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**Violence victimisation—a watershed for young women’s mental and physical health**

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**Purpose:** The association between victimisation and adverse health in children is well established but few studies have addressed the effect of victimisation, especially multiple victimisations, in older adolescents and young adults. The aim of this study was to assess self-reported health in young women (15–22 years) victimised to one or more types of violence, compared with non-victimised. **Methods:** Young women visiting youth health centres in Sweden answered a questionnaire constructed from standardised instruments addressing violence victimisation (emotional, physical, sexual and family violence), socio-demographics, substance use and physical and mental health. Adjusted odds ratio (AOR) with 95% confidence interval (CI) and attributable risk (AR) were assessed. **Results:** Of 1051 women (73% of eligible women), 25% were lifetime victims of one type of violence and 31% of two or more types of violence. Sexual-minority young women were more victimised than heterosexual women. Violence victimisation increased the risk for adverse health outcomes, especially evident for those multiply victimised. Victims of two or more types of violence had AOR 11.8 (CI 6.9–20.1) for post-traumatic stress symptoms, 6.3 (CI 3.9–10.2) for anxiety symptoms and 10.8 (CI 5.2–22.5) for suicide ideation. The AR of victimisation accounted for 41% of post-traumatic stress symptoms, 30% of anxiety symptoms and 27% of suicide ideation. Stratified analyses showed that lower economic resources did not influence health negatively for non-victimised, whereas it multiplicatively reinforced ill-health when combined with violence victimisation. **Conclusion:** Violence victimisation, and particularly multiple victimisations, was strongly associated with mental ill-health in young women, especially evident in those with low economic resources.
Introduction

The health of young people is a global health priority. Among young people mental ill-health causes the highest number of disability-adjusted life years. In Sweden, a trend of increasing in-patient psychiatric care among youth is reported, with no decrease in suicide, as among adults.

Transition from adolescence into adulthood is a vulnerable time of life. The onset of mental disorders often occurs during this period, potentially affecting life-course adversities. It is also a period in life when the risk for violence victimisation is high. Association between violence victimisation and adverse health outcomes is well-documented for a number of victimisations such as bullying and peer victimisation, domestic violence, physical abuse and sexual abuse and dating violence. Possible outcomes, including depression, anxiety, post-traumatic stress disorders (PTSD), substance/alcohol abuse, self-injury and suicidal ideation/attempt and somatic complaints, are also well-documented.

Adolescents seem to have higher risk of developing PTSD after violence victimisation compared with adults and young women more so than young men. Moreover, young women suffer from depression and suicide ideation to a higher degree than young men. Recent studies also demonstrate that sexual-minority youth (youth who are attracted to the same sex or endorse a gay/lesbian/bisexual identity) report higher degrees of mental ill-health compared with heterosexual youth.

In prior studies focus has often been on one type of victimisation, such as bullying or sexual abuse. However, a number of young people suffer a variety of victimisations that continue over time. In fact, the underlying effect of multiple victimisations seems to account for a considerable part of symptoms in victimised youth. Moreover, youth suffering from different types of victimisation report more mental ill-health than youth suffering from repeated victimisations of the same type.

Studies of multiple victimisations to date have been conducted mainly on children. The devastating effect of dating and intimate partner violence is well-studied in young adults but other types of violence, and especially multiple victimisations, need to be further explored.

The impact of violence victimisations and subsequent ill-health on young people’s everyday life is little studied. Associations between violence victimisation and more days of absence and dropout from school are reported in only a few studies. There is also a need for more studies on health-related quality of life after victimisation.

The objective of this study was to assess self-reported ill-health in young women victimised to one or more types of violence compared with non-victimised young women. Specific aims were to analyse the associations between violence victimisation and symptoms of post-traumatic stress (PTS), anxiety, somatic complaints, self-injury and suicide ideation/attempt and school absence.

Methods

The design was cross-sectional. This is a baseline report of a randomised controlled intervention study about violence victimisation and alcohol/substance use among youth.

Setting and study population

In Sweden most cities have youth health centres staffed by midwives, social workers and physicians. Young people up to the age of 22 attend these centres for counselling about sexual and reproductive health as well as social, mental or physical problems. Young women account for about 90% of visits, probably due to prescription of contraceptives being the predominant reason for first visits.

