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SUICIDE MORTALITY IN NON-AFFECTIVE PSYCHOTIC DISORDERS: NATIONWIDE EVIDENCE ON RISK FACTORS AND TEMPORAL PATTERNS

ABSTRACT

Individuals with non-affective psychotic disorders experience substantially higher suicide mortality than the general population, particularly during the early stages of illness. Despite relatively stable suicide rates in the general population in recent years, evidence on temporal trends and the evolution of suicide risk among people with non-affective psychoses remains limited. We examined suicide mortality among individuals with non-affective psychoses by identifying demographic and clinical risk factors, assessing temporal and regional variation and modelling suicide hazard trajectories from first diagnosis. Using nationwide Finnish register data, we followed individuals with non-affective psychotic disorders between 2012 and 2024. Risk factors were examined using survival analysis with time-varying covariates, and suicide hazard trajectories following first diagnosis were estimated among incident cases. During 2012–2024, 1 129 individuals with non-affective psychotic disorders died by suicide. Suicide mortality was substantially higher among men than women and remained largely stable over time, with no clear temporal trend and no statistically significant regional variation. In survival analyses, male sex, younger adult age, acute and transient psychotic disorders, unspecified psychoses, comorbid substance use disorders and depressive disorders were associated with increased suicide risk, whereas the use of residential social care services was associated with a markedly reduced risk. Suicide hazard peaked immediately after first diagnosis, especially among men, and declined sharply during the first two years, continuing to decrease gradually thereafter. Taken together, suicide mortality remained largely stable over time; however, suicide risk among individuals with non-affective psychotic disorders was high and concentrated in identifiable high-risk periods and clinical contexts, indicating substantial potential for prevention. Suicide prevention strategies for people with non-affective psychotic disorders should prioritize early illness phases, timely care during high-risk periods and integrated treatment of substance use disorders. Further research is warranted to better understand factors underlying the potentially protective role of residential social care services.

KEYWORDS: SUICIDE MORTALITY, NON-AFFECTIVE PSYCHOTIC DISORDERS, PSYCHIATRIC EPIDEMIOLOGY, RISK FACTORS, LONGITUDINAL COHORT STUDY, TIME TRENDS, EARLY PSYCHOSIS, NATIONWIDE REGISTERS

INTRODUCTION

Non-affective psychotic disorders are associated with markedly elevated suicide risk, representing one of the leading contributors to premature mortality in this population. A large body of research has demonstrated that people with non-affective psychotic disorders experience substantially higher rates of suicidal thoughts, attempts and deaths compared with the general population. A meta-analysis reported suicide mortality of approximately 4% in first-episode psychosis cohorts with more than ten years of follow-up (1). Elevated suicide risk has been consistently observed among men, and those presenting with comorbid affective symptoms or substance use (2–4).

The early phase of psychotic illness is consistently identified as a period of heightened risk for suicide mortality. Studies of first-episode psychosis report high rates of suicidal ideation, self-harm and suicide mortality shortly after onset of psychosis (5). For example, a UK cohort reported suicide rates of 304 per 100 000 person-years during the first year, which dropped to 127 per 100 000 person-years between 10 and 20 years (6). Risk is also elevated following psychiatric hospitalization across the course of illness (7).

Over the past three decades, suicide mortality has declined in the general population in many countries (8). In Finland, suicide rates fell steadily from the 1990s until approximately 2015–2020, after which the rate has remained relatively stable (9). Despite the long-term reduction in suicide mortality in the general population, there is limited evidence on temporal trends in suicide mortality among people with non-affective psychoses. This evidence gap is especially relevant because, at the same time, psychiatric hospital bed capacity has declined and inpatient stays have shortened (10). Some studies have shown that the suicide rate has declined among people discharged from psychiatric inpatient care (11–13). A Finnish study later showed that the standardized mortality ratio for suicide among individuals with schizophrenia in Finland declined from 11.0 in 1984 to 6.6 in 2014 (14). Understanding these trends is crucial, as they may reflect broad changes in mental health service organization, treatment accessibility and the quality of ongoing care.

In this study, we use nationwide Finnish register data to examine suicide mortality among individuals with non-affective psychoses. Our objectives were to identify demographic and clinical risk factors for suicide, to assess temporal and regional patterns in suicide mortality in Finland, and to quantify suicide hazard trajectories from the first diagnosis to capture how suicide risk evolves during the early and later phases of illness. Together, these analyses provide an up-to-date and detailed overview of suicide mortality and its risk factors in non-affective psychosis.

