical knowledge and experience.

Every physician must abide by these ethical guidelines. In general, physicians can cautiously comment, for example, on the relationship between the state of health and functional capacity, but they cannot state any public opinions of the state of health of any individual, regardless of whether or not that individual is famous. I believe that physicians should also be reserved in private opinions.

Ethical guidelines that emphasize non-disclosure are clear. However, history has taught us that great reformers often break the rules. Physicians have the right, an obligation even, to express their views in public regarding matters that are hazardous to the health, well-being and safety of the population. A politically active physician must keep separate their role as a medical expert and their role as a political influencer.

RELATIONSHIP AND PSYCHOTHERAPY BETWEEN A PHYSICIAN AND AN INFLUENTIAL PATIENT

The sweet taste of power can be intoxicating and psychologically harmful. Difficult decisions, conflicting expectations, failure and an unhealthy lifestyle add bitterness to power. It is lonely at the top – and power can always be lost. Backers may find someone else and competitors may become successful. Falling “down to Earth” can hurt, and wisely stopping, ending and retiring is not easy. Many successful people do not know when to quit or how to be a good loser if they have no safety net or backup plan. However, most top politicians have suffered major setbacks during their early careers, which leads to a professional and personal maturation. A physician may be needed, particularly when failing or losing power.

Physicians require special skills when they have an influential patient. In the light of few and methodologically incomplete studies (1,3,4), the amount of unrealized treatment is high. Confidentiality, boundaries, maintenance of professionalism and limited clinical decision-making power may set challenges for the physician/patient relationship and any psychotherapy. The high self-esteem of top leaders may prevent them from adopting the role of patient, with a healthy lifestyle, and present challenges to early diagnosis and treatment. The golden rules of preventive medicine do not always come true: the diagnosis and treatment of risks or the prevention, alleviation or postponement of disease. Examples of negative attitudes towards treatment can also be found among Finland’s presidents (1), and, for example, physicians of John F. Kennedy (12) and Adolf Hitler (13) were unable to subject their patients to treatment, leading to a drug addiction. The level of treatment received by Hitler and Stalin was low (14).

Adapting the patient’s interests to public interests may be a great challenge. Help from a colleague and teamwork help to make difficult decisions and to convince patients to accept them; this is what happened in the cases of Mannerheim and Kekkonen (1). Often, treatment requires collaboration between different special fields and shared psychiatry coordinated by occupational healthcare. In particular, cognitive and psychological disorders among the older population may arise from a physical illness. This was also the case with three Finnish presidents described above.

The threshold of influential persons to accept psychotherapy or to evaluate its necessity may be high, and there may be particular challenges in the treatment itself (1,14). These persons are often very intelligent, determined and ready for self-reflection. These are indications of a positive response to psychotherapy (15). A brief discussion or psychotherapy to evaluate or identify the current state may clarify the situation, alleviate symptoms or help to control a complex life or work situation.
EARLY DIAGNOSIS AND TREATMENT AS A GOAL

Psychological disorders suffered by top leaders often have serious consequences, leading to delays in decisions and actions. Models of early intervention should be improved by developing laws and occupational healthcare. The Finnish Mental Health Act is only applicable to severe psychoses. The 25th Amendment to the US Constitution has rarely been exercised in the case of any loss of the president’s functional capacity (3). The consequences of a lower functional capacity are based on the estimated ability to work and on political or legal discretion. In their statements, physicians estimate the impact of an illness on functional capacity.

In Finland, the occupational healthcare system is highly advanced and partly statutory. A standard practice should be defined for monitoring the health of top leaders, consisting of regular health check-ups conducted mainly by occupational healthcare services and the evaluation of mental health and, particularly among older patients, (changes in) cognitive performance. The goal should be the prevention of, or early intervention in, serious health problems, such as psychosis, delirium, substance abuse, memory disorder, severe depression, stress disorder or impulsiveness, or other highly abnormal behaviour. Such extreme situations are unusual today: the main problems faced by top leaders are most likely associated with slowly advancing depression, stress disorders, exhaustion or substance abuse. These may result from somatic symptoms or disorders. Most top leaders are currently gifted, talented and well-trained males and females in midlife, having risks of extreme stress, exhaustion and burn-out. Earlier (as discussed in this article) top leaders were old, and often sick, males. In both groups, early diagnosis and care, even retirement, would have been needed but was not realized.

Most crises faced by top leaders are most likely mild, and they can be treated by occupational healthcare services, at least in Finnish healthcare, although no reliable research data is available. The strength of occupational healthcare is the comprehensive identification, examination and treatment of patients. Occupational healthcare service providers are familiar with the working conditions, the somatic and psychological state of health and, at best, the background and family situation of each patient. Large political and military organisations should have a psychiatric consultation team as part of occupational healthcare, consisting of an occupational healthcare physician specialized in psychiatry, an occupational healthcare nurse, an occupational healthcare psychologist and a consulting psychiatrist.

It is not publicly known whether or not Finland’s top leaders have used psychiatrists as “personal physicians” or consultants, or whether or not any top leaders have been referred to special psychiatric care. The personal physician of Kallio and Mannerheim was an internal medicine specialist, as was the personal physician of Kekkonen, in addition to being a neurologist.

The health problems of top politicians and soldiers described in this article mainly took place in the past, largely during wars and under exceptional circumstances. Medicine, diagnostics and treatment were underdeveloped and different media services were tame guard dogs. Since the 1980s, some of Finland’s presidents have reported their state of health in public. It is not known whether or not an illness has had any impact on the functional capacity of presidents or military leaders during the past few decades. Media services and supervisory authorities monitor the functional capacity of top political and military leaders closely, albeit fairly inconsistently from time to time. Occupational healthcare and psychiatric treatment have evolved. Voters and electors should also assess the health and life management of candidates.

Sufficient expertise, effective decision-making and privacy protection should be allocated to health monitoring and treatment. A psychological disorder or a symptom may not necessarily prevent anyone from working, and decisions should not merely be made on the basis of medical discretion. The threshold for psychiatric and psychotherapeutic evaluation and treatment should be low.

CONCLUDING REMARKS

High-level political and military leaders who are in a significant position are often mentally strong, albeit some of them – just as among the general population – fall ill as a result of older age and stress. Knowledge of psychological problems among top politicians and military leaders is based on case descriptions or a small series of events, apart from the study of US presidents (3) and Post’s (4) extensive case study. However, the literature lacks properly designed studies of the mental disorders of Finnish top leaders: only limited and relatively outdated data based on scientific rigour on the epidemiology and care of mental disorders of top leaders has been identified.

In the light of Finnish case studies (1), it is apparent that more than one third of Finland’s presidents prior to 1982 had a
severe somatic illness and lost part of their functional capacity at the end of their term. Some top soldiers during Finland’s wars suffered from temporary stress- and substance-induced disorders, from which they usually recovered quickly. In recent decades, health problems among top leaders seem to be mainly related to somatic symptom disorders, stress, exhaustion and substances. Responses to these illnesses (diagnosis, medical and political decisions and conclusions) seemed often to be fortuitous, delayed or lacking in quality.

This article focused on disorders, not resilience, coping or recovery. My expertise in biographies of top leaders (1) has raised admiration and amazement of how Finnish top leaders have been able to withstand stress, especially during Finland’s wars, and to recover from different crises and diseases. Part of this ability to cope is associated with the supporting teamwork and collegiality in administrative and management work, which are also integral parts of research (16). However, it seems that many top leaders still carry their round-the-clock workloads alone, without support from teams or shared decision-making processes.

The role of physicians and psychiatrists in the treatment of top leaders is linked with the three basic missions of physicians: to improve the health and well-being of their patients, to act as a medical expert and to make the world a better place to live.

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References


7. Ponteva M. Psychiatric diseases in the Finnish defence forces during the war 1941–1944: an epidemiological and a follow-up study of Finnish soldiers treated in war and field hospitals during the war in the years 1941–1944.)


10. Published in internet: http://www.wpanet.org/current-madrid-declaration


Mental health of high-level politicians and soldiers in Finland: diagnostics, public discussion and treatment

Isohanni
ABSTRACT

Early maladaptive schemas (EMS) represent harmful schemas that are rooted in childhood experiences. Schema therapy is an integrative psychotherapeutic approach and its main aim is to find feasible ways of meeting individual core emotional needs. Core reasons for the emergence of EMSs was their association with difficult and long-term mental disorders. Since then, EMS have been linked to a wide variety of mental and somatic illnesses. Although adolescence is clearly of importance in the developmental process of EMS, studies exploring EMS in adolescents are still limited. However, evidence on interesting associations, including findings typical to this developmental phase, has recently increased. In this review, we describe the current status regarding the concept of EMS and review the present literature on the associations of EMS with psychiatric symptoms in adolescents.

KEYWORDS: ADOLESCENTS; EARLY MALADAPTIVE SCHEMA; MENTAL DISORDER; PSYCHIATRIC SYMPTOM; SCHEMA THERAPY
INTRODUCTION

A schema is defined as a model, frame or structure. Although the term is also used in other fields, psychology generally refers to schema as a model through which an individual looks at oneself and the surrounding world. An important advancement in schema theory was the identification of cognitive schemas guiding the processing of information during child development (1). From a cognitive point of view, the concept of a schema can be defined as a model intertwined around a core belief, which defines something essential about how an individual encompasses themself, others and their own behaviour. Basically, schemas guide the processing of information, and depending on the substance and context, schemas can be either useful or harmful.

The developer of schema therapy, Jeffrey Young, defined early maladaptive schemas (EMS) as harmful schemas that are rooted in childhood experiences (2). It has been suggested that EMS develop as a result of a child’s needs not having been adequately addressed during childhood (3). This does not unequivocally mean that the child has been deliberately neglected, since, for example, the child’s own temperament influences what kind of interaction corresponds to his or her needs (4). Additionally, some of the factors that presumably predispose to the development of EMS are difficult to prevent, such as early loss. EMS provide one feasible hypothesis of how early-stage stressful life events predispose to later mental disorders (5–7).

A core finding, already at the conceptualization of EMS, was that they are associated, in particular, with long-term psychological problems, such as personality disorders. During the past decade, the literature has significantly increased and empirical findings have associated EMS with a variety of mental disturbances, for example, depression (8), bipolar disorder (9), borderline personality disorder (BPD) and other personality disorders (10–12), psychotic experiences (13) and substance abuse (14,15). In addition, EMS have also been linked to somatic symptoms and illnesses, such as somatization and chronic pain (16,17). In adolescents, the evidence on similar associations is still scarce, but steadily increasing (e.g. 18–20). In this paper, we present the basic concepts and current findings of EMS and schema therapy, and reflect their current status regarding adolescents.

SCHEMA THERAPY

Schema therapy is an integrative psychotherapeutic approach and both its background theory as well as therapeutic instruments include elements from different psychotherapeutic traditions (3). Although schema therapy is included, with good reason, in the family of cognitive behavioural therapies, its background theory is firmly founded on attachment theory coined by John Bowlby (21). As such, attachment theory alone can be considered to be quite integrative in its approach, as it provides a common ground regarding child development for different standpoints stemming from cognitive behavioural, psychodynamic, as well as family therapy traditions. Attachment theory is central to the core emotional needs defined in schema therapy, that is, secure attachment to others, autonomy and sense of identity, expression of needs and emotions, spontaneity and play and realistic boundaries and self-control (3). The main aim in schema therapy is for these core emotional needs to be met in a suitable way.

From a cognitive point of view, Alford and Beck (1997) agreed to the nature of EMS as a concept combining different psychotherapeutic frameworks (22). They suggested that core beliefs represent the cognitive content of a schema. However, compared to schema therapy, Beck (1996) interprets the concepts of schema and schema modes to be closer to each other (23). Beck suggests modes to be powerful psychological reactions based on the schemas, while in schema therapy, modes are differentiated from schemas based on the harmful coping responses associated with them. Compared to cognitive behavioural therapy, in schema therapy there is a stronger emphasis on the therapeutic relationship. In this respect, schema therapy leans more on psychoanalytic tradition, in particular, on the more modern views where genuine interaction is emphasized (24). Additionally, schema therapy includes features and methods from, for example, Gestalt therapy, mentalization-based therapy, dialectical behaviour therapy and positive psychology (25–28).

SCHEMAS AND SCHEMA DOMAINS

In the original schema model, a total of 18 EMS were portrayed (3). They were further classified into five schema domains: 1) Disconnection and Rejection (5 schemas), 2) Impaired Autonomy and Performance (4 schemas), 3) Impaired Limits (2 schemas), 4) Other-Directedness (3 schemas) and 5) Over-vigilance and Inhibition (4 schemas).
However, later studies found limited support for this five-domain model and a four-factor model was suggested as more feasible (29–31). In 2018, based on a thorough factorial analysis, an update to the organization of the schema model was presented (28). There are still 18 EMS, but in the current model the number of schema domains has been reduced to four, and additionally, schemas that are closely related to other domains are identified. EMS and schema domains are presented in Table 1.

In general, EMS in the Disconnection and Rejection domain are considered to be most firmly associated with psychological damage (3). EMS may be conditional and unconditional, the former being typically connected to the latter. For example, an individual may try to compensate an unconditional schema of Defectiveness with a conditional schema of Unrelenting Standards.
Table 1. The 18 early maladaptive schemas categorized into the four schema domains.