This study was carried out in a county with a population of 240,000 inhabitants. Women aged 15–22 visiting one of the four youth health centres in the county during the period from 1 January 2012–31 December 2012 were consecutively asked to participate in the study. Exclusion criteria were severe mental disease or mental retardation. Of 1,445 eligible young women, 1,051 (73%) accepted to partake.

Participants were informed orally and in writing about the study, and oral informed consent was obtained. The study was approved by the Regional Ethical Review Board in Umeå (D.no. 2011-110-31O).
defined as foreign-born or Swedish-born with two foreign-born parents.

Analysis

For the analytical framework, the WHO ecological model was used for interpretation of how different individual and contextual factors interact in the multifaceted process of violence victimisation.\(^{30,31}\) The first level focuses on individual factors, such as education level, substance use and socioeconomic factors. The second level is about social relationships, such as family situation and social support. On the third level, the community and study population are taken into account. Finally, the fourth level involves larger societal factors in Sweden in particular that may influence rates of violence, such as being the first country to ban corporal punishment of children in 1979 and the adoption in 2006 of a law making it compulsory for schools to have anti-bullying programmes.

Prevalences with 95% confidence intervals were calculated. Student’s t-test was used to analyse differences in parametric variables and Pearson’s Chi-squared or Fisher’s exact tests were used to assess differences in non-parametric variables. The significance level used was <0.05. Crude and adjusted odds ratios with 95% confidence intervals were applied to assess possible associations between violence exposure and different mental and somatic health outcomes. Confounders were chosen according to empirical evidence in the literature and significant variables in the univariate analyses. To examine for possible interactions between violence victimisation and economic resources on the OR:s for different mental health outcomes, economic resources (normal/low) and violence victimisation (no violence/violence) were stratified by creating a new variable with four categories. Attributable risk (AR) and population attributable risk (PAR) were estimated by the AP Exposed = \(\frac{(RR - 1)}{RR}\) and Population AP = \(\frac{(RR - 1)}{RRx}\), respectively. All statistical analyses were performed using IBM SPSS 20.

Results

Of the participants, 56% (590) reported lifetime experience of any type of violence victimisation. Twenty-five per cent (265) of the participants reported being victims to one type of violence and 31% (325) to multiple victimisations. Forty-three per cent (456) reported emotional violence, 23% (241) physical violence, 20% (210) being touched sexually against their will, 10% (109) being victims of sexual penetration and 12% (124) witnessing family violence.

In emotionally victimised women 40% were solely victims to emotional violence, whereas 60% were victims of at least one other type of victimisation in addition to emotional violence. In contrast, 18% of women exposed to physical violence, 86% of those being touched sexually against their will, 99% of victims of sexual penetration and 87% of victims of family violence experiences were also victims of at least one other type of violence.

Distribution of socio-demographic factors, social support, substance use and sexual orientation by categories of lifetime victimisation is presented in table 1.

Associations between violence victimisation and ill-health are presented in table 2. Low educational level, alcohol risk drinking, smoking and lesser social support were more common in multiply-victimised women compared with those exposed to solely one type of violence or not at all. Young women of foreign background had multiple victimisations to a higher degree than women of Swedish background. Sexual-minority young women reported significantly more victimisation for all types of victimisations, compared with heterosexual young women. Multiple victimisations were seen in 60% of the sexual-minority women.

Victims of one type of violence met the criteria for almost all ill-health variables and reported school/work absence to a higher degree than those not victimised. Women with multiple victimisations reported symptoms of ill-health and school/work absence to a higher degree than those exposed to just one type of violence.

When analyses were adjusted for educational level, economic resources, alcohol risk drinking and trust in others, only minor changes were seen (table 3). Of the social support questions ‘trust in others’ was the only significant variable in the regression and therefore adjusted for. Substance abuse was not adjusted for due to small numbers. Adjusting for foreign background did not change the odds and was thus not included in the multivariate analyses. Adjusting for sexual orientation showed increased odds ratios only for suicide ideation and self-injury.