METHODS

DATA SOURCES AND STUDY POPULATION

The Finnish Quality of Psychosis Care Register (FQPCR) includes all people with at least one diagnosis of non-affective psychotic disorder in the Care Register for Health Care or in the Register of Primary Health Care visits since January 1st, 2010. Non-affective psychotic disorder was defined as either International Classification of Diseases (ICD-10) codes F20-F29 (schizophrenia, schizotypal and delusional disorders) or International Classification of Primary Care (ICPC-2) codes P72 (schizophrenia) or P98 (other psychosis) when assigned by a physician.

Three exclusion criteria were applied: (i) Non-affective psychotic disorder diagnoses assigned before the age of 7 were disregarded; (ii) People with a dementia diagnosis or dementia-related medication before their first non-affective psychotic disorder diagnosis; and (iii) People whose diagnosis had only been assigned during psychiatric hospitalization, but the diagnosis was not confirmed by discharge diagnosis (Holm et al. 2024). People with exclusion criterion (i) and (iii) are included if a non-affective psychotic disorder diagnosis appears later, whereas (ii) is a permanent exclusion criterion. Register data linked to the FQPCR is listed in *Table 1*. The data are updated yearly, including addition of new patients meeting the inclusion criteria.

We used a hierarchical definition for diagnosis, with the one highest in the hierarchy used if present at least once: schizophrenia (ICD-10: F20), schizoaffective disorders (F25), delusional disorders (F22 and F24), acute and transient psychotic disorders (F23), schizotypal disorder (F21), other non-organic psychotic disorders (F28) and unspecified non-organic psychosis (F29).

The quality registry project received permission to use national register data from the Finnish Institute for Health and Welfare (THL). Under Finnish legislation, register-based studies using only administrative data do not require separate ethics committee approval or informed consent.

Table 1. Registers included in the Finnish Quality of Care Register

Register	Description of available data	Years covered
Care Register for Health Care (THL)	Specialized outpatient visits (including dental care), all inpatient care (primary or specialized)	Since 1996
Care Register for Social Welfare (THL)	E.g. supported housing unit stays	Since 1995
Register of Primary Health Care visits (THL)	Primary healthcare visits and dental care	Since 2011
Register for Reimbursements for Prescription Medicines (SII)	All purchases of prescription medicines	Since 1995
Register for Special Reimbursement Right (SII)	Entitlements for special reimbursement for chronic conditions, including non-affective psychosis	Since 1995
Reimbursements for rehabilitation (SII)	Occupational rehabilitation, psychotherapy	Since 1995
Sickness allowances and disability pensions (SII, Finnish Centre for Pensions)	Starting and ending dates for sickness allowances and disability pensions and related diagnoses	Since 1995
Prescription register (SII)	All medication prescriptions	Since 2017
FOLK data (SF) (Socioeconomic information)	Education, employment, family, living arrangements, etc. See https://aineistokatalogi.fi/catalog/studies/a6946178-3c4d-432e-b4bd-7b32b80932af	Since 1996
Mortality statistics (SF)	Causes of death	Since 2010

THL=Finnish Institute for Health and Welfare, SII=Social Insurance Institution, SF=Statistics Finland

STUDY DESIGN AND FOLLOW-UP

Analyses covered the calendar years 2012–2024. Individuals contributed person-time from the later of (a) their first eligible non-affective psychotic disorder diagnosis date, or (b) 1 January 2012. Follow-up continued until 31 December 2024, or death, whichever occurred first. Follow-up was interrupted at emigration and resumed if they subsequently returned to Finland.

We constructed two analysis datasets:

1. Yearly cumulative cohorts of individuals under treatment (for annual suicide mortality rates and Poisson models). A person was considered to be 'under treatment' for the year if they had received treatment for a non-affective psychotic disorder during that calendar year or the two preceding years.
2. The full cohort (2012–2024) with time-updated covariates (for risk factor analyses and cause-specific hazards).

For the analysis of suicide risk following first diagnosis, we restricted the cohort to incident cases whose first eligible diagnosis occurred on or after 1 January 2012, and who did not have a pre-existing special reimbursement right for the treatment of severe mental disorder (code 112) in the Register for Special Reimbursement Right maintained by the Social Insurance Institution of Finland.

OUTCOME

Deaths by suicide were ascertained from the Cause of Death Register maintained by Statistics Finland. The register includes all individuals who have died in Finland as well as persons with a valid Finnish personal identity number who died abroad. The suicides were defined as ICD-10 codes X60–X84 and Y87. During 2012–2024, there were 10,164 deaths from suicide.

