


Sharp increase in self-poisonings among adolescent girls during the Covid-19 pandemic: Findings from Norwegian registry data

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Self-harm including self-poisonings is a major health problem among young girls,¹ and there is a concern that the mobility restrictions and social distancing associated with the Covid-19 pandemic may have further reinforced this.

Studies examining trends of self-harm report mixed results,² while a handful studies find an increase in self-poisoning in the first pandemic year.^{3,4} Whether this development continues beyond 2020 is unknown. In this study, we analyse trends in admissions for self-poisoning in specialist health care (SHC) and in contact with the Norwegian Poisons Information Centre (NPIC) prior to and during the pandemic among Norwegian girls aged 10–19 years. We also report the most prevalent poisoning agents.

We obtained data from the Norwegian Patient Registry (NPR) and the NPIC. NPR covers the entire population and is linked to the national reimbursement systems for health services. NPIC is a nationwide service answering questions from the public, healthcare professionals and emergency service about acute poisonings. For every call, the NPIC registers among others age, sex, reason for exposure and substance. This study followed the STROBE reporting guideline. Because the study used aggregated data no ethical approval was required.

We used the mid-year population to calculate admission rates of self-poisoning with medication and biological substance (ICD-10 T4n) in 2011–2021 in the

two age groups 10–14 and 15–19 years. We included both admission where self-poisoning was registered as the primary diagnosis and as the secondary diagnosis. The same procedure was used to calculate the contact rates to the NPIC in 2011–2022. We estimated predictions intervals for 2020 and 2021 based on either averages or linear trends in admission rates in SHC and contact rates to the NPIC in the period 2011–2019. For contact rates to the NPIC we also estimated predictions intervals for 2022.

Figure 1 shows the observed admission rates in SHC and contact rates to the NPIC with prediction intervals for girls aged 10–14 (panel a) and 15–19 (panel b). We did not observe any significant changes in admission rates to SHC and contact with the NPIC from 2019 to the 2020. From 2019 (pre-pandemic) to 2021, the observed admission rates in SHC for self-poisoning increased with 344% and 220% for girls aged 10–14 and 15–19, respectively. These trends were also evident if we restricted to admissions where self-poisoning was the primary diagnosis. The observed contact rates to the NPIC increased by 235% and 169%. The contact rates to the NPIC remained elevated in 2022. The increases were statistically significant. Among girls aged 10–14 years, the admission rates to SHC were 71 per 100,000 in 2019 and 243 per 100,000

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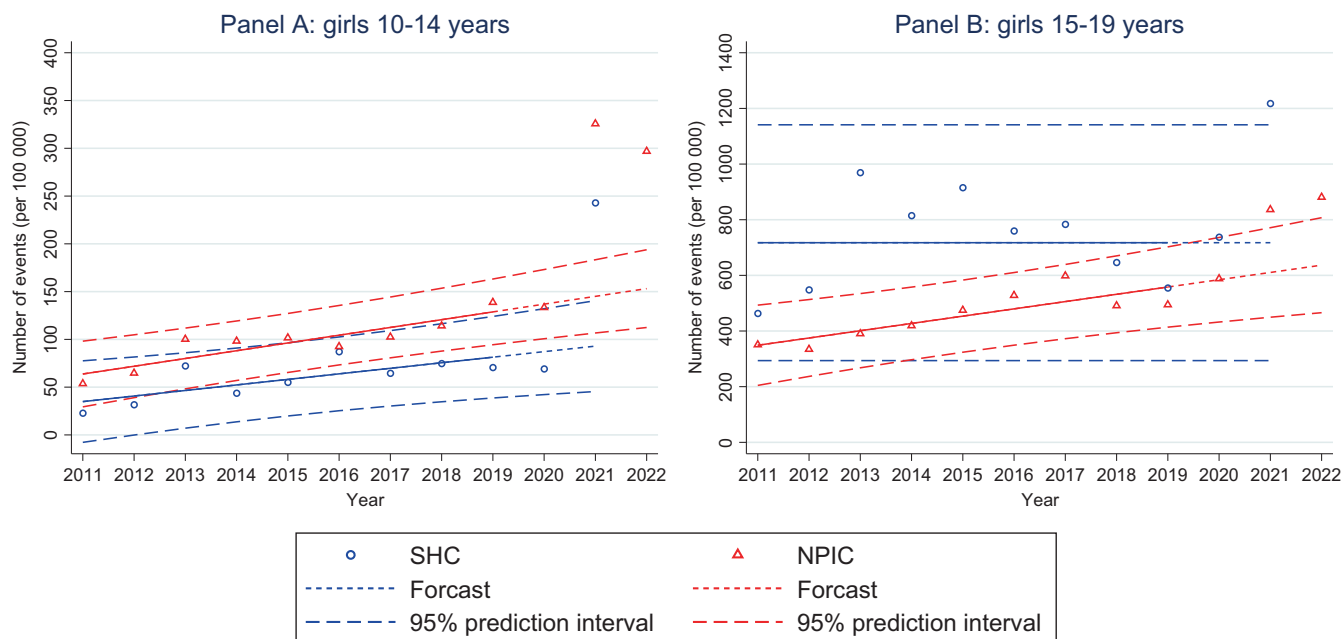


FIGURE 1 Number of admissions to specialist health care and contact with NPIC per 100,000 by age group with 95% prediction intervals. Forecasts with predictions intervals for 2020, 2021, and 2022 were based on linear trends in admissions in specialist health care (SHC) and contact rates to the NPIC in the period 2011–2019. The exception is for the admissions in SHC for girls 15–19 years in which the forecasts were based on the averages in the period 2011–2019 as there was not a significant linear trend

in 2021, and the contact rates to the NPIC was 139 per 100,000 in 2019 and 326 per 100,000 in 2021. Among girls aged 15–19 years, the admission rates to SHC were 555 per 100,000 in 2019 and 1218 per 100,000 in 2021, and the contact rates to the NPIC were 494 per 100,000 in 2019 and 836 per 100,000 in 2021.

Table S1 shows the poisoning agents in the two age groups in 2012–2022. Paracetamol is the most common poisoning followed by NSAIDs in the 10–14 age group and antidepressants in the 15–19 age group. Contact rates for paracetamol poisoning have increased in both age groups from prior to the pandemic to 2022.

We observed a sharp increase in young girls admitted to SHC for deliberate self-poisoning from prior to the pandemic to 2021. This was corroborated by a parallel increase in contacts to the NPIC that continued into 2022. The most common poisoning agent was paracetamol. Our findings should be viewed in context with Norwegian studies reporting an increase in primary and specialist health care consultations for mental health problems in 2021 in the same age groups.⁵ The nonsignificant changes from 2019 to 2020 could be because of that Norway had low Covid-19 mortality and fewer social restrictions than other European countries. However, as the pandemic continued into 2021 the prolonged impact of diminishing social support networks, and disruptions in daily routines may have increased the risk of mental health problems

including self-poisoning in adolescent girls. Limitations were that diagnostic data is not validated, it is not possible to distinguish between incident and prevalent cases, or to examine psychiatric diagnoses, urban/rural differences, and specific age groups. Finally, the contact with NPIC is not mandatory. Our results suggest that the pandemic has taken its toll on the mental health of Norwegian adolescents' girls. It is important to continue monitoring this development, and to undertake efforts to understand the drivers behind it to develop preventive measures.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

PEER REVIEW

The peer review history for this article is available at <https://www.webofscience.com/api/gateway/wos/peer-review/10.1111/acps.13553>.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ETHICS STATEMENT

The authors only used aggregated data and no ethical approval was required.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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