<table>
<thead>
<tr>
<th>Disconnection and Rejection</th>
<th>Impaired Autonomy and Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional Deprivation</strong></td>
<td>Feels that others do not respond adequately to emotional needs. Typically contains deficiency of care and empathy</td>
</tr>
<tr>
<td><strong>Social Isolation / Alienation</strong></td>
<td>Feels different and separate from others</td>
</tr>
<tr>
<td><strong>Emotional Inhibition</strong></td>
<td>Is obstructed in relation to one’s own feelings, wishes and other people. Fears shame and loss of control</td>
</tr>
<tr>
<td><strong>Defectiveness / Shame</strong></td>
<td>Experiences being inferior and less valuable than others. Fear of shame can be related to private experiences, such as one’s own feelings and thoughts, or to public ones, such as appearance</td>
</tr>
<tr>
<td><strong>Mistrust / Abuse</strong></td>
<td>Assumes that others cannot be trusted, since they wound or exploit</td>
</tr>
<tr>
<td><strong>Pessimism</strong></td>
<td>Thinking is dominated by focusing on the negative aspects of matters and disaster thinking, while ignoring the positive aspects</td>
</tr>
<tr>
<td><strong>Self-Punitiveness</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Vulnerability to Harm</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Excessive Responsibility and Standards</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Self-Sacrifice</strong></td>
<td>Concentrates too much on the needs of others and often fails to meet one’s own needs</td>
</tr>
<tr>
<td><strong>Unrelenting Standards</strong></td>
<td>Has high internal standards, which must be achieved, typically to avoid criticism. Appears as perfectionism and rigid rules</td>
</tr>
<tr>
<td><strong>Self-Punitiveness</strong></td>
<td>Tendency to be harsh on both one’s own and others’ mistakes, and a rigid belief that mistakes should be punished</td>
</tr>
<tr>
<td><strong>Enmeshment</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>Subjugation</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td><strong>Pessimism</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Potential secondary domain affiliations.
COPING RESPONSES

Young et al. (2003) defined that EMS consist of emotions, cognitions, memories and bodily feelings (3). In order to cope with the difficult thoughts and emotions associated with the EMS, individuals are susceptible to dysfunctional coping responses. These responses can be categorized into three types: compliant surrender, detached avoidance and overcompensation. Compliant surrender indicates that the individual accepts the EMS as the truth and acts accordingly. In detached avoidance, different means to avoid unpleasant thoughts and feelings caused by the activation of the EMS are utilized. An overcompensating individual is actively acting against the EMS. On the one hand, this can be perceived as a somewhat constructive attempt to be non-subjugated, but on the other hand, the means are typically so overstretched and powerful that the EMS is strengthened rather than weakened.

Interestingly, although founded on cognitive behavioural therapy, in schema therapy, behaviour is perceived as a reaction or subordinate to the activated schema, not as a central part of it. In part, this is explained by the coping responses, which define the typical behavioural features. From the standpoint of radical behaviourism (32), as well as modern contextual behavioural science (e.g. 33), this is questionable, since most human activities, both active and passive, may justifiably be conceived as behaviour. Thus, such a straightforward categorization may be a bit artificial. Although mostly a conceptual question, it is important to observe that many fundamental features of the EMS are based on externally observable behaviour, for example, for Self-sacrifice and Enmeshment.

SCHEMA MODES

The schema modes were introduced as an extension of the original schema model (34). A key factor was the finding that patients suffering from the most severe disorders, such as personality disorders, typically have multiple EMS and they swiftly switch between them. Thus, the identification and working with EMS alone was not effective enough (3). Modes can be defined as an organized way of thinking and feeling, and a selection of coping skills associated with an activated schema. That is, where schemas refer to “traits”, modes represent “states”. Modes can be categorized as Innate child modes, Maladaptive coping modes and Maladaptive parent modes. Additionally, there’s a Healthy adult mode, which schema therapy aims to strengthen. The modes are depicted in Table 2.

There is an ongoing debate regarding the actual number of schema modes. Some researchers emphasize the need for additional modes in order to improve the understanding of personality, while some strive to keep the model simple and based on the core needs (35). In all, the Vulnerable child mode can be regarded as the mode that manifests the most central unmet needs and thus, typically holds most of the EMS (36).
Table 2. The schema modes.

<table>
<thead>
<tr>
<th>Innate Child Modes</th>
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</thead>
<tbody>
<tr>
<td>Vulnerable Child</td>
</tr>
<tr>
<td>Angry Child</td>
</tr>
<tr>
<td>Impulsive or Undisciplined Child</td>
</tr>
<tr>
<td>Contented Child</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maladaptive Coping Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliant Surrenderer</td>
</tr>
<tr>
<td>Detached Protector</td>
</tr>
<tr>
<td>Overcompensator</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Maladaptive Parent Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punitive Parent</td>
</tr>
<tr>
<td>Demanding or Critical Parent</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Healthy Adult Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Adult</td>
</tr>
</tbody>
</table>
MEASUREMENT OF EMS AND SCHEMA MODES

The gold standard for measurement of EMS is the Young Schema Questionnaire (YSQ). Currently, the newest versions are the YSQ–Long Form 3 (YSQ-L3) and YSQ–Short Form 3 (YSQ-S3; 37). The psychometric properties of the different versions of the YSQ have been investigated in a number of studies and the properties have been reported to be good (e.g. 38,39). The short and modified second version of the questionnaire (YSQ-S2-Extended; 40) has also been studied in the Finnish population and the psychometric properties of it have been shown to be adequate (41).

Schema modes are typically assessed using the 118-item short version of the Schema Mode Inventory (SMI; 42). SMI is based on a 14-factor model that, compared with the original schema model, adds both two child modes and two coping response modes. The validity and reliability of the scale have been confirmed in different populations (43,44). The measure has also been further adapted, for example, to include more modes (45). Although a Finnish translation of the SMI exists, to our knowledge, it has not yet been validated.

Regarding adolescents, the psychometric properties of the YSQ measures have been assessed only in a handful of studies (e.g. 46,47). Güner (2017) studied an alternative EMS measure, the Early Maladaptive Schema Questionnaires Set for Children and Adolescents (SQS), in a sample of 10 to 16-year-olds and found the psychometric properties of the scale to be adequate (48). The psychometric properties of SMI have been confirmed in a couple of Dutch adolescent samples (49,50). In their study, Roelofs et al. (2016) used an applied version of the SMI, the Schema Mode Inventory for Adolescents (SMI-A; 49).

DEVELOPMENT OF EMS IN ADOLESCENCE

To what extent adolescence is intertwined with the development of EMS is still scarcely studied. One limitation is that there are only a handful of longitudinal studies exploring these questions. However, the basis for the schema development is in childhood events and interactions, and thus, it is plausible that as in personality development, the distinctive features and behavioural repertoire settles during adolescence.

In a study conducted in a sample of college students, both childhood emotional abuse and neglect were linked to depression and anxiety, and these associations were mediated by specific EMS (5). Additionally, in one study EMS were found to mediate the link between psychopathological symptoms and attachment anxiety in full, and further, in part between psychopathology and attachment avoidance (51).

However, an important limitation for samples including adults, even young, is that the assessment of experiences regarding childhood attachment and adversities is retrospective, which is subjective to cognitive bias. Simard et al. (2011) conducted a longitudinal study linking the attachment type at 6 years of age with EMS 15 years later (7). Insecure attachment in general was not associated with EMS, however, particularly insecure ambivalent child attachment was, as well as insecure preoccupied attachment style as adult. More recently, Roelofs et al. (2013) studied a clinically referred sample of 12 to 18-year-olds and found partial support that EMS operate as mediators between attachment quality emotional problems (52). Although the evidence is still scarce, EMS may be hypothesized to represent “a cognitive mediator in the relation between attachment insecurity and psychopathology” (52).

EMS AND MENTAL DISORDERS IN ADOLESCENCE

In adults, EMS have been studied in relation to various types of psychiatric symptoms and disorders. For example, EMS have been linked to depression (8), bipolar disorder (9), BPD (10,11) and other personality disorders (12). Additionally, EMS have been associated with attention-deficit hyperactivity disorder (53), eating disorders (54), obsessive-compulsive disorder (55), post-traumatic stress disorder (56) and other anxiety disorders (57), as well as with schizophrenia (58), psychotic experiences (13) and somatization and somatoform disorders (16,59).

In young people, there is evidence that EMS are linked to both depressive and anxiety-related symptoms (60). Regarding the separate EMS, depression has been associated with Insufficient Self-Control, Incompetence, Defectiveness and Vulnerability to Harm (61). The schema domain Other-Directedness, as well as Disconnection and Rejection, appear to mediate the connection between depressive symptoms and the quality of attachment relationships (18). Other-Directedness, in addition to Over-vigilance and Inhibition, have also been suggested to mediate the connection between depression and co-rumination in females (62). Among a sample of college students, the EMS Defectiveness/Shame, Vulnerability to Harm and Self-Sacrifice mediated the connection between childhood experiences of emotional neglect and abuse and depression and anxiety later in life (5). Furthermore, the EMS of Vulnerability to Harm and Defectiveness/Shame
mediated the link between emotional neglect and dissociative symptoms. Regarding the stability of depression, the schema domains Impaired Autonomy, Disconnection and Rejection and Other-Directedness have been found to have a significant effect on the stability of adolescents’ depression (63). Orue et al. (2014) assessed a large sample (n=1170) of adolescents in a 12-month follow-up study and found evidence that schema domains are linked to either depression or social anxiety, or both, also in longer time periods (64). However, there are also findings that indicate that the impact of EMS on adolescents’ depression is relevant mainly in late adolescence (65).

EMS appear to increase the vulnerability to anxiety symptoms (60). Regarding anxiety, the relevance of EMS has most firmly been associated with the development of social anxiety symptoms in adolescents (66). The schema domain of Other-Directedness has been suggested to mediate the relation between exposure to emotional bullying experiences and neurotic personality features with social anxiety (4). However, in addition to Other-Directedness, Impaired Limits and Impaired Autonomy and Performance have also been linked to social anxiety (67).

Among young adults, there is also evidence that EMS may mediate the connection between eating pathology and experiences of abuse in childhood (68). In adolescents, the relevance of EMS has been observed in relation to anorexia nervosa (20). Regarding eating disorder symptoms, the EMS of Dependence/Incompetence and Defectiveness/Shame have been suggested to mediate the link between the symptoms and parental bonding (69). Eating pathology has been linked to EMS in overweight adolescents as well (70,71). Obese adolescents have been shown to have elevated levels of EMS, and the EMS to be connected to both externalizing and internalizing psychological symptoms (70). Zhu et al. (2016) also found a link between EMS, in addition to impulsivity and life event stress, and binge eating (72).

In a study among young adults, Meyer et al. (2001) reported an association of EMS with bulimic symptoms, but the link was mediated by BPD characteristics (73). Indeed, different aspects of BPD have also been shown to be linked to EMS in adolescents and young adults (74). However, when diagnostic features of BPD have been assessed in young people in relation to EMS, compared with controls, BPD is associated with substantial levels of EMS, but the schema profiles are not directly associated with the actual diagnostic criteria (75).

It has been observed that different types of EMS predict the development of different disorders (76). On the other hand, although externalizing and internalizing problems differ in their manifestation, Disconnection and Rejection appears to be associated with both types of problems in adolescence (77). In addition, a recent study highlighted Disconnection and Rejection, as well as Impaired Autonomy, as mediators between childhood maltreatment and psychological symptoms in adolescence (78). Thus, these findings also support the early observation by Young et al. (2003) that Disconnection and Rejection appears to be linked to most significant psychological damage (3).

EMS AND HARMFUL BEHAVIOUR IN ADOLESCENTS

NON-SUICIDAL SELF-INJURY

In adults, there is a moderate amount of studies linking EMS and suicidality in clinical samples, such as patients suffering from bipolar disorder (79,80) or obsessive-compulsive disorder (81). In addition, there are studies on EMS and parasuicidal behaviour (82). Regarding young adults, studies on non-suicidal self-injurious behaviour have shown that EMS may have a role in the behaviour. Lewis et al. (2015) suggested that high scores for Emotional Inhibition and Social Isolation/Alienation, and low scores for Entitlement/Grandiosity EMS, may differentiate those having self-injurious behaviour from those who do not harm themselves (83). Besides Social Isolation/Alienation, also Insufficient Self-Control, Emotional Deprivation and Mistrust/Abuse may differentiate those who harm themselves from others (84).