COVARIATES

Sociodemographic characteristics, clinical diagnoses and service use were treated as time-varying covariates unless otherwise specified. Sex and age at first eligible psychosis diagnosis were included as fixed sociodemographic covariates.

The primary psychosis diagnosis was treated as a time-varying exposure. At each time point, individuals were assigned to the highest hierarchical psychosis diagnosis they had received up to that date.

Substance use disorders were defined using ICD-10 codes F10–F19, excluding F17 (nicotine dependence) and treated as time-varying covariates. At each time point during follow-up, individuals were considered to have a recent substance use disorder if they had any diagnosis within the preceding five years, a past substance use disorder if they had a substance use disorder diagnosis earlier but not within five years, and no substance use disorder if they had never received such diagnosis. Depressive disorders were also included as time-varying covariates and classified into psychotic depression (F32.3 or F33.3) and non-psychotic depression (F32–F33 excluding psychotic subtypes). Bipolar disorder (F30–F31) was similarly modelled as a time-varying covariate.

Use of residential social care services was included as a time-varying indicator reflecting periods during which individuals lived in supported housing facilities. The data was obtained from the Care Register for Social Welfare. Psychiatric hospitalizations were incorporated in a table as descriptive information. Regional variation was examined across all 22 wellbeing services counties on the Finnish mainland. To account for potential period effects, the COVID-19 pandemic period (the years 2020–2021) was included as an additional binary covariate.

STATISTICAL ANALYSIS

Annual suicide mortality rates per 100 000 person-years were calculated for the calendar years 2012–2024 stratified by sex. Time trends in suicide mortality by sex were examined using Poisson regression with a log link, with the number of suicides as the outcome and the log of person-years as an offset. The model adjusted for calendar year as a continuous variable, sex and an indicator for the COVID-19 period (2020–2021). Rate ratios (RRs) with 95% confidence intervals (CIs) were reported. Regional variation in suicide mortality was examined by aggregating all suicide deaths and person-years across the full follow-up period (2012–2024) for each wellbeing services county. Area-level differences were assessed using a Poisson regression model with the number of deaths as the outcome and the log of person-years as an offset, adjusting for sex. Overall regional variation was evaluated using a likelihood ratio chi-square test from the Poisson model.

Risk factors for suicide were examined using Cox proportional hazards regression in the full cohort. Follow-up time was split into episodes defined by changes in time-varying covariates. The timescale was years since cohort entry. The model included sex and age at cohort entry as fixed baseline covariates, with age grouped into five categories (≤20, 21–35, 36–50, 51–65, >65 years). The hierarchical non-affective psychosis diagnosis, substance use disorders, bipolar disorder, psychotic depression and non-psychotic depression were modelled as time-varying covariates, as was the use of residential social care services.

To characterize the evolution of suicide risk following the first non-affective psychosis diagnosis in incident cases, sex-specific cause-specific hazard functions were estimated using B-spline smoothed hazards, with time since first non-affective psychosis diagnosis as the time axis.

All analyses were performed using R version 4.5.3, with packages including survival, data.table, bshazard, dplyr and ggplot2.

RESULTS

STUDY POPULATION AND DESCRIPTIVE CHARACTERISTICS

During 2012–2024, a total of 1129 individuals with non-affective psychotic disorders died by suicide, corresponding to approximately 11% of all suicide deaths in Finland during 2012–2024 (n=10,164). Their demographic and clinical characteristics differed from those of the remaining population (*Table 2*). Men accounted for two-thirds of suicide deaths, whereas the comparison population had an approximately equal sex distribution. Individuals who died from suicide were more often in younger adult age groups, with 41% aged 21–35 years, compared with 23% in the comparison population.

There were notable differences in diagnostic profiles. Acute and transient psychotic disorders and unspecified non-organic psychoses were more common among those who died by suicide, whereas schizophrenia was less prevalent in this group. Substance use disorders were also markedly over-represented: 48% of those who died from suicide had a lifetime substance use diagnosis, compared with 31% in the comparison population, and substance-related diagnoses within the last 12 months of follow-up were more than twice as common. Psychiatric hospitalization within the last 12 months of follow-up was substantially more common among individuals who died by suicide (64% vs. 29%). Together, these descriptive findings suggest that people who died from suicide were younger, more often male and exhibited higher levels of substance use comorbidity and recent hospital care.

