

ORIGINAL ARTICLE

Prevalence of self-reported trauma in a sample of Iranian children is low and unrelated to parents' education or current employment status

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Objective: In Western countries, the prevalence of childhood trauma (CT) ranges from 15 to 25%. CT might be indirectly associated with lower parental socioeconomic status and educational attainments. The aims of this cross-sectional study were fourfold: to assess prevalence of CT in a large sample of Iranian children; to compare the Iranian prevalence rates with those of Western countries; to explore gender-specific patterns; and to explore possible socioeconomic predictors.

Methods: The sample comprised 608 children (mean age 11.49 years, 51.5% females). All completed the Farsi version of the Trauma Symptoms Checklist for Children. Additionally, parents reported on their current employment status and highest educational level.

Results: Trauma symptoms were reported by 20 of 295 boys and 23 of 313 girls. The overall prevalence was 7.1%. Child-reported trauma symptoms were not associated with parents' socioeconomic status or highest educational level. Compared to prevalence findings from U.S. national surveys (ranging from 15-25% of children and adolescents), the prevalence among 11- and 12-year-olds in the present study was considerably lower.

Conclusions: The overall prevalence of reported trauma symptoms among a large sample of Iranian children was unrelated to parents' socioeconomic status, and was lower than that reported in U.S. surveys.

Keywords: Trauma symptoms; prevalence; socioeconomic status; education

Introduction

Adverse childhood experiences have long-lasting consequences. Caffo & Belaise¹ summarized in their review that life-threatening stress and trauma produce responses (avoidance, higher psychophysiological arousal, flashbacks, and re-experiencing events) in children very similar to those observed in adults. Moreover, such responses are not transient¹; they persist into adolescence and adulthood. For example, Dvir et al.² and Varese et al.³ showed that the incidence of psychotic disorders is causally linked to childhood adversities. Saunders & Adams⁴ reviewed and summarized data from U.S. national surveys and concluded that 1) retrospective studies in which adults are asked about traumatic childhood events are less accurate than studies asking individuals during childhood; and 2) the quality and reliability of responses may vary as a function of the traumatic content

(e.g., sexual assaults are less likely to be reported than traffic accidents) and the possible consequences of revealing traumatic events (e.g., legal prosecution). Saunders & Adams⁴ reported that about 6% of U.S. children had experienced an episode of sexual victimization in the preceding 12 months, with higher rates for girls, particularly those on the verge of adolescence. In the 14-to-17-year-old age group, the lifetime prevalence of any sexual victimization was 20% for males and 35% for females; of any sexual assault, 4% for males and 17% for females; and of any attempted or completed rape, 3% for males and 13% for females. The prevalence of physical abuse (when an adult deliberately hit, kick, beat, or otherwise hurt the child) varied from 4 to 19%, depending how narrowly or how broadly 'physical abuse' was defined. Saunders & Adams⁴ reported that two in every five adolescents also reported having witnessed serious community violence, such as seeing someone shot with a gun or

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stabbed or cut with a knife. Likewise, approximately one-third reported witnessing family violence.

As regards family functioning, several lines of research indicate that poor parental relationship quality has a negative impact on children's wellbeing and sleep.⁵⁻⁹ Bagley et al.⁵ reported that both the psychological characteristics of children themselves and conditions in the home environment explain children's poor sleep, but, most importantly, environmental conditions were closely related to parents' socioeconomic status; low socioeconomic status was associated with poor sleep by children. Other research on family functioning has shown that children's psychological functioning and sleep are also strongly related to parents' psychological functioning and sleep.¹⁰⁻¹² More recently, Boe et al.¹³⁻¹⁵ have found low socioeconomic status and children's psychological functioning to be interlinked both cross-sectionally and longitudinally. For example, using data from the Bergen Child Study, Boe et al.¹⁴ reported the adverse cumulative effects of negative life events and family stress on children's mental health; lower SES was associated with more symptoms of childhood emotional-, conduct-, hyperactivity/inattention-, and peer-problems, and, importantly, exposure to life events and family stress explained these associations, thus suggesting that parental socioeconomic status and child functioning are not unconnected.