In student populations, EMS of Emotional Deprivation and Defectiveness have been suggested to be significantly linked to suicidal ideation and suicide proneness (85). Insufficient Self-Control may also mediate the link between proneness to suicide and procrastination (86). Both interpersonal and intrapersonal schemas also have significance on different motivations to harm oneself (87). Among adolescent inpatients, research has shown that EMS, in addition to other cognitive factors, may mediate the link between socioenvironmental factors and adolescents’ mood problems and suicidality (88). Regarding young eating disorder patients, there are indications that individuals with self-harm behaviour have higher levels of EMS compared to eating disorder patients who do not harm themselves (89).
SUBSTANCE ABUSE
Among adults, EMS have been associated with both alcohol dependency and other substance use disorders (e.g. 90–93). In a sample of young adults, Shorey et al. (2012) reported that some patients with opioid dependency had as many as all the 18 EMS, the most prevalent one being Insufficient Self-Control (94). In addition to Insufficient Self-Control, also Subjugation, Abandonment, Emotional Deprivation and Mistrust/Abuse have been reported to be related to cannabis dependency (95). In one report, compared with a non-clinical control group, substance abusing young women had higher scores on 16 out of the 18 EMS, while substance abusing young men had higher scores on 9 out of the 18 EMS (18,96). EMS have also been associated with alcohol misuse in student populations (14). In this age group, consumption of alcohol has been associated with several EMS, for example, Entitlement/Grandiosity, Mistrust, Abandonment and Vulnerability to Harm (97). When comparing adolescents who do not use alcohol, or use it only occasionally, to adolescents who misuse alcohol, the two groups differ in terms of activation of the EMS in general, and particularly on the EMS of Defectiveness, Abandonment, Insufficient Self-Control, Grandiosity, Emotional Inhibition and Vulnerability (98).

AGGRESSIVE BEHAVIOUR
In adults, EMS have been associated with aggression in different samples consisting of, for example, criminal offenders (99) and perpetrators of violence in intimate partner relationships (100). In the latter population, the association has also been studied in relation to trauma exposure (101). Although there is some variation, particular EMS appear to be rather common among adults with pathological aggression: Entitlement/Grandiosity, Mistrust, Abuse, and the schema domains of both Impaired Limits and Disconnection and Rejection (102). Interestingly, the two same domains have been shown to be linked to aggression in individuals with substance use disorders (103), and, in particular, Disconnection and Rejection with overt and physical aggression in patients with BPD as well (104).

In student populations, the link between EMS and aggression has also been observed (105). Entitlement, Mistrust and Insufficient Self-Control have been shown to be related to trait aggressiveness (106). Research also indicates that the Disconnection and Rejection schema domain may mediate the link between childhood experiences of emotional abuse and violence in intimate partner relationships later in life, for both the perpetrators and victims (107). In addition, Subjugation may mediate the connection between dysfunctional parenting recollection and victimization in intimate relationship violence, whereas Mistrust/Abuse and Insufficient Self-Control may mediate the link between the similar recollections and being a perpetrator of such violence (108). In a study among young couples, Shanks et al. (2013) found the schema domains of Impaired Autonomy, as well as Disconnection and Rejection to be associated with violence in women, whereas for men, mainly hostility mediated the link between Impaired Limits and violence (109).

In adolescents, the relevance of EMS in aggression has attained interest, although the studies mostly have combined theory and measurements of EMSs with wider conceptualizations and measurements of cognitive schemas. EMS have been linked to aggression regarding, for example, social information processing (110), aggression of children towards their parents (111), family violence exposure (112), perpetration of dating violence (113) and antisocial behaviour (114). EMS have also been studied in the context of cyberbullying, and the results indicate that both victims/aggressors and victims involved in cyberbullying have higher scores for most EMS compared with those who are not involved in the phenomenon (115).

CONCLUSION
Although the theory behind EMS is firmly based on tried theories, the categorization and the actual number of EMS and schema modes is still subject to fine-tuning. In adults, EMS have been strongly associated with a wide range of psychopathology, and research on similar links, as well as associations typical for adolescents, is slowly but steadily increasing. One of the most important aspects for the emergence of schema therapy was the endeavour to improve treatment of patients suffering from such difficult disorders that are challenging for traditional psychotherapy treatments. Taking into account both the developmental aspects and malleability associated with adolescence, and the high risk for emergence of mental disturbances, adolescence is also a tempting phase for interventions. In this spirit, for example, current guidelines for BPD emphasize the importance of identifying and initiating evidence-based treatment already in adolescence (e.g. 116,117). Thus, intervention studies on schema therapy applied to adolescents are more than welcome. Interestingly, primary results for a group-based intervention for adolescents have been reported (118).
Although these advancements are of high importance, also other interesting aspects of EMS in adolescence are yet to be explored. For example, how attachment problems progress to actual EMS, what their actual significance as a risk factor is for the emergence of mental disorders, and to what extent EMS are stable during adolescence.

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References


57. Hawke LD, Provencher MD. Early Maladaptive Schemas: Relationship With Case Complexity in Mood and Anxiety Disorders. J


Early maladaptive schemas and psychiatric symptoms in adolescence

Saarijärvi et al.
ABSTRACT

The aim of the study was to assess the association between sense of coherence and work ability among psychiatric patients with prolonged disability.

One hundred consecutive and consenting patients who were assessed for work ability at the Outpatient Psychiatric Unit of the Helsinki University Hospital in 2010-2011 were included. The sense of coherence was assessed at baseline, and the participants were contacted for a phone interview after one year of follow-up. Sense of coherence was measured by the 13-item Sense of Coherence scale (SOC). In addition, self-efficacy was measured by the Return-to-Work Self-Efficacy scale and functioning by the Social and Occupational Functioning Assessment Scale (SOFAS). Work ability was measured by self-reported ability to work at the one-year follow-up. Ten participants were lost at follow-up, thus, 90 participants were included in the analysis.

SOC was highest among psychotic patients (mean 64.2, SD 17.0) and lowest among patients with mood disorders (mean 46.8, SD 14.1). High SOC correlated with high self-efficacy (rho 0.62) and high SOFAS (rho 0.31). At follow-up, 62 patients (62%) had returned or were able to return to work. High sense of coherence was associated with ability to work at one year (OR=7.0, 95%CI 1.4-36.3).

Sense of coherence was associated with ability to work at one year despite mental illness. SOC seems to be a useful instrument in the assessment of work ability among psychiatric patients.

KEYWORDS: FUNCTIONAL CAPACITY, WORK ABILITY, MENTAL DISORDERS, ASSESSMENT OF WORK ABILITY, SENSE OF COHERENCE, RETURN-TO-WORK SELF-EFFICACY, SOFAS
INTRODUCTION

Psychiatric diagnoses are common among patients undergoing assessment of work ability. Over one third of all EU citizens suffer from mental disorders yearly (1), and mental ill-health is the leading cause for work disability benefit claims in the OECD countries (2). In Finland, mental disorders caused 39-42% of all, and 28% of new, disability pensions (3), and 17-21% of all sickness allowance periods initiated in 2011-17 (4). These numbers seem to be increasing: the sickness allowance periods initiated due to mental disorders was 22% in 2018.

In medical settings, psychiatric assessment of work ability tends to focus primarily on psychiatric diagnoses and symptom evaluation (5). In social settings, contextual factors are also accounted for, separate from diagnostic evaluation (6). The definition of recovery by Substance Abuse and Mental Health Services Administration (7) does not assume alleviation or withdrawal of symptoms, but stresses the ability to live a meaningful life in a community, to have free choice and to strive to achieve one’s full potential. This definition approaches the concepts of happiness and well-being. Positive psychology can strengthen and broaden psychiatric rehabilitation practices and pathways to recovery (8). Pessimistic self-expectations regarding return to work (RTW) in patients with common mental disorders are associated with a lower RTW (9). Therefore, in order to be successful in mental recovery and rehabilitation planning, we should emphasize patients’ strengths.

In population and organizational studies, sense of coherence is a personal resource associated with stress-coping, work outcomes, subjective perception of health and functional capacity. The central components of sense of coherence are comprehensibility, manageability and meaningfulness. According to Antonovsky’s model (10), sense of coherence addresses salutogenesis, an approach focusing on factors that support human health and well-being, rather than on factors that cause disease.

Our aim was to examine the association between sense of coherence and work ability among psychiatric patients with prolonged disability.

MATERIAL AND METHODS

One hundred and seven consecutive psychiatric patients, evaluated at Helsinki University Hospital outpatient unit for work ability between September 20th 2011 and December 20th 2012, were eligible for this study. The final cohort consisted of 100 patients, due to lack of consent (3 patients) or missing values for SOC (4 patients). At baseline, the participants completed study questionnaires and were assessed clinically. At the end of one year, 90 participants (90%) were interviewed by phone, no contact could be established with 10 participants (10%). According to the outpatient clinic’s criteria for referrals, the included patients had already been in contact with psychiatric services, had been treated for their acute symptoms, and their ability to work or to attend rehabilitation was still unclear. As for employed patients, the occupational health services had already tried to solve the problems of disability in cooperation with the consulting psychiatrist or psychiatrist responsible for psychiatric care.

All patients underwent thorough diagnostic procedures. Prior psychiatric diagnoses and illness severity were re-evaluated according to ICD-10 diagnostic criteria. The diagnoses were classified into eight categories: organic mental disorders (ICD-10 codes F00-09), mental and behavioural disorders due to psychoactive substance use (F10-19), schizophrenia, schizotypal and delusional disorders (F20-29), mood disorders (F30-39), neurotic, stress-related and somatoform disorders (F40-49), behavioural syndromes associated with physiological disturbances and physical factors (F50-59), disorders of personality and behaviour (F60-69), disorders of psychological development (F80-89) and non-psychiatric diagnosis (all other ICD-10 codes). There were no patients with the diagnostic categories of mental retardation (F70-79) or behavioural and emotional disorders with early onset (F90-98). For the analyses, the diagnoses were divided into three categories: mood disorders (F30-39), psychotic disorders (F20-29) and other diagnoses (F00-19, F40-69, F80-89 and all non-psychiatric diagnoses).

In addition, treatment and rehabilitation possibilities as well as work ability and function were assessed at baseline.

Sense of coherence was measured by the short version of the Sense of Coherence scale with 13 items (11) instead of the original version with 29 items. The short version of the SOC has been shown to provide similar results to the long version (12). Typical questions are “Do you have the feeling that you don’t really care about what goes on around you?” (meaningfulness), “Has it happened that people whom you counted on disappointed you?” (manageability) and “Do you have very mixed-up feelings and ideas?” (comprehensibility). All items have a 7-point Likert scale, e.g. from “very seldom
or never” (1) to “very often” (7), or from “never” (1) to “all the time” (7). Thus, the total score ranges between 13-91. For the analyses, the scores were classified into three categories using clinical judgment in the absence of any commonly used categorization: good (66-91), moderate (39-65) and poor (13-38) sense of coherence.

Self-efficacy is based on the individual’s belief in his/her ability to successfully perform in a specific task (13). Lagerveld (14) has formulated the concept of self-efficacy into the 11 questions of the Return-to-work Self-Efficacy (RTW-SE) scale for the needs of return to work and vocational rehabilitation. The main question is whether the patient has the ability to meet the demands of their job if going back to full hours the next day. We used a modified scale with possible scores for each question ranging from 0–6. Higher scores reflect higher levels of self-efficacy. The RTW-SE score was calculated as a mean score (0-6) of all items of the scale, and further classified into three groups based on clinical judgment: high (>4.0), moderate (2.0-4.0) and low (<2.0). One patient did not have the RTW-SE score at baseline.

Functioning was measured by the Social and Occupational Functioning Assessment Scale (SOFAS) (15), which is not based on subjective reporting in contrast to the two other scales described above. A psychiatric healthcare provider fills in the scores based on the clinical interview on four separate domains: work or studies, leisure, family and self-care. A total score considering all the domains with adequate situational emphasis is given with a scale of 0-100. The total score was divided into three categories based on clinical judgment: good (58-100), moderate (46-57) and low (0-45). One patient lacked the SOFAS score at baseline.

Work ability was based on the return to working life or self-assessed ability to return to work. Participants were classified into two groups: those having returned to work (RTW group), and those being too disabled to work and therefore outside working life (disabled group). The RTW group included all employed, self-employed (including freelancers), other work (family work, voluntary work, studies), rehabilitative work trial as well as those able to work but currently unemployed. The disabled group included patients with temporary or permanent disability pensions or income support. In Finland, disability pension can be granted after 300 days of sick leave.

Correlations between SOC, RTW-SE and SOFAS scores were assessed with the Spearman’s rho correlation coefficient. Associations between SOC and ability to work were modelled by logistic regression. Multiple regression analyses were adjusted for age, gender and education. Statistical analyses were performed by SPSS-25 (IBM Corp, Armonk, NY, USA)

RESULTS
There were 63 female and 37 male patients (Table 1). The mean age was 45 years (SD 9.7, range 24-61). Seventy-two patients (72%) had finished elementary school or a second-degree education, whereas 28 (28%) patients had university-level education. Sixty-five patients (65%) were diagnosed with a mood disorder, and 10 patients (10%) with psychotic disorders (F40-49), whereas the remaining 34 patients (34%) belonged to other categories.

The mean SOC score for the whole cohort was 50.7 (SD 15.5), the mean RTW-SE score 2.4 (SD 1.5) and mean SOFAS score 53.7 (SD 9.8) (Table 2). SOC scores were highest among patients with psychotic disorders (mean 64.2, SD 17.0.) and lowest among patients with mood disorders (mean 46.8, SD 14.1). The same pattern could be seen with the RTW-SE score: the lowest scores were among those with mood disorders (mean 2.1, SD 1.4) and highest one among those with psychotic disorders (3.9, SD 1.2). On the other hand, SOFAS score was lowest among those with psychotic disorders (mean 50.2, SD 10.5) and highest among those with other diagnosis (mean 56.9, SD 8.3). The mean baseline SOC score among those with ability to work was 54.8 (SD 14.8) whereas it was lower, 44.1 (SD 14.5) among those who were too disabled to work.