Table 2. Demographic and clinical characteristics of individuals with non-affective psychotic disorders, comparing suicide decedents based on their last year of life with individuals under treatment in 2024

	Description of available data		Comparison population in 2024	
	n	%	*n*	%
Sex				
Men	758	67.4%	28619	51.3%
Women	367	32.6%	27199	48.7%
Age category				
≤ 20	30	2.7%	1760	3.2%
21-35	466	41.4%	13033	23.3%
36-50	313	27.8%	14738	26.4%
51-65	224	19.9%	13330	23.9%
Over 65	92	8.2%	12957	23.2%
Diagnosis				
Schizophrenia	426	37.9%	28630	51.3%
Schizoaffective disorders	104	9.2%	5297	9.5%
Delusional disorders	106	9.4%	6185	11.1%
Acute and transient psychotic disorders	138	12.3%	4065	7.3%
Schizotypal disorder	18	1.6%	837	1.5%
Other non-organic psychotic disorders	10	0.9%	758	1.4%
Unspecified non-organic psychotic disorder	314	27.9%	9975	17.9%
ICPC-2 diagnosis only	9	0.8%	71	0.1%
Diagnosis, within the last 12 months of follow-up				
Non-affective psychosis diagnosis	956	85.0%	42229	75.7%
Other F-diagnosis	87	7.7%	3678	6.6%
No F-diagnosis	82	7.3%	9911	17.8%
Substance use diagnosis, lifetime				
Yes	542	48.2%	17573	31.5%
No	583	51.8%	38245	68.5%
Substance use diagnosis, within the last 12 months of follow-up				
Yes	326	29.0%	6594	11.8%
No	799	71.0%	49224	88.2%

	Description of available data		Comparison population in 2024	
	n	%	*n*	%
Number of hospitalizations, after the index diagnosis				
No hospitalizations	92	8.2%	7041	12.6%
1-5	655	58.2%	28811	51.6%
6 or more	378	33.6%	19966	35.8%
Any hospitalization within the last 12 months of follow-up				
Yes	724	64.4%	16196	29.0%
No	401	35.6%	39622	71.0%
Residential social care services over the lifetime				
Yes	354	31.5%	20875	37.4%
No	771	68.5%	34943	62.6%
Residential social care services, within the last 12 months of follow-up				
Yes	167	14.8%	10802	19.4%
No	958	85.2%	45016	80.6%

TIME TRENDS AND REGIONAL VARIATION

Between 2012 and 2024, suicide mortality among individuals with non-affective psychotic disorders remained largely stable. Crude suicide mortality was substantially higher among men (226 per 100,000 person-years) than among women (112 per 100,000 person-years). *Figure 1* shows the annual suicide mortality rates per 100 000 person-years for men and women. Annual suicide rates showed modest year-to-year fluctuations with no clear pattern. In the adjusted Poisson regression, calendar year was not associated with suicide mortality. Women had 50% lower suicide mortality than men (RR=0.50, 95% CI 0.44–0.56, p<.001). The COVID-19 period was associated with a non-significant reduction in suicide mortality (RR=0.86, 95% CI 0.72–1.02, p=0.10).

Observed crude suicide rates ranged from 42 to 187 per 100 000 person-years among women and from 159 to 316 per 100 000 person-years among men across the wellbeing services counties (*Figure 2*), but these differences did not reach statistical significance ($\chi^2(21)=24.2$, p=0.28).

Figure 1. Annual suicide mortality rates per 100,000 person-years for men and women during the study period