Calculation of AR demonstrated that multiple victimisations accounted for 41% of post-traumatic symptoms, 30% of anxiety symptoms, 27% of suicide ideation and 4% of suicide attempt. Concerning PAR, the corresponding figures were 17%, 12%, 9% and 2% (table 3).

Stratified analyses for violence victimisation by economic resources showed that low economic resources did not influence health negatively for those not victimised. A statistical interaction demonstrated that when violence victimisation was combined with low economic resources, ill-health was reinforced multiplicatively (figure 1).

Discussion

The most important findings in this study were the strong associations between violence victimisation and mental and somatic ill-health in young women. Furthermore, multiple victimisations strengthened these associations considerably.

High ARs were evident for symptoms of PTS, anxiety, self-injury, suicide ideation and absence from school/work among the victimised. Low economic resources multiplicatively reinforced poor perceived health among victimised women. The public health impact of violence on ill-health was considerable, as illustrated by the population-attributable proportions.

Association between violence victimisation and trauma symptoms in children and young adolescents is well-documented.\(^6,11,14,17\) This study extended prior research, showing that association between victimisation and PTS symptoms remains strong for older adolescents and young adult women. In this study, violence victimisation explained 41% of PTS symptoms and 23% of suicide ideation in multiple-victimised young women. However, the AR was only 4% for actual suicide attempt, probably due to the small numbers of suicide attempts.

Multiple victimisations were seen in 60% of sexual-minority women compared with 31% among all women in the present study. Earlier studies indicate that sexual-minority youth suffer from mental ill-health and victimisation to a higher degree than heterosexual youth.\(^{2,13}\) In this study, non-victimised sexual-minority women had more suicide- and self-injury ideation but did not otherwise differ in health outcomes compared with non-victimised heterosexual women. Hence, high victimisation rates may be an important factor in explaining the sexual minority young women’s higher reported ill-health.

Factors referring to the individual (education, socioeconomics, alcohol use) and relationships (social support) level were assessed in the current study to gain a more comprehensive understanding of violence victimisation in accordance with the WHO ecological model.

Low socioeconomic status has been considered linked to ill-health in youth.\(^{33}\) In this study, non-victimised young women with low economic resources did not differ in ill-health compared with non-victimised young women with normal economic resources. However, when victimised, young women with low economic resources displayed a multiplicative effect on ill-health compared with victimised women with normal economic resources. These
results are in accordance with the theory that other factors than violence alone are at play in an individual's response and resilience to victimisation.15,24,34

Different types of victimisations have often been studied in isolation.7,8,10,12,13 However, recent studies reveal that children and adolescents often are exposed to multiple types of victimisations.8,12,24 When this is the case, it is more accurate to view victimisation as a chronic condition with repeated episodes of violence, and not as an isolated event.9,15,22,24 In this study, single victimisation was seen in 40% of emotionally victimised young women. Victims of physical, sexual and family violence however were multiple victims in 86–99% of the cases. Finkelhor et al. illustrate that the predictive power of victimisation or victimisation to two or more different types of violence. However, the common denominator is probably a violent setting, whether defined by poly-victimisation.15 We used a different scale to determine the number and types of previous-year victimisation when defining multiple victimisations as lifetime victimisation to two or more different types of violence. However, the common denominator is probably a violent setting, whether defined by poly-victimisation or victimisation to two or more different types of violence. Hence, when viewing multiple victimisation rather as norm, not exception, it becomes evident how different types of violence sometimes extend across time and over settings.

Finkelhor et al. used the Juvenile Victimization Questionnaire to determine the number and types of previous-year victimisation when defining poly-victimisation.15 We used a different scale defining multiple victimisations as lifetime victimisation to two or more different types of violence. However, the common denominator is probably a violent setting, whether defined by poly-victimisation or victimisation to two or more different types of violence. When this is the case, it is more accurate to view victimisation as a chronic condition with repeated episodes of violence, and not as an isolated event.9,15,22,24 In this study, single victimisation was seen in 40% of emotionally victimised young women. Victims of physical, sexual and family violence however were multiple victims in 86–99% of the cases. Finkelhor et al. illustrate that the predictive power of individual types of victimisations is eliminated, or greatly reduced, when the effect of poly-victimisation is taken into account.15,22