The SOC score correlated highly with the RTW-SE score (rho 0.62), and less with the SOFAS score (rho 0.31).

At the follow-up, 62 patients (62%) were able to work and 28 (28%) patients were disabled. High and moderate sense of coherence predicted work ability (OR 7.0, 95%CI 1.4-36.3, and OR 4.7, 95%CI 1.4-16.0, respectively) (Table 3). Also, high self-efficacy and high SOFAS (OR 9.1, 95%CI 1.0-80.7, and OR 22.0, 4.2-115.3, respectively) predicted work ability.
Table 1. The patient demographics for the cohort consisting of Finnish psychiatric patients undergoing work ability assessment.

<table>
<thead>
<tr>
<th>Gender</th>
<th>n=100 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>37 (37%)</td>
</tr>
<tr>
<td>Female</td>
<td>63 (63%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
<td>45</td>
</tr>
<tr>
<td>SD</td>
<td>9.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment at baseline</th>
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</thead>
<tbody>
<tr>
<td>Employed</td>
<td>45  (45%)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>55  (55%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary, high and vocational school</td>
<td>72  (72%)</td>
</tr>
<tr>
<td>University or college</td>
<td>28  (28%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Mood disorders</td>
<td>56  (56%)</td>
</tr>
<tr>
<td>Psychotic diseases</td>
<td>10  (10%)</td>
</tr>
<tr>
<td>Other</td>
<td>34  (34%)</td>
</tr>
</tbody>
</table>
Table 2: The characteristics of SOC, RTW-SE and SOFAS at baseline in a cohort of Finnish psychiatric patients undergoing evaluation for their work ability.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n (%)</th>
<th>mean</th>
<th>SD</th>
<th>Median</th>
<th>Min</th>
<th>max</th>
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<tr>
<td><strong>All</strong></td>
<td>100 (100)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SOC</td>
<td>100 (100)</td>
<td>50.7</td>
<td>15.5</td>
<td>48.5</td>
<td>19</td>
<td>88</td>
</tr>
<tr>
<td>RTW-SE</td>
<td>99 (99)</td>
<td>2.4</td>
<td>1.5</td>
<td>2.0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>SOFAS</td>
<td>99 (99)</td>
<td>53.7</td>
<td>9.8</td>
<td>55.0</td>
<td>35</td>
<td>87</td>
</tr>
<tr>
<td><strong>Mood disorders</strong></td>
<td>56 (56)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOC</td>
<td>56 (56)</td>
<td>46.8</td>
<td>14.1</td>
<td>45.5</td>
<td>19</td>
<td>81</td>
</tr>
<tr>
<td>RTW-SE</td>
<td>55 (55)</td>
<td>2.1</td>
<td>1.4</td>
<td>1.9</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>SOFAS</td>
<td>56 (56)</td>
<td>52.4</td>
<td>10.2</td>
<td>52.5</td>
<td>35</td>
<td>87</td>
</tr>
<tr>
<td><strong>Psychotic disorders</strong></td>
<td>10 (10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOC</td>
<td>10 (10)</td>
<td>64.2</td>
<td>17.0</td>
<td>69.0</td>
<td>38</td>
<td>88</td>
</tr>
<tr>
<td>RTW-SE</td>
<td>10 (10)</td>
<td>3.9</td>
<td>1.2</td>
<td>4.0</td>
<td>1.7</td>
<td>6.0</td>
</tr>
<tr>
<td>SOFAS</td>
<td>10 (10)</td>
<td>50.2</td>
<td>10.5</td>
<td>47.5</td>
<td>38</td>
<td>65</td>
</tr>
<tr>
<td><strong>Other diagnoses</strong></td>
<td>34 (34)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOC</td>
<td>34 (34)</td>
<td>53.2</td>
<td>14.9</td>
<td>51.0</td>
<td>28</td>
<td>83</td>
</tr>
<tr>
<td>RTW-SE</td>
<td>34 (34)</td>
<td>2.4</td>
<td>1.4</td>
<td>1.8</td>
<td>0</td>
<td>5.6</td>
</tr>
<tr>
<td>SOFAS</td>
<td>34 (34)</td>
<td>56.9</td>
<td>8.3</td>
<td>58.0</td>
<td>35</td>
<td>75</td>
</tr>
</tbody>
</table>

n = number of subjects in cohort; SD = standard deviation
Table 3. Ability to work by SOC, RTW-SE and SOFAS at the end of follow-up in a cohort of Finnish psychiatric patients undergoing evaluation for their work ability

<table>
<thead>
<tr>
<th>Scale categories</th>
<th>a/n</th>
<th>Crude OR</th>
<th>95% CI</th>
<th>Adjusted for age, gender and education OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>62/90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOC</td>
<td>62/90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>poor (&lt;38)</td>
<td>6/18</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>moderate (39-65)</td>
<td>43/56</td>
<td>6.6</td>
<td>2.1-21.1</td>
<td>4.7</td>
<td>1.4-16.0</td>
</tr>
<tr>
<td>good (&gt;66)</td>
<td>13/15</td>
<td>8.7</td>
<td>1.8-42.5</td>
<td>7.0</td>
<td>1.4-36.3</td>
</tr>
<tr>
<td>RTW-SE</td>
<td>62/89</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>poor (&lt;2)</td>
<td>26/43</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>moderate (2-4)</td>
<td>22/31</td>
<td>1.6</td>
<td>0.6-4.3</td>
<td>1.7</td>
<td>0.6-4.9</td>
</tr>
<tr>
<td>good (&gt;4)</td>
<td>14/15</td>
<td>9.2</td>
<td>1.1-76.2</td>
<td>9.1</td>
<td>1.0-80.7</td>
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<tr>
<td>SOFAS</td>
<td>62/90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>poor (&lt;45)</td>
<td>6/18</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>moderate (46-57)</td>
<td>27/40</td>
<td>4.2</td>
<td>1.3-13.6</td>
<td>4.5</td>
<td>1.3-16.1</td>
</tr>
<tr>
<td>good (&gt;58)</td>
<td>29/32</td>
<td>19.3</td>
<td>4.1-90.2</td>
<td>22.0</td>
<td>4.2-115.3</td>
</tr>
</tbody>
</table>

n = whole sample size
a = number of patients with ability to work
DISCUSSION

In our study, high and moderate sense of coherence in psychiatric assessment of work ability was associated with ability to work after one year. Demographic, diagnostic or employment factors did not explain this finding. To our knowledge, the SOC has not previously been used as a predictor for work ability and in planning return to work strategies. However, earlier studies have suggested that the SOC could provide a valuable screening test in occupational health services and public health (16). This scale reflects overall mental vulnerability to changes at work and for working environment adversities (17).

Additionally, self-efficacy and SOFAS predicted ability to work. Our findings are in accordance with studies that show the importance of high self-efficacy as a predictor for RTW (14,18,19). Furthermore, the subjective experience of good functional capacity has predicted return to work outcomes in patients with mental disorders (20-23), and SOFAS has predicted the return to work earlier in the same study population (24). The association between SOC and ability to work may thus be partially mediated by the subjectively formed conception of functional capabilities. With positive beliefs and assurance of one’s capabilities and future chances of success in working life, the motivation to return to work is likely to be higher and the psychological threshold of returning lower.

Self-efficacy, meaning a person’s perception of the capacity to do his or her regular work despite specific obstacles, is closely related to sense of coherence (16). This could also be seen in our study: the association between sense of coherence and self-efficacy was most robust. There is limited previous information on the intercorrelation of these tools, and thus, of their practical value among psychiatric outpatients. RTW-SE measurement is closely related to general self-efficacy and represents the work-related dimension of self-efficacy (14). Studies among patients with chronic somatic illness have shown a positive correlation between sense of coherence and general self-efficacy (25, 26). General self-efficacy contributes more to the variance in sense of coherence than sociodemographic and disease-related variables (26).

In our study, sense of coherence predicted functional and vocational outcomes. Similarly, a higher sense of coherence has been associated with better rehabilitation outcomes among patients with somatic and psychiatric symptoms (27), less disability and morbidity (28) and a lower intention to retire (29). Also among unemployed individuals, a higher sense of coherence is associated with better subjective functional capacity and maintenance of self-esteem (30).

Sense of coherence has been associated with positive aspects of well-being at work and coping with stress (28, 31-35), mental health (17), health behaviour and life-control (28). In contrast, employees with lower sense of coherence scores need more social support from their working environment than those with higher scores (31). A good sense of coherence seems to have an important effect on occupational well-being, and also a possible moderating role in the relationship between work characteristics and well-being (31). A lower sense of coherence is associated with sick-leave and disability pensions (16). The concept of disability seems to include not only lack of functions, but also lack of positive resources such as self-confidence, psychological coping skills and motivation.

Low sense of coherence is associated with more maladaptive psychological defences and psychopathology (36,37), whereas high sense of coherence is associated with emotional stability (38). The association between low SOC and low life-control suggests that a low sense of coherence predicts marginalization. This was also found in our study, where four patients, all having a low SOC, became dependent on social welfare during the follow-up.

In our study, sense of coherence predicted the ability to work among patients with common mental disorders. Severity of psychopathology did not explain, however, the predictive value of sense of coherence for ability to work, because patients diagnosed with psychotic disorders had the highest SOC scores, whereas mood disorder patients had the lowest. Furthermore, RTW-SE scores were the highest among patients with psychotic disorders and lowest among those with mood disorders. In contrast, the SOFAS scores were lowest in those with the most severe disorders, i.e. the psychotic disorders. This reflects the fact that patients with more severe disorders overestimate their functional capacities, meanwhile patients with mood disorders underestimate their capacity when using subjective scales whereas SOFAS, in which a professional assesses the function, reflects more realistically the true status of their functional capacity.

Sense of coherence seems to be a health-promoting resource that strengthens resilience and develops a more positive subjective perception of health, especially of mental health (39). This manifests in study populations regardless of age, gender, ethnicity, nationality or study design (39).
LIMITATIONS OF THE STUDY

We selected our cohort by picking patients already undergoing psychiatric assessment and a treatment trial. Their work ability had been assessed earlier, but there was a need for further investigation. Compared to the usual patients in occupational healthcare, our patients had more severe problems.

Ten patients were not reached for follow-up. These patients did not differ from the patients contacted regarding age, gender, period since last at work, employment status or education. Also, the baseline scores in both groups were similar, suggesting that the patients lost at follow-up did not have an important effect on the study results.

The SOC and RTW-SE questionnaires are subjective, and therefore motivations concerning social security benefits might have affected the results. On the other hand, the SOFAS scale is somewhat arbitrarily based on the judgment of the psychiatric professional evaluating the patient.

CONCLUSION

Despite mental illness, good sense of coherence predicts ability to work after one year of follow-up. The individuals with low sense of coherence are likely to benefit from close attention and more effective rehabilitation planning to avoid estrangement from working life. The SOC seems to be a useful tool for assessment of work ability among psychiatric patients.
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References


Sense of coherence and work ability among psychiatric patients in Finland

Heikinheimo et al.
ABSTRACT

The number of people with non-binary gender experience seeking gender-affirming treatment is rising in Finland as in other European countries. The treatments vary, and there is no long-term follow-up data on the benefits of the treatments or the stability of non-binary gender experience. The aim of this study was to evaluate the clinical outcome of empirical gender-affirming treatment among non-binary individuals who were examined in Helsinki University Hospital’s Gender Identity Clinic during the period 2010–2018. 50 individuals were included in the study (43 were natal females and 7 natal males) and were sent a questionnaire which 39 individuals completed forming a follow-up group, i.e. respondents. All the patients’ psychiatric diagnoses were reviewed. It was found that 8% of patients had no other psychiatric diagnosis in addition to gender disorder diagnosis, and 50% had three or more psychiatric diagnoses, most commonly depression (76%) or anxiety disorder (48%). Neuropsychiatric diagnoses were assigned to 20% and eating disorders to 16%. The use of psychiatric services prior to the examination period was high, in line with the prevalence of psychiatric morbidity. Health-related quality of life (HRQoL) was measured by using the 15D. The results were compared with an age- and gender-standardized sample of the general Finnish population. The mean 15D score among the follow-up group was significantly lower than among the general population. The mean 15D score at the beginning of the examination period and at follow-up, suggesting that the treatment of gender dysphoria may not have a large effect on overall HRQoL. The respondents experienced the gender-affirming treatment to be beneficial, and the non-binary gender identity had remained stable among 32 (82%) respondents. The results of this study show that among these non-binary individuals, gender-affirming treatment alleviated gender dysphoria. Moreover, the treatments did not cause any concerning disbenefits, such as regret or unacceptable somatic complications. More research is urgently needed on the effectiveness of gender-affirming treatment among non-binary individuals.

KEYWORDS: GENDER, GENDER IDENTITY, NON-BINARY, TREATMENT
INTRODUCTION

“Biological sex” refers to our reproductive organs, chromosomes and hormones, but birth-assigned sex is usually determined only on the basis of genital appearance, assuming that other components of sex are consistent. “Gender identity” refers to our inner sense of being a man or a woman and “gender presentation” to how we express gender on a feminine to masculine scale. This is defined by local culture, opinion and times in which a person lives. Sex and gender are more likely to fall on continua rather than in dichotomous categories. Variation in how people position themselves on these continua depends on factors such as developmental stage, past and present environment and experience, and nature of relationship with self and others [1,2].

