## ABSTRACT

Age-cohort variation in childhood trauma was examined in the present study. The data were taken from the 1994/95 Canadian National Population Health Survey of household residents (n = 15,106). Childhood trauma was measured by a seven-item index (items reflected physical abuse, fearful experiences, hospitalization, being sent away from home, and parental disturbance). Reported prevalence of childhood trauma increased with each successively younger age-cohort (range = 31% to 60%). Females showed a larger change than males, and age differences grew more pronounced as trauma exposure increased. The data suggest that childhood trauma has been on the increase over the last few decades. This is in accord with findings from other studies which showed that depression and social problems have also been on the rise. This suggests that adult psychiatric sequelae of early trauma can be expected to show an increase in future years.

## ABRÉGÉ

Dans cette étude, nous examinons les variations des traumatismes de l'enfance par cohorte d'âge. Les données proviennent de l'Enquête nationale sur la santé de la population réalisée en 1994-1995 auprès des ménages (n = 15 106). Les traumatismes infantiles ont été mesurés en fonction d'une échelle composée de sept critères (traduisant la violence physique, les épisodes de frayeur, les cas d'hospitalisation, l'éloignement du foyer et les dysfonctionnements parentaux). On constate que plus la cohorte considérée est jeune, plus le taux de prévalence des traumatismes infantiles augmente (fourchette = de 31 à 60 %). La différence est apparue plus marquée chez les filles que chez les garçons et l'écart entre les âges s'accentuait parallèlement à l'augmentation de l'exposition aux traumatismes. Les données tendent à montrer une augmentation des traumatismes chez les enfants au cours des dernières décennies, ce qui est conforme aux conclusions d'autres études qui montrent que dépressions et problèmes sociaux sont en hausse. On peut donc en déduire que les séquelles d'ordre psychiatrique chez les adultes résultant de traumatismes infantiles vont augmenter dans les années à venir.


# Increasing Childhood Trauma in Canada: Findings From the National Population Health Survey, 1994/95


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When population rates for a mental health problem rise, we are naturally concerned. When the problem occurs during childhood, we are doubly worried. First because of distress among those affected, and second because of the possibility of an adverse effect on development, thus potentially adding future problems to current difficulties. Of concern to many is the effect of childhood trauma on later mental health, particularly on depression and anxiety disorders.[1-4]

It stands to reason that if childhood trauma has later effects, then an increase in its incidence would be of great concern. There is some reason to expect that such might be the case. Social problems, which are highly correlated with mental illness,[5-11] have been increasing in Canada over the last four decades. That is, a Social Problem Index composed of rates for crime, suicide, divorce, and alcoholism has exhibited a dramatic increase over the years 1956 to 1991.[12] Many of the variables comprising this index are similar to those used in the "Trauma Index" that was derived from the responses to the 1994/95 National Population Health Survey.[13] In fact, when scores were aggregated at the provincial level to show the mean frequency of individual lifetime traumatic events, a strong correlation with the aforementioned Social Problem Index was obtained.[12]

Solomon and Hellon have found that increases in suicide rates (one component of the Social Problem Index) exhibit a cohort effect.[14,15] That is, the suicide rate for a particular age-grouping was maintained as it aged, even though those who completed suicide were, of course, removed from the cohort. Unfortunately, these authors found higher rates among youth, thus predicting higher rates overall as these cohorts aged. Dyck, Newman, and Thompson[16] found that young males accounted for most of these increases.

Perhaps related to the above are the findings from a number of studies that have suggested that the rate of depression in North America has been on the increase since World War II. The Epidemiologic Catchment Area studies in the United States examined mental health in three urban settings,[17,18] and a later investigation summarized findings from nine studies which represented data from six North American sites ( including one Canadian city, Edmonton) and seven from other parts of the world.[19] These cross-sectional investigations allowed the authors to compare depression rates across all ages in very large samples. Instead of finding the expected rise in lifetime prevalence of depression with age (more years of life should allow more time to experience depression), they found the opposite. The younger the respondent, the greater the reported prevalence of depression. Klerman et al.[20] applied a similar analysis to a large sample of the close relatives of depressed individuals and found the same result; younger people showed more depression than their elders. Such findings have led Seligman[21] to express concern about an epidemic of depression, as evidenced by a ten-fold increase in its prevalence over just a few decades.

The implication that might well be derived from the findings noted above is that if childhood trauma might have an influential role in later difficulties (the expression of psychiatric symptoms and


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involvement in social problem behaviour), and these difficulties appear to be on the increase, then it would be worthwhile to investigate the possibility that similar variation can be found for childhood trauma. The present study, then, was designed to investigate variation in self-reported childhood trauma in order to determine whether the changes in the prevalence of trauma across age groupings matches that for depression and social problem behaviour.