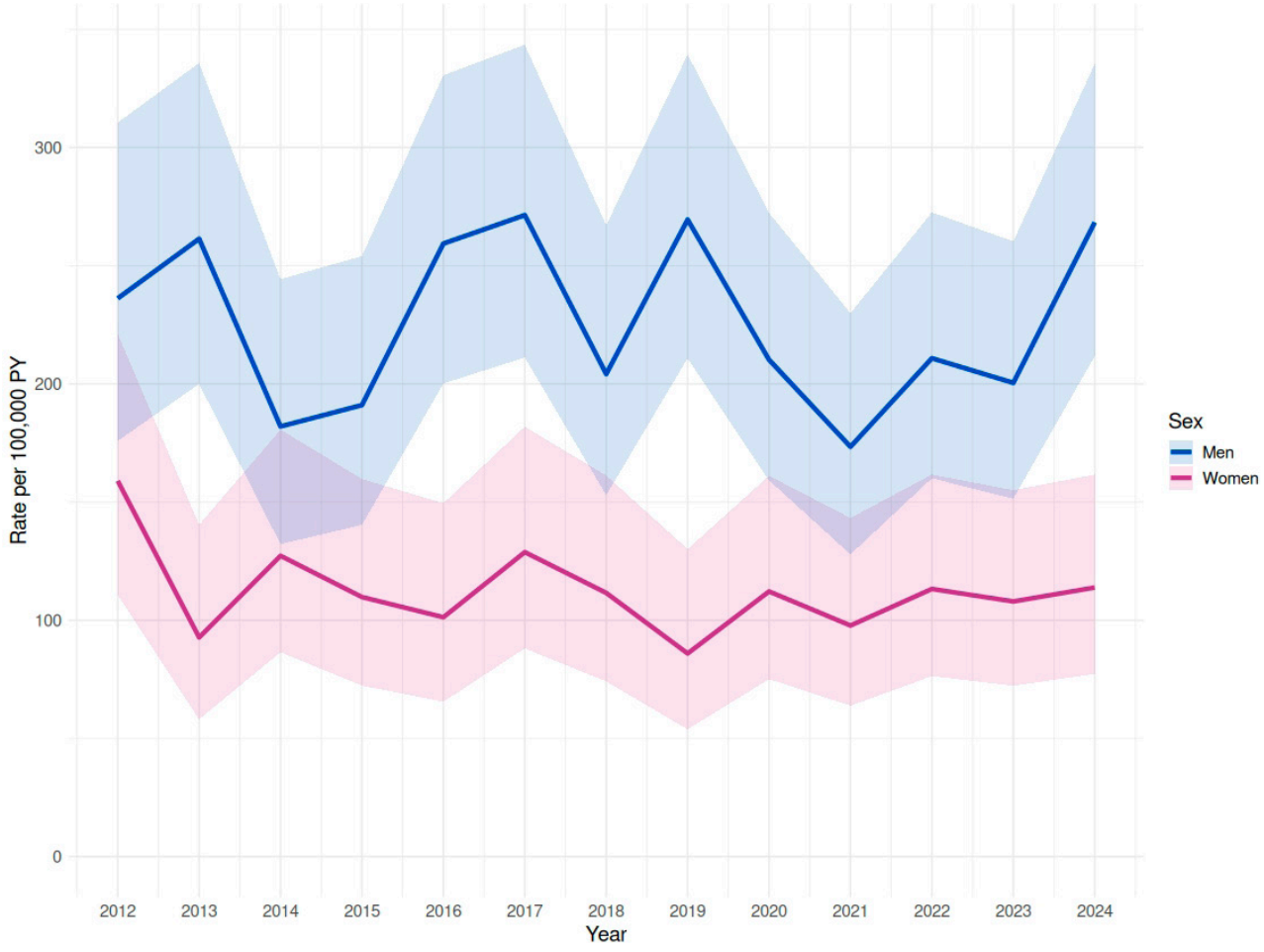
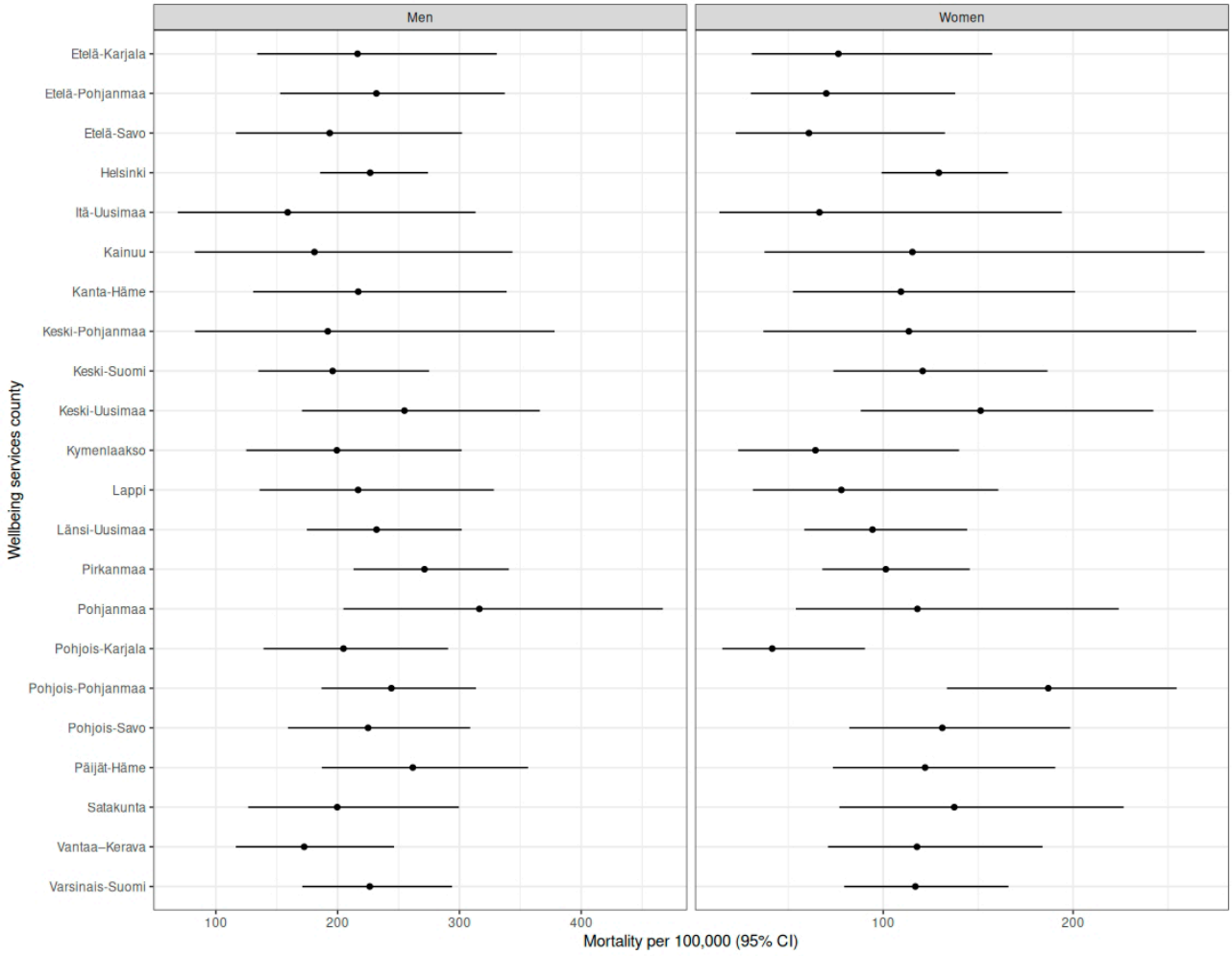