In most cases, gender identity matches the sex assigned at birth and the person is cisgendered. Gender identities which are incongruent with the person’s body, like transsexual, transgender and gender non-conforming identities, have been part of all cultures historically [3]. The emergence of transgender individuals in the western world has only become prominent in recent decades, even though the first research and treatment regarding transgenderism had already been actualized in Germany in the 1920s by Doctor Magnus Hirchfeld, but his work was intercepted and the archives destroyed. Transgenderism as a clinical phenomenon has been described in the literature since the 1940s, and guidelines for diagnosis and treatment since the 1970s [4]. The aetiology of this phenomenon is not fully known, but some evidence suggests that it has a neurobiological basis. Early-life growth conditions and other environmental factors affect the epigenetics of sex differences in the brain and gender expression [5]. Gender identity development seems to involve complex interactions between biological, environmental and cultural factors. Like sexual orientation, gender identity is not a choice [6].

Transgender people experience a discrepancy between the gender they were assigned at birth and their gender identity. People who do not identify within the binary model of gender, but rather hold a gender identity other than male or female, are referred to as non-binary. Non-binary people may identify as both male and female, as different genders at different times, as no gender at all or dispute the very idea of only two genders. Non-binary people may express features of both genders or neither, and often use labels such as “gender neutral” or “gender fluid”. The umbrella terms for such genders are “genderqueer” or “non-binary” genders [7, 8]. Gender dysphoria is the clinically significant distress, anxiety or discomfort that may occur when a person’s biological sex and gender identity do not align. Suffering caused by gender dysphoria is alleviated with sex reassignment [9]. In the DSM-5 the diagnosis of gender identity disorder has been changed to gender dysphoria [10]. WHO’s new International Classification of Diseases [11] is going to adhere to the DSM-5 system where gender identity disorders belong to the wider “Gender incongruence” diagnosis, where the experienced gender dysphoria is relevant, and gender is considered to be a continuum rather than dichotomous. Implementing ICD-11 means that transgender and non-binary people will get the same diagnosis while now they are still differentiated into two diagnoses, F64.0 Transgenderism and F64.8 Other Gender Identity Disorder. Current examination and treatment in Finland is based on diagnoses according to ICD-10 and Trans Act (Act on Legal Recognition of the Gender of Transsexuals 1053/2002). The new diagnosis system makes the law now, if not earlier, outdated.

Gender dysphoria is associated with an increased likelihood of psychiatric disorders [12], like depression and social anxiety, which are considered to be at least partly caused by gender dysphoria and minority stress. Also, more non-suicidal self-injury and other self-harm is clearly reported [13]. People with gender dysphoria have more problems with their body image, like eating disorders [14]. It is also known that people with autism spectrum disorders or qualities from the spectrum suffer more often from gender dysphoria [15].

The psychiatric assessment of both adolescents and adults seeking treatment for gender dysphoria has been centralized in Finland, according to Trans Act, into two university hospitals, Helsinki University Hospital and Tampere University Hospital, and into youth and adult units. In both hospitals, multidisciplinary teams aim at differential diagnosis. Wishes for sex reassignment that are caused by a mental health disorder are excluded. Also, it is important to assure that the patient’s identity is stable and mature enough. Assessment in adolescence is challenging because the identity in youth is still forming. The examination period lasts approximately one year [16]. The publicly funded gender-affirming treatment includes hormone therapy, voice therapy and other phoniatric services, facial hair removal and mastectomy. Legal gender affirmation and genital surgery are available by Finnish law only to transgender people.
There is accumulating evidence that transgender individuals benefit from gender-affirming treatment [17,18]. There is no adequate scientific evidence of the benefits of gender-affirming treatment among non-binary individuals, and their treatment is therefore considered to be experimental.

The aim of this study was to evaluate the clinical outcome of empirical gender-affirming treatment among non-binary individuals, as well as the stability of non-binary gender experience. The follow-up report was originally commissioned by Council for Choices in Health Care in Finland (COHERE Finland), and part of the results will be published in Finnish language as a part of COHERE recommendation.

MATERIALS AND METHODS

STUDY SUBJECTS

This follow-up study was carried out in the (Adult) Gender Identity Clinic of Helsinki University Hospital where approximately half of Finnish individuals, aged 18 and over seeking gender affirming treatment, are examined (Finland’s population being 5.5 million). The follow-up group of patients consisted of all individuals who were assigned with a diagnosis of other specified gender identity disorder, F64.8 in ICD-10, from January 2010 to August 2018. These individuals were identified from Helsinki University Hospital electronic patient records. Data retrieval resulted in the identification of 87 individuals with diagnosis F64.8. The patient records of these 87 individuals were reviewed by clinical psychologist (L.T.) and specialist in psychiatry (N.P.). 38 individuals were removed from the dataset: 20 individuals whose diagnoses were reassessed and updated to F64.0 (Transgenderism) by the end of August 2018, 7 individuals who were selected by technical error and 7 individuals whose examination period was interrupted before they had any treatment. Finally, 4 individuals were removed from the dataset because their diagnosis was recently set and they had not yet undergone any treatment. One individual was added to the dataset due to strong identification to non-binary gender despite previous diagnosis of F64.0. In total, 50 individuals were included in the study group, 44 (88%) were female assigned at birth and 6 (12%) male assigned at birth.

BASELINE INFORMATION

Baseline information for the follow-up group was collected retrospectively from the patient records of Helsinki University Hospital by the MD psychiatrist in training (K.K.). The patient records consisted of data entries by nurse, social worker, psychologist and psychiatrist during the multi-vocational examination period. The patient records also included information, obtained with consent, on the individuals’ previous psychiatric treatment. During 2010-2018, all individuals underwent psychiatric interview in order to define possible comorbid psychiatric diagnoses before the diagnosis of F64.8. All assigned other psychiatric diagnoses were collected as baseline information. Information on socioeconomic status, such as size of household, marital status and capacity to work/study was recorded. Information on psychiatric history before seeking treatment for gender dysphoria, such as previous psychiatric hospitalizations, treatment in psychiatric outpatient unit and psychotherapy was recorded as part of the baseline data. Details of the examination period in the gender identity unit were recorded (date of initiation, date of diagnosis, age at the time of diagnosis, gender assigned at birth). Scores of available evaluation instruments at the initiation of examination period were recorded (health-related quality of life (HRQoL) data measured by the 15D [19]). Information on the examination period was reviewed in order to learn if the diagnosis of gender identity disorder was postponed due to treatment of other psychiatric conditions.

The 15D instrument includes 15 questions, covering 15 dimensions of HRQoL: mobility, vision, hearing, breathing, sleeping, eating, speech, excretion, usual activities, mental function, discomfort and symptoms, depression, distress, vitality and sexual activity. Each dimension is divided into five levels of severity. The 15D can be used as a single index score measure or as a profile. The single index score (15D score), representing the overall HRQoL on a 0-1 scale (1=full health, 0=being dead), and the dimension level values, reflecting the goodness of the levels relative to no problems on the dimension (=1) and to being dead (=0), are calculated from the questionnaire by using a set of population-based preference or utility weights. Mean dimension level values are used to draw 15D profiles for groups [19]. The minimum clinically important change or difference in the 15D score has been estimated to be ±0.015 [20]. The HRQoL of the patients was also compared with that of an age- and gender-standardized sample of the general Finnish population in the catchment area of the Hospital. For that comparison, patients’
Experimental treatment of gender dysphoria in patients with non-binary gender identities: A retrospective register study and quality control

Kettula et al.

biological gender was used. The population data came from the Health 2011 Health Examination Survey [21].

FOLLOW-UP CONTROL

According to current Finnish law, non-binary patients cannot get legal gender affirmation. Unlike patients with a diagnosis of F64.0, who undergo a one-year real life period before legal gender affirmation, there is no routine follow-up for non-binary patients in Helsinki University Hospital after the diagnosis F64.8 is set. In order to chart the possible healthcare needs of these patients, and to examine the outcome of possible gender-affirming treatment, a follow-up questionnaire was sent to all 50 patients in November 2018 (see Supplementary information). The questionnaire included open questions on received gender-affirming treatment, experienced benefit/harm caused by these treatments and additional treatment wishes. Gender dysphoria, experienced performance and experienced quality of life were mapped with a visual analogue scale (VAS), and the questionnaire also included open questions about these subjects as well as 15D questionnaire. A reminder text message was sent to non-respondents in December 2018. Patients who had not returned the follow-up questionnaire (n=25) were contacted by phone in January 2019 and offered a chance to participate by phone. In total, 39 patients (78%) answered, of these, 37 returned the form and 2 answered by phone. 6 individuals declined to answer and 5 were not reached by phone. Follow-up data of the answers was entered to the corresponding patient record. If concluded that some healthcare intervention was possibly needed, the patients were contacted by treating psychiatrist (K.T.).

STATISTICAL METHODS

The statistical significance of differences in means between independent groups was tested with independent samples t-test, and differences in means of the same group at two different points of time (baseline vs. follow-up) with paired samples t-test. P-values <0.05 were considered statistically significant. The statistical analyses were performed using SPSS.

ETHICAL CONSIDERATION

The study was approved by the ethics committee of Helsinki University Hospital (decision number HUS/2924/2018).

RESULTS

BASELINE DATA

The results cover two patient groups: all the patients who were on an examination period and were diagnosed with F64.8 in 2010–2018 (n=50), and those patients who answered the questionnaire by mail or telephone interview to form the follow-up group, i.e. respondents (n=39). The baseline data of respondents (n=39) and non-respondents (n=11) were compared, and there were no statistically significant differences between the two groups in quality of life, depression, psychiatric history, neuropsychiatric diagnoses, the length of examination period or age at diagnosis.

Among the patients caught by follow-up questionnaire, the diagnosis of F64.8 was set approximately at the age of 27 (standard deviation, SD=6.4; Median, Me=26; Mode, Mo=23). The examination period took approximately 13 months (SD=8.8; Me=9; Mo=9). Two patients had started their examination period at the Tampere University Hospital. 10 (26%) patients had a prolonged examination period due to extra time needed to make sure the gender identity was structured enough, or due to psychiatric treatment.

At the beginning of the examination period, 40 (80%) patients were working or studying full-time. During the examination period this did not change, as 38 of the patients (76%) were working or studying full-time when the examination period ended. The rest were on sick leave or disability pension. When these patients started their examination period, 7 (14%) were married or lived with their partner. By the time the examination process was over, the relationship status was not widely reported. 7 (14%) were married or lived with their partner, 23 (46%) were not, and for 20 (40%) the relationship/marital status was unclear. 46 follow-up patients (92%) were living independently (not with parents or in a care home) when the examination period started and 47 (94%) when it ended.

During the examination period in the Gender Identity Clinic, a psychiatric interview was performed for all individuals seeking gender-affirming treatment. The records of these interviews for all the patients (n=50) were reviewed by MD and psychiatrist in training (K.K.). The results are presented in Table 1.

As there was no statistical difference between respondents and non-respondents, psychiatric diagnoses are reported here for the whole patient group (n=50). Only 4 (8%) patients had no other psychiatric diagnoses in addition to gender disorder diagnosis. 22% (n=11) of the patients had one psychiatric diagnosis and 18% (n=9) had two diagnoses. 16% (n=8) of
the patients had three additional diagnoses and 18% (N=9) had four. 16% of the patients (n=7) had five or six additional diagnoses and one patient (n=1) had 8 additional diagnoses (8%).

The most general psychiatric diagnosis among the non-binary patients was depression (F32-F33), diagnosed in 76% (n=38) of the patients. There were no diagnoses of bipolar disorder. Anxiety disorder (F40-F48) diagnosis was set to 48% (n=24). Personality disorder (F60) was diagnosed among 44% (n=22) of the patients, of which there were 7 diagnoses of borderline personality disorder (F60.3). Patients often had several diagnoses from the same diagnosis main group (for example, panic disorder and post-traumatic stress disorder from the anxiety disorders’ group). 6% (n=3) of individuals had suffered from psychosis (F20-F29) and 8% (n=4) had a diagnosis due to psychoactive substance use (F10-F19). 16% (n=8) had eating disorders (F50-F59). Neuropsychiatric diagnosis was set to 10 individuals: 10% (n=5) of individuals had a diagnosis from the diagnosis group F90-98 and 10% (n=5) from the diagnosis group F80-F89.

Before the examination period started, 15% (n=6) of the respondents (n=39) had been treated in psychiatric hospital. 72% (n=28) had had contact with psychiatric healthcare (Finnish Student Health Service YTHS or psychiatric outpatient unit) and 49% (n=19) had had psychotherapy.

**FOLLOW-UP QUESTIONNAIRE**

In the follow-up questionnaire, individuals were asked to evaluate their performance on a VAS scale from 0 to 100. The results are presented in Table 2.

There was noticeable amount of dispersion in the quality of life and ability to function. Personal ability to function was evaluated to be highest and felt that their quality of life was very good. Most of the respondents reported functioning at a high level and felt that their quality of life was very good.