Overall, estimates from U.S. national surveys indicate that on average, 15 to 25% of children and adolescents experience traumatic events.⁴ Furthermore, studies on children's sleep^{5-10,12,16} strongly suggest that children's psychological functioning is related to family functioning and parents' well-being. On the other hand, as results from the Bergen Child Study indicate, parents' and children's psychological well-being are also dependent on parents' socioeconomic status. Accordingly, in the present study, our aim was to estimate the prevalence of self-rated trauma-symptoms among 11- and 12-year-olds and to relate these to parents' employment status and educational attainment as proxies for socioeconomic status. To this end, we assessed a large sample of 11- and 12-year-old children in Tehran, Iran. We believe that our results can make an important addition to the current literature by in providing indications of whether – and, if so, to what extent – parents' socioeconomic status and children's self-reports of trauma are associated.

Our exploratory research question was whether prevalence in the present sample would differ from the 15-25% range reported for children and adolescents in the United States.⁴

Next, following others,¹³⁻¹⁵ we hypothesized that parents' socioeconomic status, assessed by the proxy indicators employment status and educational attainment, would be associated with children's self-reported symptoms of trauma.

Methods

Procedure

School classes of children aged 11-12 years in Tehran, Iran, were approached. The headmasters of the schools,

parents, and children were informed of the aims of the study and the confidential nature of data handling. Thereafter, written informed consent was obtained both from parents and from children. Children completed a brief questionnaire on age and gender, as well as the Trauma Symptoms Checklist for Children-Alternate Version (TSCC-A; see below). Parents completed a questionnaire covering sociodemographic data, their current employment status, and level of educational attainment (see below). The research ethics committee at the Tehran University of Medical Sciences (TUMS) approved the study, which was performed in accordance with the rules laid down in the Declaration of Helsinki and its later amendments.

Sample

A total of 950 children were approached and 608 (64%) took part in the study. Mean age was 11.49 years (standard deviation [SD] = 0.50; 51.5% females). Age did not significantly differ between females (n=313; mean age = 11.46 years, SD = 0.49) and males (n=295; mean age = 11.51 years, SD = 0.56) ($t_{606} = 1.44, p = 0.15$).

Tools

Children

In addition to information on age and gender, children completed the previously validated Farsi version of the TSCC-A.¹⁷ The TSCC-A consists of 44 items that yield two validity scales (Under-response and Hyper-response) and five clinical scales (anxiety, depression, anger, posttraumatic stress, dissociation). Typical items in the latter scales are worrying about things, feeling mad, feelings of sadness and loneliness, memories of painful past events, and pretending to be someone else or somewhere else; answers are given on four-point rating scales ranging from 0 (never) to 3 (almost all of the time), with higher scores reflecting more severe symptoms. In addition, categorical variables are calculated as follows: for all clinical scales, *t*-scores at or above 65 are considered clinically significant, while *t*-scores in the range of 60 through 65 are suggestive of difficulty or may represent subclinical symptomatology. The two validity scales assess under-response (that is, the tendency towards denial, a general under-endorsement response set, or a need to appear unusually symptom-free) and hyper-response (that is, a tendency toward over-response as a need to appear particularly burdened, or especially symptomatic, or a state of being overwhelmed by traumatic stress).

Parents

Parents completed a sociodemographic questionnaire covering age, gender, current job position, and level of educational attainment.

Statistical analysis

We report descriptive statistics (means and standard deviations) for all variables. We examined the associations

between dimensions of the TSCC-A and parents' current occupation and educational attainment using chi-square tests. All computations were performed in SPSS for Apple Mac OS.

Results

All statistical data are reported in Tables 1, 2, and 3.

No gender differences were observed for any of the five clinical variables or for the two validity scales.

In terms of the categorical variables, 20 of 295 boys and 23 of 313 girls reported clinically significant trauma symptoms. The overall prevalence was therefore 7.1% (43 out of 608 participants).

No statistically significant associations were found between children's reported symptoms of trauma and parents' current employment status or level of educational attainment (all chi-square tests < 1.0).

The prevalence of 7.1% (43 out of 608 participants) was considerably lower than those reported in U.S. national surveys (15 to 25%).

Table 1 Descriptive and inferential statistical overview of the Trauma Symptoms Checklist for Children scores, stratified by gender

| | Females (n=313) | Males (n=295) | Statistics |
|---------------------|-----------------|---------------|------------------|
| Total score | 21.08 (17.97) | 19.64 (15.39) | $t_{606} = 1.06$ |
| Under-response | 6.61 (4.79) | 6.33 (4.31) | $t_{606} = 0.76$ |
| Hyper-response | 3.09 (2.95) | 2.86 (2.76) | $t_{606} = 0.99$ |
| Anxiety | 5.11 (4.43) | 4.22 (3.66) | $t_{606} = 1.67$ |
| Depression | 4.40 (2.40) | 4.06 (2.11) | $t_{606} = 1.11$ |
| Anger | 3.20 (3.77) | 3.13 (3.31) | $t_{606} = 0.25$ |
| Posttraumatic score | 5.43 (4.52) | 5.29 (4.20) | $t_{606} = 0.42$ |
| Dissociation | 3.48 (4.08) | 3.46 (3.69) | $t_{606} = 0.05$ |
| Overt dissociation | 2.09 (2.89) | 2.08 (2.68) | $t_{606} = 0.02$ |
| Fantasy | 1.39 (1.64) | 1.38 (1.47) | $t_{606} = 0.08$ |

Data presented as mean (standard deviation).