Figure 2. Suicide mortality rates across wellbeing services counties among men and women. Substantial variation in observed rates was seen across counties for both sexes. However, differences did not reach statistical significance ($\chi^2(21)=24.2$, $p=0.28$)



RISK FACTORS FOR SUICIDE

In the multivariable Cox regression model, several demographic and clinical characteristics were associated with suicide mortality among individuals with non-affective psychotic disorders (*Table 3*). Women had a substantially lower hazard of suicide than men (HR=0.51, 95% CI 0.47–0.57). Compared with adults aged 36–50 years, the hazard was higher among those aged 21–35 years (HR=1.18, 95% CI 1.03–1.36).

Compared with schizophrenia, the hazard was elevated for acute and transient psychotic disorders (HR=1.69, 95% CI 1.42–2.02) and unspecified non-organic psychoses (HR=1.51, 95% CI 1.31–1.75). Regarding comorbid conditions, recent substance use disorder diagnosis (HR=2.19, 95% CI 1.94–2.46), past substance use disorder diagnosis (HR=1.52, 95% CI 1.18–1.95), and both psychotic (HR=1.40, 95% CI 1.20–1.64) and non-psychotic depression (HR=1.51, 95% CI 1.33–1.71) were associated with increased hazard. In contrast, residential social care services were associated with a markedly lower hazard of suicide (HR=0.14, 95% CI 0.09–0.21).

Table 3. Multivariable Cox regression analysis of suicide mortality among individuals with non-affective psychotic disorders

Characteristic	HR	95% CI	p-value
Sex	0.51	0.47–0.57	< .001
Age category			
36–50 (ref)	NA	NA	—
Under 20	0.95	0.78–1.15	.59
21–35	1.18	1.03–1.36	.02
51–65	0.95	0.78–1.15	.60
Over 65	0.82	0.60–1.11	.20
Diagnosis			
Schizophrenia (ref)	NA	NA	—
Schizoaffective disorders	1.10	0.88–1.36	.40
Delusional disorders	1.14	0.93–1.40	.22
Acute and transient psychotic disorders	1.69	1.42–2.02	< .001
Schizotypal disorder	0.88	0.61–1.25	.47
Other non-organic psychotic disorders	0.86	0.48–1.53	.61
Unspecified non-organic psychotic disorder	1.51	1.31–1.75	< .001
ICPC-2 diagnosis only	1.68	0.92–3.06	.09
Substance use disorder			
No (ref.)	NA	NA	—
Past	1.52	1.18–1.95	.001
Recent (diagnosis within five years)	2.19	1.94–2.46	< .001
Bipolar disorder	1.10	0.95–1.28	.22
Psychotic Depression	1.40	1.20–1.64	< .001
Non-psychotic Depression	1.51	1.33–1.71	< .001
Residential social care services	0.14	0.09–0.21	< .001