In the questionnaire patients were asked to select a term that would best describe their gender. 7 patients (18%) chose from the binary gender system describing themselves as “woman” (3, 8%), “man” (1, 3%) or “transman” (3, 8%). 32 (82%) of questionnaire respondents defined their gender from non-binary or gender-queer descriptions: 6 (15%) described themselves as “genderless”, 14 (38%) as “gender-queer”, 6 (15%) as “non-binary” and 4 (10%) as “other” (2 “transgender”, 1 “intersexual”, 1 did not specify). Of the 39 respondents, 2 did not answer this question. When the patient records of the 7 patients describing themselves as binary were examined, it was found that among 3 patients the diagnosis F64.8 had been updated to F64.0 after August 2018, when the data retrieval for this follow-up was made. One patient regretted the received gender-affirming treatment and identified him/herself to his/her gender assigned at birth. The update in diagnosis occurred approximately 2 years after the first gender disorder diagnosis (Me=23.8 months; SD=10.12 months, min 12, 21 months, max=36.87 months). When the updates in gender identity diagnoses were examined among all patients (n=87) found by the original data retrieval, including those who were excluded from the follow-up group, it was found that the diagnoses had been updated approximately a year from the first diagnosis (Me=14.31 months; SD=9.32 months, min=5.68 months, max=36.87 months). There was only one individual whose diagnosis was updated from transgender to non-binary.

The respondents were asked to list all the treatment they had received and whether they found the treatment beneficial or harmful. The answers are listed in Table 3.

More than half of the individuals had gone through mastectomy (59%, n=23) and it was reported to be highly beneficial (4.82 on a scale from 1 to 5). Most of the individuals (62%, n=23) had also received feminizing/masculinizing hormone treatment. The respondents reported lower subjective benefit from hormone treatment (3.91 on a scale from 1 to 5) than from mastectomy (4.82), and 6 individuals had stopped the hormone treatment. Other treatments were reported rarely in the answers. 62% of the individuals had changed their first name but probably did not think to mention it as a treatment, and many were also in psychotherapy even though they did not report in on the questionnaire. Only 2 of the patients had had mastectomy in a private hospital, the rest of the received gender-affirming treatments were given within public healthcare. 6 respondents had not received any kind of gender-affirming treatment nor changed their first name. These individuals reported that they felt that the diagnosis F64.8 was enough or that they wanted to get pregnant first. Mostly the respondents were satisfied with the treatments: they listed 87 positive outcomes or benefits and only 29 disbenefits from the treatments. According to the respondents’ answers, the benefits were categorized into physical, mental and other benefits, as can be seen from Table 4.
Table 4 shows that the most significant benefits came from decreased body dysphoria and improved body image. Also, the respondents felt that their mood and self-esteem were better and that they had more social courage. The most mentioned physical changes were the lowering of the voice and decreased pain that was caused by the binding of the breasts. Some felt that the treatments helped them enjoy exercising more and it was easier to get dressed. The respondents mentioned altogether 29 disbenefits from the gender-affirming treatment. The physical disbenefits were mostly problems with the mastectomy: either with pain or bleeding (6 reports) or scars (3 reports). Hormonal treatment-induced acne was a problem for two respondents. Psychological and social disbenefits were depression and anxiety associated with the hormone treatment (2 reports), stress about gender issues and other people’s confusion (2 reports). Other disbenefits included expensive medicines that were sometimes out of pharmacy (2 reports) and, for example, dysphoria that got worse (1 report). 34% of the respondents felt that they had gone through all the gender-affirming treatment they needed, while 23% were possibly still thinking to continue with the treatment and 42% were sure they still wanted gender-affirming treatment. Among many of the respondents, gender-affirming treatment was yet to be finished (for example, they were waiting for mastectomy), or they could not get some treatment they wished due to Finnish law or medical reasons.

In the questionnaire, the respondents were asked to evaluate how much they suffer from gender dysphoria on a scale of 0 (none) to 100 (unbearable). Gender dysphoria was divided into two dimensions: social dysphoria and body dysphoria. The respondents reported approximately 51.9 (SD=27.5; Me=60; Mo=70) suffering from social dysphoria. Reported body dysphoria level was 34.5 (SD=25.6; Me=30; Mo=20).

**HEALTH-RELATED QUALITY OF LIFE COMPARED TO GENERAL POPULATION BEFORE AND AFTER TREATMENT**

As the 15D has been used at the clinic only since 2013, baseline HRQoL data were available for only 22 patients who also participated in the follow-up. The mean 15D score of patients at baseline was 0.876 and that of age- and gender-standardized general population 0.937. The difference is statistically significant (p<0.001) and clinically important. The patients were on average statistically significantly worse off than the general population on the dimensions of sleeping (p=0.001), usual activities (p<0.001), mental function (p=0.0012), discomfort and symptoms (p=0.013), depression (p<0.001), distress (p<0.001) and vitality (p<0.001) (Figure 1).

The mean 15D score of patients at follow-up was 0.848 and that of age- and gender-standardized general population 0.937. The difference is statistically significant (p<0.001) and clinically important. The patients were on average statistically significantly worse off than the general population on the dimensions of sleeping (p=0.001), usual activities (p<0.001), mental function (p<0.0012), discomfort and symptoms (p=0.013), depression (p<0.001), distress (p<0.001) and vitality (p<0.001) (Figure 2).

The mean 15D score seems to have deteriorated after the treatments (baseline=0.876, follow-up=0.848). The difference is clinically important, but not statistically significant (p=0.132). Of the dimensions, the biggest deteriorations seem to have taken place in usual activities and vitality, but the differences are not statistically significant either (p=0.084 and p=0.062, respectively) (Figure 3).
Table 1.

<table>
<thead>
<tr>
<th>Lifetime DSM Axis I &amp; II diagnoses of gender identity disorder patients (n=50)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood disorders F30-39 (all depressions)</td>
<td>38</td>
<td>76</td>
</tr>
<tr>
<td>- of which dysthymia (F34.1)</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Anxiety disorders (F40-48)</td>
<td>24</td>
<td>48</td>
</tr>
<tr>
<td>Personality disorder (F60)</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>- of which borderline personality disorder (F60.3)</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Psychotic disorders</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Diagnoses due to psychoactive substance use</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Eating disorders</td>
<td>6</td>
<td>16</td>
</tr>
<tr>
<td>Neuropsychiatric disorders:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F80-89 (Specific developmental disorders)</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>F90-98 (Behavioral disorders)</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 2.

Self-reported current ability to function on a VAS scale from 0 to 100

<table>
<thead>
<tr>
<th></th>
<th>Range</th>
<th>SD</th>
<th>Mode</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Ability to Function (at work, studies, work search)</td>
<td>0-100</td>
<td>37.34</td>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td>Social Ability to Function (relationships, hobbies, personal affairs)</td>
<td>90-200</td>
<td>23.26</td>
<td>80</td>
<td>70</td>
</tr>
<tr>
<td>Personal Ability to Function (taking care of self/home)</td>
<td>10-200</td>
<td>25.30</td>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td>Quality of life</td>
<td>20-100</td>
<td>22.45</td>
<td>90</td>
<td>70</td>
</tr>
</tbody>
</table>
Table 3.

The treatments the patients had gotten and the benefits and disbenefits reported from them

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Treated patients, n</th>
<th>Benefit1, mean (SD)</th>
<th>Disbenefit1, mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender affirming treatments:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hormones</td>
<td>24</td>
<td>3.91 (SD=1.3)</td>
<td>1.88 (SD=1.0)</td>
</tr>
<tr>
<td>Mastectomy</td>
<td>23</td>
<td>4.82 (SD=0.85)</td>
<td>1.53 (SD=0.95)</td>
</tr>
<tr>
<td>Epilation</td>
<td>2</td>
<td>3.00 (SD=2.63)</td>
<td>1.00 (SD=0)</td>
</tr>
<tr>
<td>Hysterectomy</td>
<td>1</td>
<td>5.00 (SD=0)</td>
<td>NR</td>
</tr>
<tr>
<td>Breast prosthesis</td>
<td>1</td>
<td>5.00 (SD=0)</td>
<td>1.00 (SD=0)</td>
</tr>
<tr>
<td>Drugs to stop periods</td>
<td>2</td>
<td>5.00 (SD=0)</td>
<td>1.00 (SD=0)</td>
</tr>
<tr>
<td>Other support measures:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name change</td>
<td>4</td>
<td>5.00 (SD=0)</td>
<td>1.00 (SD=0)</td>
</tr>
<tr>
<td>Therapy</td>
<td>6</td>
<td>2.68 (SD=1.77)</td>
<td>2.14 (SD=1.69)</td>
</tr>
</tbody>
</table>

1 On a scale from 1 to 5, 1 = not at all, 5 = a lot, NR = not reported

Table 4.

Benefits from the treatments

<table>
<thead>
<tr>
<th>Physical</th>
<th>How many times mentioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowering of the voice</td>
<td>7</td>
</tr>
<tr>
<td>No more periods</td>
<td>2</td>
</tr>
<tr>
<td>Facial hair, change in hair</td>
<td>4</td>
</tr>
<tr>
<td>More muscle, body more masculine</td>
<td>3</td>
</tr>
<tr>
<td>No need to use binder any more (less pain, better posture)</td>
<td>6</td>
</tr>
<tr>
<td>Psychological</td>
<td></td>
</tr>
<tr>
<td>Looking better</td>
<td>2</td>
</tr>
<tr>
<td>Less body dysphoria, more whole body image</td>
<td>21</td>
</tr>
<tr>
<td>Mood and quality of life better, less anxiety</td>
<td>7</td>
</tr>
<tr>
<td>Better self-esteem/self-image</td>
<td>5</td>
</tr>
<tr>
<td>Identity stronger, own situation clearer</td>
<td>5</td>
</tr>
<tr>
<td>More self-assurance, social situations easier</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Easier to dress up</td>
<td>6</td>
</tr>
<tr>
<td>Easier to exercise, exercising more</td>
<td>4</td>
</tr>
<tr>
<td>Getting more sexual, easier to enjoy sexuality</td>
<td>2</td>
</tr>
<tr>
<td>Less pain</td>
<td>2</td>
</tr>
<tr>
<td>Change in way of thinking</td>
<td>1</td>
</tr>
<tr>
<td>Taking better care of oneself</td>
<td>1</td>
</tr>
</tbody>
</table>
Figure 1. The mean 15D profile of non-binary individuals (n=22) at baseline and that of age- and gender-standardized general population.

Figure 2. The mean 15D profile of non-binary individuals at follow-up and that of age- and gender-standardized general population.
Figure 3. The mean 15D profile of non-binary individuals at baseline and follow-up
DISCUSSION

There is paucity of long-term follow-up data on the stability of non-binary gender experience as well as outcomes of empirical gender-affirming medical treatment among non-binary population [8]. This is one of the first studies on the subject. This database follow-up study was designed when a need for follow-up data for clinical purposes emerged as the number of patients with non-binary gender experience seeking gender-affirming treatment started to increase rapidly in Finland, in line with other European countries [22,23]. Simultaneously, the Ministry of Social Affairs and Health Council for Choice in Health Care in Finland (COHERE) commenced a preparation for a recommendation concerning gender-affirming medical treatment. This study was partly funded by COHERE Finland and a part of the results will be published in the Finnish language as COHERE Finland recommendation's background material.

There are only two publicly funded gender identity clinics with roughly a similar number of patients in Finland, and therefore this clinical follow-up reached approximately half of all non-binary individuals seeking medical treatment in Finland during the period 2010-2018. As most of the psychiatric specialized healthcare in Finland is publicly funded, the patient records from psychiatric units were available with the permission of the patient. The percentage of patients that were reached either by questionnaire or telephone was high (78%), which shows that the study was also found to be of importance among the patients.

When the patient records of individuals diagnosed with F64.8 other gender identity disorder were reviewed, it became evident that even the vocabulary concerning this phenomenon was only forming during the study period 2010-2018. During the first years of this sample, individuals with non-binary gender experience were referred to as “transgender” in English language as there was no word for this in Finnish. Towards the end of the study, 2016-2017, diagnosis was “other gender” (“muunsukupuolinen” in the Finnish language). As the whole concept of non-binary gender experience was only forming in a medical context, the study population examined was fairly diverse. As the study population consisted of individuals diagnosed with F64.8 in Helsinki, individuals with non-binary gender experience who did not seek medical treatment for gender dysphoria were not included in this study. In addition, individuals who had somatic or psychiatric conditions warranting acute treatment during the study period 2010-2018 were not included, as the treatment of more acute conditions was prioritized over the examination period. Due to the long examination period, the phase of the treatment varied among the study population when the follow-up questionnaire was conducted, and not all of the individuals had yet undergone all the desired gender-affirming treatment.

In this retrospective study setting it was not possible to do before and after treatment comparisons for most of the examined variables, excluding the 15D [19], which was filled in by part of the study population prior to treatment. A prospective study is ongoing, where the aim is to correct this problem. Finally, according to Finnish law, the gender identity clinic serves as a gatekeeper to publicly funded gender-affirming treatment, and this may have had some effect on the follow-up questionnaire answers.

The patient population consisted of working age individuals, and the majority of them were studying or working full-time at the time of their examination period. Almost all were living independently. However, being married or cohabiting with a partner was less common among these non-binary individuals than would be expected according to their age.