## METHODS

### Sample

The data source was the first wave (1994/95) of the Canadian National Population Health Survey (NPHS).[13] The NPHS will ultimately collect data from the same sample of respondents every two years for a planned two decades.[22] The first wave was a cross-sectional survey that targeted Canadian household members (children and adults), with the exception of those living on Indian reserves, Canadian Forces bases, and in some remote areas. Overall, 26,430 households were selected for consideration. The final response rate was 88%.[13]

The NPHS gathered information on perceived health, chronic conditions, injuries, depression, smoking, alcohol consumption, physical activity, health professional consultation, and the use of medicines via personal interviews.[23]

In the case of the present study, data from those living in institutions and from those living in the Territories were not included due to lack of availability at the time of writing. Furthermore, in view of the fact that children would, by definition, be within the risk period for childhood trauma, only the records of those aged 20 years and older were selected for further analysis. A total of 15,106 provincial household residents aged 20 years or over were thus identified who had provided information on their age and childhood traumatic experiences. Of these, 54.8% were females, and 45.2% were males.

### The Trauma Index

This Index was derived from responses to a set of questions thought to tap childhood trauma. It was conceived by scientists at Statistics Canada, the creators of the NPHS, and offered as part of a public use data file.[23] Each participant was asked whether he/she had experienced the following as a child or teenager prior to moving away from home: 1) two weeks or longer in hospital; 2) parental divorce; 3) parental unemployment; 4) a frightening experience that was thought about for years after; 5) being sent away from home for wrongdoing; 6) family problems due to parental substance abuse; and 7) physical abuse by someone "close" (the items are reproduced in the Appendix). Each person's "trauma score" was taken to be the number of the above categories that were responded to in the affirmative (maximum score = seven).[23] While the Index carries with it considerable face validity, little information was provided on either the development of the Index or its psychometric properties. Individual responses to the seven component items were not included in the public use data file because of concerns about the possibility of identification of particular respondents.*

**TABLE I**
**The Prevalence (%) of Different Levels of Trauma by Respondent Age**

| Trauma Events | Respondent Age in Years 20-29 | 30-44 | 45-59 | 60-74 | 75+ |
|---|---|---|---|---|---|
| None | 40.5 | 46.7 | 52.7 | 59.1 | 68.6 |
| 1 | 26.2 | 26.0 | 26.1 | 28.0 | 24.5 |
| 2 | 16.1 | 13.9 | 12.1 | 9.1 | 5.1 |
| 3+ | 17.2 | 13.4 | 9.1 | 3.9 | 1.8 |

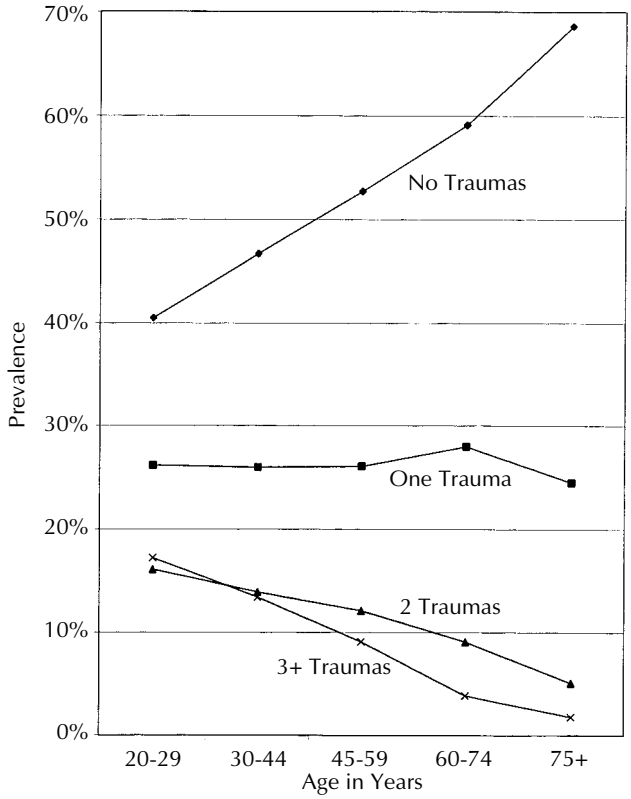


**Figure 1.** Age at responding and the prevalence of childhood traumatic events

### Statistical analysis

Prevalences of trauma are reported as simple percentages of respondents within each of five age-categories.† Mantel's $\chi^2$ statistic for a progressive change in frequency across an ordered variable[24] was used to test for a systematic change in the distribution

* Aggregate data on each of the seven components are available from Statistics Canada via a rather cumbersome procedure.

† It should be noted that the data set did not include an individual's age in years. To protect confidentiality, each respondent was assigned a value corresponding to a five-year age category.