Abbreviations: CI=Confidence Interval, HR=Hazard Ratio

SUICIDE RISK AFTER FIRST DIAGNOSIS

The suicide hazard peaked immediately after the first psychiatric diagnosis for both men and women, with a markedly higher level among men (*Figure 3*). In men, the hazard reached approximately 0.012 per person-year at first diagnosis, whereas among women the peak was substantially lower, about 0.002-0.003. The hazard decreased sharply during the first two years and continued to decline gradually thereafter. By ten years after first diagnosis, the hazards had fallen to around 0.001 in men and below 0.0005 in women. Overall, the results indicate that the suicide risk is highest immediately after first diagnosis, particularly among men, and then declines steadily over time.

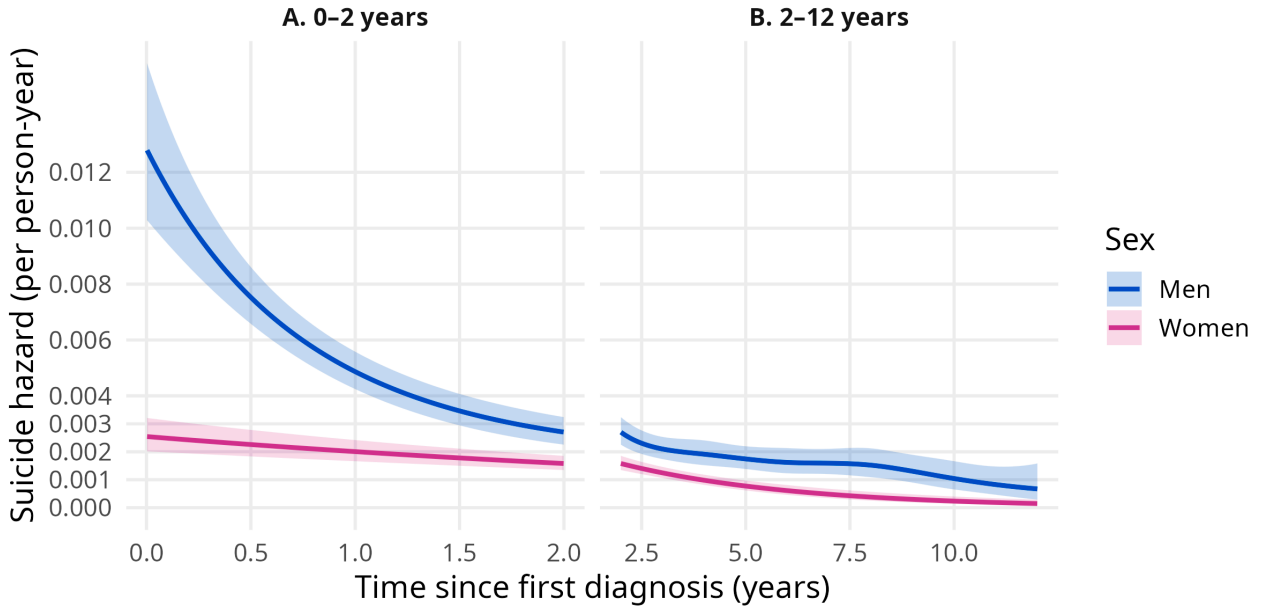
DISCUSSION

In this nationwide register-based study, we examined suicide mortality among individuals with non-affective psychotic disorders in Finland, focusing on demographic and clinical risk factors, temporal and regional variation and suicide hazard trajectories from the time of first diagnosis. Our results show that suicide mortality has remained relatively stable in people with non-affective psychotic disorders over the past decade. Despite this stability, suicide mortality in this population was very high in absolute terms. Compared with the general population, mortality levels were more than ten times higher (9). In addition, our findings provide updated nationwide evidence on the timing and clinical context of suicide risk, largely consistent with international literature and previous Finnish studies (4,15), while also highlighting areas where preventive efforts could be strengthened within the Finnish mental healthcare system.