The majority of non-binary individuals in this study had more than one psychiatric diagnosis. Especially depression and anxiety disorders were clearly more prevalent than in the Finnish general population, where the lifetime prevalence of depression is estimated to be 6.5% and anxiety disorders 4.5% [24]. This is consistent with previous findings among non-binary populations, and minority stress is suggested to be one of the explaining factors [25]. The use of psychiatric services prior to the examination period was high, in line with the prevalence of psychiatric morbidity, which can be seen as a positive thing showing that the patients had sought help and it was available. Substance use disorders were rare among this study population. Neuropsychiatric diagnoses were assigned to 20% and eating disorders to 16%, which is consistent with previous studies stating that these disorders are more common in individuals with gender dysphoria compared to the general population [14,15].

When the stability of experienced gender was examined, it appeared that among 32 (82%) of the respondents, non-binary gender identity had remained stable. This suggests that non-binary gender experience per se is not a sign of undeveloped or unstable gender identity. 7 (18%) of the respondents reported that their experienced gender had changed from non-binary towards binary transgenderism. In addition, another 20 individuals were excluded from the study because their diagnosis had been corrected to F64.0 earlier. This suggests that among some individuals, non-binary gender experience may be an intermediate phase. Furthermore, the

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Experimental treatment of gender dysphoria in patients with non-binary gender identities: A retrospective register study and quality control
transition from non-binary towards transgender may reflect
them representing the same continuum, with the difference
in identification to social gender roles. The cultural trends
of challenging traditional gender roles also become visible
among patients with gender dysphoria. It is also possible
that received gender-affirming treatment affects gender
experience. On average, the change of diagnosis from F64.8 to
F64.0 was actualized very fast, within a year from first gender
dysphoria diagnosis. Clinically it seems that if the diagnosis
changes quickly from F64.8 to F64.0 it is because the gender
identity is already leaning towards binary transgenderism,
and then the physiological treatment strengthens that identity.
When the patient records of these individuals were reviewed,
it appeared that none of the individuals whose diagnosis was
changed from F64.8 to F64.0 regretted the received gender-
affirming treatment. On the contrary, additional measures
such as genital surgery and legal gender affirmation became
available for these individuals after their diagnosis was
corrected to F64.0 (as stated in Finnish law). One individual
(3%) reported a gender identity corresponding to their gender
assigned at birth and reported to regret the received gender-
affirming treatment. The statistical power of this study did not
permit any conclusions on the prevalence or characteristics of
non-binary individuals who regretted treatment.

In general, the respondents experienced the gender-
affirming treatment received as beneficial. According to the
open questions in the questionnaire, respondents stated that
their body image felt more intact and their gender dysphoria
decreased after treatment, which is considered the primary
goal of gender-affirming treatment. This finding is consistent
with previous Finnish studies among binary transgender
patients [26,27]. Elevated self-confidence and mood were
also reported, which can be interpreted as a consequence
of decreased gender dysphoria. Mastectomy was reported to
be highly beneficial, although many small complications
occurred during the procedure. The respondents were not
as content with the received hormonal treatment, and some
had ceased the hormonal treatment altogether.
The respondents listed considerably more often benefits than
disbenefits, and the reported disbenefits did not expose any
common problem with the treatments. 42% of the respondents
reported that they had not received all the treatments that they
wanted. The reasons for this were medical (for example, too
high body mass index) or juridical (Finnish law does not
permit genital surgery for non-binary individuals). A part
of the respondents felt that the diagnosis F64.8 per se was
enough to validate their gender experience and did not wish
any gender-affirming treatment. At the time of the study, when
most of the individuals had received some gender-affirming
treatment, social gender dysphoria was reported to be higher
than dysphoria related to the body. This can be attributed to
difficulties in being perceived and treated as non-binary in a
society where the mainstream view of gender is still mostly
binary.

When the baseline data for the respondents was reviewed,
completed HRQoL (15D) questionnaires at the beginning of
the examination period were found for 22/39 individuals, as
the 15D evaluation had only been used at the Gender Identity
Clinic since 2013. There was no statistically significant
difference in the mean 15D score at the beginning of the
examination period and at follow-up. This suggests that the
treatment of gender dysphoria may not have a large effect on
overall HRQoL. However, this finding has to be confirmed in
a larger study population. According to clinical experience, it
often seems that individuals who seek treatment for gender
dysphoria tend to under-report their health concerns and
over-report their HRQoL at the beginning, due to worries
that their gender dysphoria treatment may be postponed if
a lot of other problems are detected. At the follow-up it is
easier to report true problems more accurately. Their mean
15D profiles, however, were quite similar before and after the
follow-up, suggesting a minor bias in degree of quantitative
reporting instead of profound discrepancy. In comparison to
Finnish age- and gender-standardized general population, the
mean HRQoL was statistically significantly and clinically
importantly poorer among non-binary individuals. When
the different dimensions of the 15D were examined, it was
found that poorer HRQoL occurred primarily on dimensions
concerning psychiatric health. This is consistent with previous
studies [28] that psychiatric morbidity is higher among gender
dysphoria patients compared to the general population. This
may be at least partially attributed to minority stress [26].

In conclusion, the results of this study show that among
these non-binary individuals, gender-affirming treatment
alleviated gender dysphoria. Moreover, the treatments did
not cause concerning disbenefits. Psychiatric morbidity
was high and HRQoL was lower compared to the general
population. According to these preliminary results, there is no
reason to change the treatment regime for non-binary patients
at the Gender Identity Clinic of Helsinki, provided that a
routine, structured follow-up is organized, similar to that of
transgender patients, and that special attention be directed to
treating comorbid psychiatric problems. In order to formulate
evidence-based treatment protocols for non-binary patients,
studies on the effectiveness of gender-affirming treatments
among non-binary individuals are urgently needed.
Funding

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References


Spinal cord stimulation (SCS) is an established and cost-effective treatment for neuropathic pain resulting from failed back surgery syndrome (FBSS). Psychological distress is a risk factor both in the development of FBSS and for reduced efficacy in SCS. The impact of psychological factors on SCS outcome is still poorly understood, and more research is warranted to gain a better understanding of the matter. The objective of this prospective study was to investigate the prevalence of anxiety symptoms pre-surgically and at 6 and 12 months post-surgically, and to examine their association with depressive symptoms, pain intensity and pain-related disability in patients with FBSS treated with SCS. Beck Anxiety Inventory (BAI) was used to assess anxiety symptoms, Beck Depressive Inventory (BDI) to assess depressive symptoms, Numeric Pain Rating Scale (NRS) to assess pain intensity, painDETECT to assess neuropathic pain and Oswestry Disability Index (ODI) to assess pain-related disability at baseline and at 6- and 12-month follow-ups. A total of 118 consecutive consenting patients referred to SCS at Kuopio University Hospital (KUH) between January 1, 2015 and December 31, 2018 were assessed at baseline, of whom the follow-up data at 6 and 12 months was available for 59 patients. Among those who received a BAI score of <16 at baseline, signifying minimal to mild anxiety, statistically significant improvements were observed for the NRS (p<0.001), ODI (p=0.001) and painDETECT (p<0.001) at follow-up, whereas among those who reported a BAI score of ≥16, signifying moderate to severe anxiety, statistically significant improvement was observed in painDETECT (p=0.003), but not in NRS (p=0.267) nor ODI (p=0.110). No statistically significant improvement was observed in depressive or anxiety symptoms at follow-up.

Conclusions
Among patients reporting moderate to severe anxiety at baseline, the SCS outcome was significantly worse at 1-year follow-up, than among those reporting only minimal to mild anxiety.

KEYWORDS: ANXIETY, SPINAL CORD STIMULATION, FAILED BACK SURGERY SYNDROME, CHRONIC PAIN, NEUROPATHIC PAIN, BECK ANXIETY INVENTORY
INTRODUCTION

Failed back surgery syndrome (FBSS) is a condition characterized by persistent pain and impaired function after lumbar spine surgery. In a recent large cohort study, Schoell et al. reported the incidence of FBSS to be 17%, with previous studies reporting incidence of 10-40%. FBSS is often associated with severe disability, loss of quality of life, psychological distress and has a major economic impact. Psychological distress, namely depression, is shown to increase the risk of developing FBSS2.

Spinal cord stimulation (SCS) is an established and cost-effective treatment for FBSS4. In SCS, doses of electrical current are delivered to the dorsal column of the spinal cord. The specific mechanism producing analgesia is unknown5. Pain relief of greater than 50% is considered to be an excellent outcome, and the long-term success rate in SCS is reported to be between 57–83%6,7,8. Despite technical achievements in SCS techniques, a significant number of patients fail to benefit, or lose the analgesic effect over time, in which psychological factors are considered to play a substantial role9. It has been suggested that psychological factors are particularly important in predicting the outcome in SCS implantation, perhaps more so than for other interventional spinal procedures and surgeries10. Depression is most consistently shown to diminish SCS outcome, while the association of anxiety with SCS outcome is less clear11. Nevertheless, these symptoms are very common in these patients, with higher prevalence than seen in the general population12.

In order to improve the success rate, preoperative psychological assessment is commonly used, often even mandated for insurance coverage, despite the fact that the predictive value of these assessments is frequently questioned13.

More research is needed to better understand the association of psychological factors and SCS outcome. In this prospective study, we investigated the prevalence of anxiety symptoms in FBSS patients referred to SCS, and their association with pain intensity, pain-related disability, anxiety and depressive symptoms at 6- and 12-month follow-ups. We hypothesized that patients with clinically significant anxiety at baseline experience less benefit from SCS.

METHODS

STUDY LOCATION AND PATIENT SELECTION

Kuopio University Hospital (KUH) is a tertiary referral hospital located in Eastern Finland. KUH Neurosurgery has conducted SCS implantations since 1997, providing evaluation, treatment and follow-up to the patients sent for consultation by other healthcare units. Since 2015, all relevant clinical data concerning SCS patients has been prospectively compiled into the Kuopio Neuromodulation Database, which encompasses all patients who have received a permanent SCS device. The database is run by a dedicated nurse coordinator, who is responsible for gathering the clinical data from hospital periods and follow-up visits. The dedicated nurse interviews all patients as a part of the multidisciplinary assessment of SCS candidates. If the patient is considered appropriate for SCS and has given an informed consent, baseline data is collected. Prior to the implantation of the permanent SCS device, patients undergo a one-week trial stimulation period, when percutaneous or surgical paddle electrodes are implanted and positioned to obtain maximal coverage of the painful area. Stimulation parameters can be set during the trial period in an effort to achieve an optimal pain reduction. After the one-week trial, the outcome is assessed with the painDETECT questionnaire and a seven-level rating scale for global perceived effect of the therapy. If sufficient pain relief or significant increase in quality of life is reported by the patient at the end of the trial, the patient proceeds to have a permanent SCS device implanted. If adequate pain relief is not achieved, the leads are removed. In the current study, we analysed all consecutive FBSS patients referred to SCS and admitted to KUH between January 1, 2015 and December 31, 2018, who had given an informed consent and completed the questionnaires at the baseline. We grouped the patients into low and high anxiety groups using BAI score of 16 as a cut-off. For the outcome analyses, we analysed patients who had been implanted with a permanent SCS device and had completed the questionnaires at 6- and 12-month follow-ups.

QUESTIONNAIRES

Anxiety was measured using Beck Anxiety Inventory (BAI) and depressive symptoms using Beck Depression Inventory (BDI), both of which are 21-item self-report questionnaires with a 4-point response scale (range 0–63). A BAI score under 7 is considered to indicate a minimal level of anxiety,
8–15 mild anxiety, 16–25 moderate anxiety and 26–63 severe anxiety14. BDI score of 0–13 indicates no depression, 14–19 mild depression, 20–29 moderate depression and 29–63 severe depression. BDI is shown to have construct validity and internal consistency for assessing depressive symptoms in patients with chronic pain15.

Disability was measured with the Oswestry Disability Index (ODI), which consists of 10 items with 6 statements. Each statement has a value from 0 to 5 and the statements are then summed up. The total score is presented as a percentage of the maximum score. A score of 21% to 40% is interpreted as moderate disability, 41% to 60% as severe disability and 61% to 80% denotes a crippled individual. Scores under 20% are non-concerning16. Pain intensity was measured with Numeric Pain Rating Scale (range 0–10), where 0 is no pain, 1-3 mild pain, 4-6 moderate pain and 7-10 severe pain17. The likelihood of neuropathic pain was measured with painDETECT questionnaire (range 0–35). PainDETECT scores exceeding 19 suggest a high likelihood (>90%) of neuropathic pain18.

STATISTICAL METHODS

The baseline measures were compared using Fisher’s exact test for nominal and the independent samples t-test for scale variables, or Mann–Whitney U test if the data was non-normally distributed. Variables used to measure the outcome of surgery were temporally compared using one-way repeated-measures ANOVA. The significance cut-off level was set at 5%. IBM SPSS Statistics V22 was used for the appropriate statistical tests.

ETHICAL ASPECTS

The study was approved by the Ethics Committee of the Kuopio University Hospital. The SCS registry has the permission of Ministry of Social Affairs and Health.