### Table 1: Distribution of women visiting youth health centres according to socio-demographic status, social support, substance use and sexual orientation by categories of lifetime victimisation

<table>
<thead>
<tr>
<th>Ill health variables</th>
<th>Total % (N)</th>
<th>Not exposed % (n)</th>
<th>Exposed 1 type of violence % (n)</th>
<th>Exposed ≥2 types of violence % (n)</th>
<th>P values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceive general health as less than good</td>
<td>25% (258)</td>
<td>10% (48)</td>
<td>26% (68)</td>
<td>44% (124)</td>
<td>**</td>
</tr>
<tr>
<td>Pain in the shoulders or neck</td>
<td>12% (122)</td>
<td>7.3% (34)</td>
<td>11% (30)</td>
<td>18% (58)</td>
<td>**a</td>
</tr>
<tr>
<td>Headache or migraine</td>
<td>9% (95)</td>
<td>3.3% (15)</td>
<td>9.4% (25)</td>
<td>17% (54)</td>
<td>**</td>
</tr>
<tr>
<td>Eczema or skin rashes</td>
<td>3% (27)</td>
<td>2.0% (9)</td>
<td>2.3% (7)</td>
<td>3.4% (11)</td>
<td>ns</td>
</tr>
<tr>
<td>Recurrent bowel trouble</td>
<td>5% (55)</td>
<td>2.6% (12)</td>
<td>4.9% (13)</td>
<td>9.2% (30)</td>
<td>**a</td>
</tr>
<tr>
<td>Fatigue</td>
<td>15% (153)</td>
<td>6.1% (28)</td>
<td>15% (41)</td>
<td>26% (86)</td>
<td>**</td>
</tr>
<tr>
<td>Sleeping problems</td>
<td>11% (113)</td>
<td>3.3% (15)</td>
<td>9.4% (25)</td>
<td>22% (73)</td>
<td>**</td>
</tr>
<tr>
<td>Depressive symptoms</td>
<td>4.5% (47)</td>
<td>1.7% (8)</td>
<td>4.5% (12)</td>
<td>8.3% (27)</td>
<td>**</td>
</tr>
<tr>
<td>Anxiety symptoms</td>
<td>19% (204)</td>
<td>7.2% (33)</td>
<td>20% (52)</td>
<td>37% (119)</td>
<td>**</td>
</tr>
<tr>
<td>PTS symptoms</td>
<td>22% (235)</td>
<td>5.2% (24)</td>
<td>23% (62)</td>
<td>46% (149)</td>
<td>**</td>
</tr>
<tr>
<td>Self-injury ideation</td>
<td>17% (176)</td>
<td>6.3% (29)</td>
<td>15% (41)</td>
<td>33% (106)</td>
<td>**</td>
</tr>
<tr>
<td>Self-injury infliction</td>
<td>12% (129)</td>
<td>4.6% (21)</td>
<td>12% (32)</td>
<td>23% (76)</td>
<td>**</td>
</tr>
<tr>
<td>Suicide ideation</td>
<td>13% (138)</td>
<td>4.1% (19)</td>
<td>12% (32)</td>
<td>27% (87)</td>
<td>**</td>
</tr>
<tr>
<td>Suicide attempt</td>
<td>2.0% (21)</td>
<td>0.6% (3)</td>
<td>0.8% (2)</td>
<td>5.0% (16)</td>
<td>**a</td>
</tr>
<tr>
<td>Days of physical health not good in past 30 days (mean)</td>
<td>6.1</td>
<td>4.6</td>
<td>6.3</td>
<td>8.1</td>
<td>**</td>
</tr>
<tr>
<td>Days of mental health not good in past 30 days (mean)</td>
<td>9</td>
<td>6.0</td>
<td>9.5</td>
<td>12.7</td>
<td>**</td>
</tr>
<tr>
<td>Days of absence (school/work) due to ill-health in past 30 days (mean)</td>
<td>3.3</td>
<td>2.0</td>
<td>3.3</td>
<td>5.3</td>
<td>**</td>
</tr>
</tbody>
</table>