In Finland, substantial declines in suicide mortality were observed in the general population from the 1990s until around 2015 (9), during which also suicide mortality in people with non-affective psychotic disorders declined (14), followed by a period of stabilization in the general population. Consistent with this pattern, our analyses showed that suicide mortality among individuals with non-affective psychotic disorders has remained largely stable during the study period. The stability of suicide mortality in this population suggests that the potential for further reductions in suicide mortality among individuals with non-affective psychotic disorders may be limited without additional, targeted preventive strategies aimed at this high-risk population.

The first two years after the first diagnosis were associated with the highest risk of suicide mortality, and the risk was particularly high for males. This finding is consistent with earlier research (6,16,17). In addition, suicide risk was higher among young adults, in line with earlier research (4,6). These results emphasize the importance of intensive, multimodal treatment and services and psychosocial interventions for young people with recent-onset psychosis (18,19).

Figure 3. Cause-specific suicide hazard after first psychiatric diagnosis among men and women. Hazard peaks immediately after diagnosis and declines steadily over time



Acute and transient psychotic disorders as well as unspecified psychosis were associated with higher suicide risk. Both diagnoses are commonly used in Finnish psychiatric services for young people with psychotic illness, even after multiple episodes. An area of further study in Finland would be whether a diagnosis suggesting mild or transient psychotic disorder is potentially associated with a risk of less intensive treatment or drop out from treatment.

Both recent and past substance use disorder diagnoses were associated with increased suicide risk, with recent substance use disorder having a larger effect. This result is consistent with several previous studies (2,20,21). A recent report of services for people with severe mental disorders in Finland found that services for people with comorbid psychotic and substance use disorders are currently insufficient in many areas (22). Less than half of the wellbeing services counties had specialized services for these patients in psychiatric inpatient or outpatient services, and providing integrated care was challenging in many areas (22).

Furthermore, having had a diagnosis of mood disorder was associated with increased suicide risk. Depressive symptoms and episodes are an established risk factor for suicide in people with non-affective psychotic disorders (3,5,15,23). This underlines the importance of assessing and treating depression among people with non-affective psychotic disorders.

Recent psychiatric hospitalization was more common in people with non-affective psychotic disorders who had died from suicide than in other cohort members. This association was expected, as suicidality is one indication for psychiatric hospitalization and previous studies have shown elevated suicide risk after discharge from psychiatric inpatient care in individuals with non-affective psychotic disorders as well as transdiagnostically (7,12,23,24). A South Korean study further supports the clinical relevance of the post-discharge period, showing that first outpatient visit within 7 days after discharge was associated with decreased risk of suicide compared to those who had no outpatient visits in the first 30 days after discharge (25). However, timely first outpatient visit may also be a marker of more intensive outpatient treatment and better engagement with services (26).

A novel finding was that stays in residential social care services, including supported housing units, were associated with notably lower suicide risk. The hypothetical mechanisms might be related to having secure living arrangements, social contacts, rehabilitation services, support with treatment adherence and knowledge that professional help is available in the unit if needed. Further research on residential social care services would be very welcome, as there have also been concerns about the quality of these services (27). Future studies should examine the extent to which this association reflects the effects of residential social care services themselves versus differences in the clinical characteristics of patients entering these services, including illness phase, symptom profile and severity of illness.

LIMITATIONS

Diagnostic accuracy is uncertain in register-based research. Furthermore, diagnoses tend to change during the first years of illness, with initial diagnosis of schizophrenia having the highest and acute and transient psychotic disorders the lowest diagnostic stability (28). Thus, individuals who ultimately receive a schizophrenia diagnosis may initially receive less specific psychotic diagnoses. In our hierarchical classification of lifetime diagnoses, these individuals were classified as having schizophrenia. The FQPCR only includes people who have received a diagnosis of non-affective psychotic disorder (ICD-10 diagnostic codes F20-F29), and therefore comparison with substance-induced psychotic disorders and affective psychoses could not be done.

CONCLUSIONS

Despite stable suicide mortality over time, individuals with non-affective psychotic disorders continue to face a substantial risk of suicide. These findings underscore the importance of structured assessment and management of suicide risk throughout illness course, especially at hospital admission as well as around discharge and immediately following the first diagnosis in line with national treatment recommendations (29). Continuity of treatment is a key not only to the good quality of care but also to success in suicide prevention. For young people with recent-onset psychosis, intensive, multimodal treatment, services and psychosocial interventions are needed. Further declines may be achieved by actively addressing modifiable risk factors within this population, such as substance use comorbidity, depressive symptoms or hopelessness emerging from social difficulties and societal alienation.

Conflict of Interest

None

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