Table 2 Dimension categories of the Trauma Symptoms Checklist for Children scores

| | Normal | Borderline | Abnormal | Statistics |
|--------------------|------------|------------|------------|--------------------------------|
| Under-response | | | | |
| Males | 221 (74.9) | 12 (4.1) | 62 (21) | $\chi^2_{(n=608, df=1)} < 1.0$ |
| Females | 198 (63.3) | 42 (13.4) | 73 (23.3) | |
| Over-response | | | | |
| Males | 118 (40) | 50 (16.9) | 127 (43.1) | $\chi^2_{(n=608, df=1)} < 1.0$ |
| Females | 167 (53.4) | 37 (11.8) | 109 (34.8) | |
| Anxiety | | | | |
| Males | 257 (87.1) | 24 (8.1) | 14 (4.7) | $\chi^2_{(n=608, df=1)} < 1.0$ |
| Females | 291 (93) | 11 (3.5) | 11 (3.5) | |
| Depression | | | | |
| Males | 262 (88.8) | 18 (6.1) | 15 (5.1) | $\chi^2_{(n=608, df=1)} < 1.0$ |
| Females | 281 (89.8) | 17 (5.4) | 15 (4.8) | |
| PTSD scores | | | | |
| Males | 259 (87.8) | 18 (6.1) | 18 (6.1) | $\chi^2_{(n=608, df=1)} < 1.0$ |
| Females | 292 (93.3) | 11 (3.5) | 10 (3.2) | |
| Anger | | | | |
| Males | 270 (91.5) | 11 (3.7) | 14 (4.7) | $\chi^2_{(n=608, df=1)} < 1.0$ |
| Females | 285 (91.9) | 12 (3.8) | 16 (5.1) | |
| Dissociation | | | | |
| Males | 266 (90.2) | 12 (4.1) | 17 (5.8) | $\chi^2_{(n=608, df=1)} < 1.0$ |
| Females | 279 (89.9) | 16 (5.1) | 18 (5.8) | |
| Overt dissociation | | | | |
| Males | 264 (89.5) | 15 (5.1) | 16 (5.4) | $\chi^2_{(n=608, df=1)} < 1.0$ |
| Females | 278 (91.7) | 9 (2.7) | 17 (5.4) | |
| Fantasy | | | | |
| Males | 269 (91.2) | 13 (4.4) | 13 (4.4) | $\chi^2_{(n=608, df=1)} < 1.0$ |
| Females | 284 (90.7) | 9 (2.7) | 20 (6.4) | |

Data presented as n (%).

df = degrees of freedom; PTSD = posttraumatic stress disorder.

Table 3 Descriptive and statistical indices of parents' educational attainment and occupation and children's risk of trauma

| Parent occupation/education | Children's risk of trauma | | Statistics |
|-----------------------------|---------------------------|----------|---------------------------------|
| | Low | High | |
| Mother's occupation | | | |
| Housekeeper | 461 (75.8) | 34 (5.6) | $\chi^2_{(n=608, df=1)} = 0.17$ |
| Employee | 104 (17.1) | 9 (1.5) | |
| Father's occupation | | | |
| Self-employed | 356 (58.5) | 17 (4.4) | $\chi^2_{(n=608, df=1)} = 0.01$ |
| Employee | 209 (34.4) | 16 (2.6) | |
| Mother's educational level | | | |
| Illiterate | 24 (3.9) | 3 (0.5) | $\chi^2_{(n=608, df=2)} = 1.65$ |
| Primary | 415 (68.3) | 28 (4.6) | |
| Secondary or higher | 126 (20.7) | 12 (2) | |
| Father's educational level | | | |
| Illiterate | 17 (2.8) | 3 (0.5) | $\chi^2_{(n=608, df=2)} = 3.73$ |
| Primary | 397 (65.3) | 15 (4.1) | |
| Secondary or higher | 151 (24.8) | 15 (2.5) | |

Data presented as n (%).
df = degrees of freedom.