** = P < 0.01 between all groups.
**a = P <0.01 between not victimised and victimised to one or two types of violence and between victimised to one type of violence and victimised to two or more types of violence.
**b = P <0.01 between not victimised and victimised to two or more types of violence.
**c = P < 0.05 between not victimised and victimised to two or more types of violence.
Table 3  Odds ratios (OR), AOR, AR and PAR for symptoms of psychological and physical ill-health, controlling for socioeconomic status, economic resources, alcohol risk drinking and trust in others in women victimised to one or two or more types of violence

<table>
<thead>
<tr>
<th></th>
<th>Violence one type</th>
<th></th>
<th>Violence two or more types</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>AOR (95% CI)</td>
<td>AR (%)</td>
<td>PAR (%)</td>
</tr>
<tr>
<td>Pain in shoulders/neck</td>
<td>1.6 (0.9–2.8)</td>
<td>1.6 (1.0–2.7)</td>
<td>4 (1)</td>
<td>2.7 (1.7–4.2)</td>
</tr>
<tr>
<td>Headache or migraine</td>
<td>3.6 (1.9–7.0)</td>
<td>3.9 (1.9–8.2)</td>
<td>7 (3)</td>
<td>4.4 (2.8–6.4)</td>
</tr>
<tr>
<td>Eczema or skin rashes</td>
<td>1.5 (0.9–2.7)</td>
<td>1 (0.3–3.4)</td>
<td>0.6 (2)</td>
<td>1.6 (1.0–2.7)</td>
</tr>
<tr>
<td>Recurrent bowel symptoms</td>
<td>1.9 (0.9–4.3)</td>
<td>2.4 (0.9–6.0)</td>
<td>2 (0.8)</td>
<td>3.8 (1.9–7.6)</td>
</tr>
<tr>
<td>Fatigue</td>
<td>2.8 (1.7–4.7)</td>
<td>2.5 (1.4–4.5)</td>
<td>9 (3)</td>
<td>5.6 (3.5–8.8)</td>
</tr>
<tr>
<td>Sleeping problems</td>
<td>3.1 (1.6–6.0)</td>
<td>3.1 (1.4–6.9)</td>
<td>6 (2)</td>
<td>8.6 (4.8–15.3)</td>
</tr>
<tr>
<td>Depressive symptoms</td>
<td>2.7 (1.1–6.7)</td>
<td>2.3 (0.6–8.3)</td>
<td>3 (1)</td>
<td>5.1 (2.3–11.4)</td>
</tr>
<tr>
<td>Anxiety symptoms</td>
<td>3.2 (2.0–5.0)</td>
<td>2.7 (1.6–4.6)</td>
<td>12 (5)</td>
<td>7.5 (4.9–11.4)</td>
</tr>
<tr>
<td>PTS symptoms</td>
<td>5.5 (3.4–9.1)</td>
<td>4.8 (2.7–8.6)</td>
<td>18 (7)</td>
<td>15.3 (9.6–24.4)</td>
</tr>
<tr>
<td>Self-injury ideation</td>
<td>2.7 (1.6–4.4)</td>
<td>2.8 (1.5–5.3)</td>
<td>9 (3)</td>
<td>7.2 (4.6–11)</td>
</tr>
<tr>
<td>Have inflicted self-injury</td>
<td>2.9 (1.6–5.1)</td>
<td>3.3 (1.6–7.1)</td>
<td>7 (3)</td>
<td>6.4 (3.9–11)</td>
</tr>
<tr>
<td>Suicide ideation</td>
<td>3.2 (1.8–5.7)</td>
<td>4.2 (2.2–10.6)</td>
<td>7 (3)</td>
<td>8.6 (5.1–15)</td>
</tr>
<tr>
<td>Suicide attempt</td>
<td>1.2 (0.2–6.9)</td>
<td>3.4 (0.3–38)</td>
<td>0.1 (0.04)</td>
<td>7.9 (2.3–27)</td>
</tr>
<tr>
<td>&gt;2 days absence/month (school/work)</td>
<td>1.5 (1.1–2.2)</td>
<td>1.4 (1.0–2.0)</td>
<td>8 (3)</td>
<td>3.4 (2.5–4.6)</td>
</tr>
</tbody>
</table>

Note: Bold figures indicate significant OR and AOR.