RESULTS

BASELINE CHARACTERISTICS

In total, 118 FBSS patients were included in the study, of which 53 (45%) were male. Forty-two (36%) patients had had a posterior lumbar fusion performed as a previous spine surgery. The mean age at baseline was 52.2 years (SD=12.5). The mean NRS score was 6.8 (SD=1.2), the mean ODI was 47.6 (SD=13.2) and the mean painDETECT score was 20.4 (SD=5.6), signifying moderate to severe pain, severe disability and high likelihood of neuropathic pain, respectively. The mean BAI score was 11.7 (SD=7.8) and the mean BDI score was 13.2 (SD=8.0), signifying mild anxiety and mild depression, respectively. A total of 102 patients received a permanent SCS device after the one-week trial period. Compared to those who did not receive a permanent SCS device, these patients reported significantly higher pain intensity, the mean NRS 6.9 (SD=1.3) vs. 6.1 (SD=0.9), p=0.017, and significantly more depressive symptoms, the mean BDI 13.8 (SD=8.2) vs. 9.3 (SD=4.8), p=0.034. Thirteen patients had the permanent SCS device explanted during the follow-up.

At the time of the study, 79 patients with a permanent device had been followed up for a year, of whom the complete follow-up data was available for 59 (75%) patients. Patients were divided into low and high anxiety groups based on BAI scores <16 (n=43) and ≥16 (n=16), signifying minimal to mild and moderate to severe anxiety, respectively. At baseline, patients in the high anxiety group did not report higher pain than those in the low anxiety group, the mean NRS 6.7 (SD=1.3) vs 6.7 (SD=1.5), p=0.991, but were significantly more disabled, the mean ODI 57.3 (SD=11.8) vs 42.7 (SD=13.0), p<0.001, had significantly higher likelihood of having neuropathic pain, the mean painDETECT score 22.5 (SD=5.4) vs 19.2 (SD=5.6), p=0.02, and reported significantly more depressive symptoms, the mean BDI 20.4 (SD=7.2) vs 10.1 (SD=5.8), p<0.001. The baseline characteristics are presented in Table 1 and Table 2.

THE FOLLOW-UP

Among the low anxiety group, a significant improvement from the baseline was seen in reported pain intensity at 6 months and the improvement remaining at 12-month follow-up, with the mean NRS score decreasing from 6.7 (SD=1.3) to 4.8 (SD=2.4) and 4.8 (SD=2.2) (p<0.001), respectively. Likewise, the low anxiety group experienced a significant improvement in functioning, with the mean ODI decreasing from 42.7 (SD=13.0) to 35.1 (SD=14.1) and 36 (SD=14.8) (p=0.001). In contrast, the high anxiety group did not experience a significant reduction in pain intensity during the follow-up, with the mean NRS score 6.7 (SD=1.5) at baseline, 6.0 (SD=1.8) at 6 months and 6.4 (SD=2.1) at 12 months (p=0.267). The high anxiety group experienced
an improvement in functioning at 6 months, but had deteriorated at 12 months, with the mean ODI 57.3 (SD=11.8), 48.3 (SD=17.6) and 51.6 (SD=19.7), respectively (p=0.110). Though both the low and high anxiety groups showed a statistically significant reduction in painDETECT scores during the follow-up, p<0.001 and p=0.003 respectively, the high anxiety group still exhibited a high likelihood of neuropathic pain at the end of the follow-up, as opposed to a slight component of neuropathic pain of the low anxiety group. Neither group experienced significant reduction in anxiety or depressive symptoms, with the high anxiety group reporting a significantly higher degree of both anxiety and depressive symptoms at 6- and 12-month follow-ups. The findings are presented in Table 3.
High level of anxiety predicts a poor response to spinal cord stimulation in failed back surgery syndrome: a prospective study

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The P-values were calculated by comparing the low-anxiety and high-anxiety groups using Fisher’s exact test for nominal and the independent-samples t-test for scale variables or Mann-Whitney U test if the data was non-normally distributed. FBSS=failed back surgery syndrome SCS=spinal cord stimulation, BAI= Beck Anxiety Inventory.

<table>
<thead>
<tr>
<th></th>
<th>FBSS patients (n=118)</th>
<th>BAI&lt;16 (n=43)</th>
<th>BAI≥16 (n=16)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean, SD)</td>
<td>52.2 ± 12.5</td>
<td>51.4 ± 13.2</td>
<td>57.0 ± 15.0</td>
<td>0.169</td>
</tr>
<tr>
<td>Gender (male, %)</td>
<td>53 (45 %)</td>
<td>20 (47 %)</td>
<td>8 (50 %)</td>
<td>1.00</td>
</tr>
<tr>
<td>Posterior lumbar fusion (n, %)</td>
<td>42 (36 %)</td>
<td>11 (26 %)</td>
<td>7 (44 %)</td>
<td>0.212</td>
</tr>
<tr>
<td>Numeric Pain Rating Scale (mean ± SD)</td>
<td>6.8 ± 1,2</td>
<td>6.7 ± 1,3</td>
<td>6.7 ± 1,5</td>
<td>0.991</td>
</tr>
<tr>
<td>PainDETECT (mean ± SD)</td>
<td>20.4 ± 5.6</td>
<td>19.2 ± 5.6</td>
<td>22.5 ± 5.4</td>
<td>0.023</td>
</tr>
<tr>
<td>Oswestry Disability Index (mean ± SD)</td>
<td>47.6 ± 13.2</td>
<td>42.7 ± 13.0</td>
<td>57.3 ± 11.8</td>
<td>0.002</td>
</tr>
<tr>
<td>Beck Anxiety Inventory (mean ± SD)</td>
<td>11.7 ± 7.8</td>
<td>7.8 ± 4.4</td>
<td>20.9 ± 4.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Beck Depression Inventory (mean ± SD)</td>
<td>13.2 ± 8.0</td>
<td>10.1 ± 5.8</td>
<td>20.4 ± 7.2</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
Table 2. Baseline comparison of FBSS patients based on whether a permanent SCS device was implanted after the one-week trial stimulation.

<table>
<thead>
<tr>
<th></th>
<th>Permanent device implanted (n=102)</th>
<th>No permanent device implanted (n=16)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean, SD)</td>
<td>52.0 ± 12.9</td>
<td>53.5 ± 10.2</td>
<td>0.647</td>
</tr>
<tr>
<td>Gender (male, %)</td>
<td>49 (48 %)</td>
<td>4 (25 %)</td>
<td>0.108</td>
</tr>
<tr>
<td>Posterior lumbar fusion (n, %)</td>
<td>37 (36 %)</td>
<td>5 (31 %)</td>
<td>0.785</td>
</tr>
<tr>
<td>Numeric Pain Rating Scale (mean ± SD)</td>
<td>6.9 ± 1.3</td>
<td>6.1 ± 0.9</td>
<td>0.009</td>
</tr>
<tr>
<td>Oswestry Disability Index (mean ± SD)</td>
<td>47.9 ± 13.3</td>
<td>45.6 ± 13.1</td>
<td>0.534</td>
</tr>
<tr>
<td>Beck Anxiety Inventory (mean ± SD)</td>
<td>11.8 ± 7.9</td>
<td>10.9 ± 7.8</td>
<td>0.868</td>
</tr>
<tr>
<td>Beck Depression Inventory (mean ± SD)</td>
<td>13.8 ± 8.2</td>
<td>9.3 ± 4.8</td>
<td>0.031</td>
</tr>
</tbody>
</table>

The P-values were calculated using Fisher’s exact test for nominal and the independent-samples t-test for scale variables or Mann-Whitney U test if the data was non-normally distributed. SCS=spinal cord stimulation, BAI= Beck Anxiety Inventory.
Table 3. The changes in the outcome variables at 6 and 12 months post-surgery for the low anxiety (n=43) and the high anxiety group (n=16).

<table>
<thead>
<tr>
<th>Outcome variables</th>
<th>At baseline (mean ± SD)</th>
<th>At 6 months (mean ± SD)</th>
<th>At 12 months (mean ± SD)</th>
<th>Wilks' Lambda</th>
<th>F (df, df error)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeric Pain Rating Scale</td>
<td>BAI&lt;16</td>
<td>6.7 ± 1.3</td>
<td>4.8 ± 2.4</td>
<td>4.8 ± 2.2</td>
<td>0.504</td>
<td>F (2.39) = 19.157</td>
</tr>
<tr>
<td></td>
<td>BAI≥16</td>
<td>6.7 ± 1.5</td>
<td>6.0 ± 1.8</td>
<td>6.4 ± 2.1</td>
<td>0.828</td>
<td>F (2.14) = 1.453</td>
</tr>
<tr>
<td>OSWESTRY</td>
<td>BAI&lt;16</td>
<td>42.7 ± 13.0</td>
<td>35.1 ± 14.1</td>
<td>36 ± 14.8</td>
<td>0.698</td>
<td>F (2.38) = 8.210</td>
</tr>
<tr>
<td></td>
<td>BAI≥16</td>
<td>57.3 ± 11.8</td>
<td>48.3 ± 17.6</td>
<td>51.6 ± 19.7</td>
<td>0.712</td>
<td>F (2.13) = 2.527</td>
</tr>
<tr>
<td>PainDETECT</td>
<td>BAI&lt;16</td>
<td>19.2 ± 5.6</td>
<td>13.9 ± 7.2</td>
<td>14.4 ± 6.1</td>
<td>0.521</td>
<td>F (2.40) = 18.396</td>
</tr>
<tr>
<td></td>
<td>BAI≥16</td>
<td>22.5 ± 5.4</td>
<td>18.1 ± 5.9</td>
<td>19.2 ± 5.9</td>
<td>0.411</td>
<td>F (2.13) = 9.301</td>
</tr>
<tr>
<td>Beck Anxiety Inventory</td>
<td>BAI&lt;16</td>
<td>7.8 ± 4.4</td>
<td>7.8 ± 6.5</td>
<td>8.1 ± 6.3</td>
<td>0.996</td>
<td>F (2.39) = 0.086</td>
</tr>
<tr>
<td></td>
<td>BAI≥16</td>
<td>20.9 ± 4.0</td>
<td>17.7 ± 8.1</td>
<td>17.1 ± 6.4</td>
<td>0.693</td>
<td>F (2.14) = 3.103</td>
</tr>
<tr>
<td>Beck Depression Inventory</td>
<td>BAI&lt;16</td>
<td>10.1 ± 5.8</td>
<td>9.1 ± 7.4</td>
<td>8.3 ± 7.5</td>
<td>0.915</td>
<td>F (2.36) = 1.673</td>
</tr>
<tr>
<td></td>
<td>BAI≥16</td>
<td>20.4 ± 7.2</td>
<td>19.1 ± 10.4</td>
<td>19.8 ± 10.5</td>
<td>0.955</td>
<td>F (2.14) = 0.328</td>
</tr>
</tbody>
</table>

The statistical test used was one-way repeated-measures ANOVA. BAI=Beck Anxiety Inventory.
DISCUSSION

In this prospective study of consecutive FBSS patients treated with SCS, we demonstrated that patients with moderate to severe anxiety at baseline did not significantly benefit from the treatment in 1-year follow-up, in terms of pain intensity according to NRS and pain-related disability according to ODI, despite sufficient pain relief in the 1-week trial period prior to the implantation of the permanent SCS device. Patients with moderate to severe anxiety at baseline reported higher pain-related disability at baseline, as well as higher prevalence of depressive symptoms, and they had a significantly higher likelihood of having neuropathic pain before SCS operation. Though a statistically significant reduction in painDETECT score was observed in patients with moderate to severe anxiety at baseline, they still exhibited a high likelihood of neuropathic pain at the end of the follow-up.

In contrast, in patients with minimal to mild anxiety symptoms, a significant reduction in pain intensity was achieved according to NRS, as well as a significant improvement in functioning according to ODI, demonstrating the efficacy of SCS in FBSS.

In this study, the treatment did not seem to affect the severity of the depressive or anxiety symptoms, regardless of the severity of the symptoms at baseline, which is contrary to the findings of Sparkes et al. who reported significant improvement in both depressive and anxiety symptoms after SCS implantation. It should be noted that patients with untreated severe depression or untreated severe anxiety are not considered for SCS treatment, but are referred to a psychiatrist if feasible. Adequately managed depression or anxiety disorder are not a contraindication for SCS.

Unfortunately, we were unable to control for the putative ongoing psychiatric treatment these patients might have had, as there is evidence that concurrent pharmacological treatment can significantly alleviate depressive symptoms after SCS. Further research is required to examine whether concurrent treatment of anxiety would alleviate these symptoms or enhance the outcome in SCS. Further, as severe cases of anxiety and depression were excluded from SCS, our findings may not reflect the prevalence of anxiety and depressive symptoms among other patient populations with chronic pain. In general, our findings are in line with previous studies, and further highlight the importance of psychological factors affecting the SCS outcome. As a strength of the present study, we had an unselected patient cohort of 118 consecutive FBSS patients referred to SCS between January 1, 2015 and December 31, 2018, reducing the risk of selection bias. In addition, to assess clinical outcome reliably, the present study had two follow-ups, at six months and one year, after the SCS operation. It has been reported that loss of analgesia may be experienced within 12 to 24 months after the SCS implantation, and this limitation should be addressed in future studies.

CONCLUSION

In conclusion, this study demonstrated that anxiety may diminish the long-term efficacy of SCS. Among patients reporting moderate to severe anxiety at baseline, the SCS outcome was significantly worse at 1-year follow-up than among those reporting only minimal to mild anxiety before SCS treatment. This study can potentially help decision making relating to the suitability of SCS therapy for patients with neuropathic pain, and our data supports multidisciplinary treatment of patients with chronic pain.
High level of anxiety predicts a poor response to spinal cord stimulation in failed back surgery syndrome: a prospective study

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References

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