Discussion

The key findings of the present study were that: first, among a large sample of 11- and 12-year-olds, the prevalence of self-rated symptoms of trauma was 7.1% (43 out of 608 participants), with a slightly higher prevalence rate for females (7.3%) than for males (6.8%); second, the occurrence of symptoms of trauma was unrelated to parents' socioeconomic status; finally, prevalence was considerably lower than that reported in U.S. national surveys.

The hypothesis was that children's self-rated symptoms of trauma would be related to parents' socioeconomic status, but this hypothesis was not supported. Thus, the present findings are at odds with previous results¹³⁻¹⁵ which indicated a strong association between children's symptoms of psychopathology and parents' socioeconomic status. We cannot explain with any certainty why our findings differ in this way, though we advance the following speculations. First, we did not directly assess parents' socioeconomic status, instead relying on their current employment status and level of education as proxies. In future studies, it would be preferable to assess socioeconomic status in terms of income and family structure. Second, other studies have shown children's and parents' mental health and sleep patterns to be associated. More specifically, other work in both Western Europe^{11,12,16} and Iran¹⁰ has found parents' poor sleep to be associated with parents' poor mental health, and these variables, in turn, to be associated with children's poor sleep and poor mental health. Thus, it is possible that other unassessed and latent variables might account for the current lack of associations. Third, we acknowledge that the present study lacks evidence of the 'transmission belt' between children's psychological functioning and parents' behavior. In contrast, others^{5,6,8,9} have assessed parents' relationship quality or children's perceptions of parenting styles. Tu et al.⁹ showed that the quality of

adolescent-parent relationships has an impact on adolescents' mental health. Likewise, Brand et al.¹⁸ were able to show that good-quality sleep and wellbeing in adolescence were partly explained by perception of a parenting style characterized by warmth and supportive behavior. It is therefore possible that, in the present study, children's perceptions of parenting style had a greater impact on their psychopathology (symptoms of trauma) than the proxies of socioeconomic status. Lastly, indirect, though not direct, effects of parents' lower socioeconomic status on children's psychological well-being and possible psychological trauma should be taken into account. For instance, Evans & English¹⁹ summarized that parents' lower socioeconomic status and lower educational level by definition impact on parents' choices of lower work place quality and substandard housing, along with higher noise and crowding exposure. Living in quarters with substandard housing increases the risk of children's exposure to cumulative stressors such as community violence, poor education facilities, and neighborhood criminality. Indeed, Beidas et al.²⁰ claimed that exposure to traumatic experiences outside the microcosmos of the family among youth is a serious public health concern. Likewise, in our study, it is conceivable that parents' lower socioeconomic status and lower education impacted indirectly on their children's traumatic experiences outside the core family, but within the adversities of substandard housing, crowding exposure, community violence, and poorer education facilities.

Our exploratory research question concerned comparison of prevalence in the present study with that reported in U.S. national surveys. We found that the prevalence rate for the 11-12 years old children in the present study was considerably lower than prevalence data from U.S. national surveys.⁴ While we acknowledge that methodological issues such as assessment tools, age and gender distributions, and exposure to and type of stressors preclude a direct comparison of results from

different studies, the gap between 7.3% and 15 to 25% is substantial.

Despite these new findings, several limitations caution against overgeneralization. First, while the sample size was large, clearly it is not representative of children's mental health or family circumstances in Iran as a whole. In particular, the present research was conducted in Tehran, while a quite different picture might have emerged had, for example, the study been carried out after the earthquake in Kermanshah province in the autumn of 2017. Second, socioeconomic status was not directly assessed, but deduced from parents' current employment and level of education. Third, it is striking that no parent was unemployed; we take this as an indication that the sample was not entirely representative of the current Iranian adult population in socioeconomic terms overall or in terms of employment status in particular. Fourth, the pattern of results might have differed if other psychophysiological parameters had been assessed. For instance, Gerber et al.²¹ showed that cardiorespiratory fitness moderated the associations between recent critical life events and health-related quality of life. Last, we only assessed children aged 11 to 12 years, who are necessarily not representative of the full age range of childhood.

In conclusion, among a large sample of 11- and 12-year-old children, the prevalence of trauma symptoms was about 7.1%, with virtually no difference between girls and boys. Furthermore, the presence of trauma symptoms was unrelated to parents' current employment or level of education as proxies for socioeconomic status.

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Disclosure

The authors report no conflicts of interest.

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