Figure 1  The interaction between violence victimisation and economic resources on OR:s for different mental health outcomes, when stratifications for economic resources and victimisation are made

Methodological considerations

A strength in the current study is its comprehensive approach. Participants were asked about life-time experience of emotional, physical, sexual and family violence in an effort to cover all types of interpersonal violence. Furthermore, both mental and somatic ill-health outcomes, as well as health-related quality of life and absence from school/work due to ill-health, were assessed. Self-reported health variables were derived from validated questionnaires. The study included a large number of young women in an age span—15–22 years—not so well studied before.

The study population was recruited from youth health centres in two middle-sized and two small towns in Sweden. In the area, the level of at least 3 years of post-secondary education is 19% and 8% have foreign background compared with 23% and 15%, respectively, in the whole of Sweden. A possible sampling bias could be that participants in the study were recruited in youth health centres,
therefore not representative of the population. When comparing women in the same age answering the Swedish National Public Health Survey, participants in our study reported less ill-health.\textsuperscript{7} This is an indication that as a group young women visiting youth health centres do not have more ill-health compared with the general population. It is very common for young women to attend youth health centres, 25% of all 16- to 25-year-old women in Sweden reported having attended a youth health centre in the past 3 months.\textsuperscript{29} Hence, it is probable that the women in the study represented young women in this particular area fairly well, but women from urban and more ethnically mixed backgrounds were represented less.

One limitation was the cross-sectional design, which does not make it possible to assess the direction of reported associations. It should also be noted that we did not present a measure of PTSD, depression or any other diagnosis, but rather a measure of self-reported symptoms indicating ill-health. Another limitation was that assessment of violence was based on self-report introducing possible risk of underreporting due to shame, guilt or unwillingness to disclose.

Public health and clinical implications

Youth is a period in life when violence victimisation is high. Mounting evidence shows the devastating effect violence has on young people’s lives and it is crucial that health professionals working with youth are aware of this association.

Of special importance in this context are comprehensive policies and interventions that address young people’s multiple victimisation. The WHO ecological model is useful for a systematic understanding of violence in multiple contexts.

Young people have great potential for life changes and for healing. Health centres and other arenas where young people seek health care or advice are windows of opportunity for asking about violence victimisation and, when needed, offering intervention.

Acknowledgement

We would like to thank Erling Englund for valuable help with acquisition of the electronic data.

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Conflicts of interest: None declared.

Key points

- Violence victimisation was strongly associated with mental ill-health in young women.
- Multi-victimised women had markedly worse health outcomes than single-victimised.
- Low economic resources reinforced ill-health in victimised women only.
- Sexual-minority young women were more victimised than heterosexual women.
- Health professionals need to be aware of the devastating effect violence has on young women’s lives.

References


Mortality trends in cardiovascular causes in schizophrenia, bipolar and unipolar mood disorder in Sweden 1987–2010

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Introduction: People with severe mental illness have increased risk for premature mortality and thus a shorter life expectancy. Relative death rates are used to show the excess mortality among patients with mental health disorder but cannot be used for the comparisons by country, region and time. Methods: A population-based register study including all Swedish patients in adult psychiatry admitted to hospital with a main diagnosis of schizophrenia, bipolar or unipolar mood disorder in 1987–2010 (614 035 person-years). Mortality rates adjusted for age, sex and period were calculated using direct standardization methods with the 2010 Swedish population as standard. Data on all residents aged 15 years or older were used as the comparison group. Results: Patients with severe mental health disorders had a 3-fold mortality compared to general population. All-cause mortality decreased by 9% for people with bipolar mood disorder and by 26–27% for people with schizophrenia or unipolar mood disorder, while the decline in the general population was 30%. Also mortality from diseases of the circulatory system declined less for people with severe mental disorder (−35% to −42%) than for general population (−49%). The pattern was similar for other cardiovascular deaths excluding cerebrovascular deaths for which the rate declined among people with schizophrenia (−30%) and unipolar mood disorder (−41%), unlike for people with bipolar mood disorder (−3%). Conclusions: People with mental health disorder have still elevated mortality. The mortality declined faster for general population than for psychiatric patients. More detailed analysis is needed to reveal causes-of-death with largest possibilities for improvement.