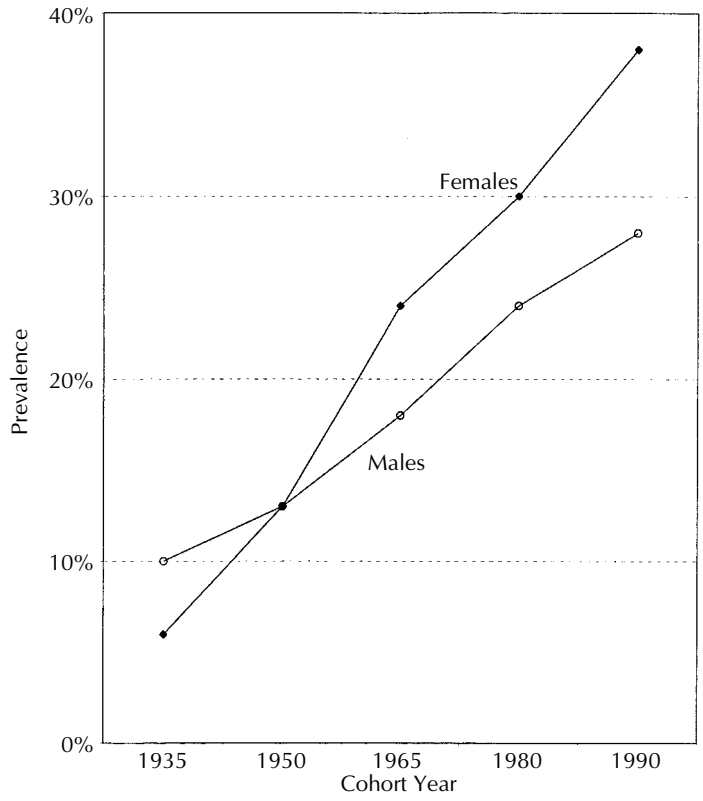


**Figure 2.** The prevalence of two or more traumatic events by age and sex

of those exhibiting trauma across age groups (with df = 1).

## RESULTS

Table I shows the prevalence of trauma for each of the five age-groupings selected for analysis. It is clear that the number that have not ever experienced trauma increased with the age of the respondents (and, of course, each successively younger group was more likely to have experienced at least one traumatic event). The application of Mantel's test for a progressive increase[24] indicated that this trend was statistically significant ($\chi^2$ = 379.44, df = 1, p < 0.001). When the different levels of trauma were considered, the prevalences were found to be about equal across ages for those with one traumatic experience, and the slopes became decidedly negative for those with two or more such events. In fact, the slopes became more negative with each additional traumatic experience. To illustrate, taking each level of trauma separately and multiplying the prevalence in each age grouping by its corresponding linear coefficient (i.e., -2, -1, 0, 1, 2)[25] produced linear trend values of 68.4, -1.5, -26.7, and -40.1, respectively for zero, one, two, and three or more traumatic events. Thus, as shown in Figure 1, the trend across age shifted from an increase to a decrease as trauma risk grew. This indicates that youth is not only correlated with an increased likelihood of a traumatic experience, but is also associated with an increased likelihood of multiple traumatic experiences.

The decrease in the prevalence of trauma as age increased held true for both males ($\chi^2$ = 103.5, df = 1, p < 0.001) and females ($\chi^2$ = 293.41, df = 1, p < 0.001). However, interpretations must be tempered to some degree by the finding that the increasing prevalence of trauma with decreasing age was more pronounced for females than for males. On closer inspection, this proved to be true for those with multiple traumas (for two or more events, $\chi^2$ = 10.58, df = 1, p < 0.002), but not for those who reported only a single traumatic experience ($\chi^2$ = 2.35, df = 1, N.S.). The multiple trauma findings, shown in Figure 2, suggest that several decades ago girls had fewer traumatic experiences than boys, but that a cross-over has occurred, with girls showing higher rates than boys in the more recent past.

## DISCUSSION

There are two general explanations that can be applied to these data. The first is that they reflect an increase in childhood trauma over the last few generations. The second is that we are observing a finding generated by differences in some aspect of recall that is associated with age.

The latter explanation is made tenable by the fact that the data are retrospective, raising the possibility that reports of early trauma may be distorted by present perceptions, emotions, or by forgetting over time. However, Robins and her colleagues[26] have shown that a high degree of sibling-pair agreement on childhood events can be achieved, even when one of each twosome was mentally disordered. The conclusion to be drawn from this finding is that discrete events can be remembered accurately, with the implication that recollections involving feelings and/or interpretation may be less reliable. In the case of the National Population Health Survey, respondents were asked to report on the occurrence of events in their lives, not on the subjective interpretation of their experience of these events (see the seven Trauma Index items, listed in the Appendix). Furthermore, it is not immediately obvious how a simple forgetting model would predict both the absence of an age difference for a single traumatic event and the increasingly negative slope across age that was found for each increment in the number of such events. A simple forgetting model would predict a decrement across age for all levels of trauma. Thus, the weight of the evidence from this analysis is in favour of the conclusion that children in Canada have been subjected to more and more childhood trauma over the last few decades.

In view of the rapid social changes revolving around the roles and aspirations of women in western societies, the indication that childhood trauma has risen markedly faster for girls than for boys is a cause for some concern and disappointment. Is this part of the world actually worse for women, not better? Does the progress made by

women have a cost for girls? These questions cannot be addressed here, but they, and perhaps several others like them, deserve further investigation.

While the sex difference discussed above is significant, it should not obscure the fact that both males and females showed a dramatic increase in reported trauma across successive age-cohorts. The disconcerting implication of these findings is that we can expect further increases in the adult sequelae of childhood trauma. As noted above, anxiety and depression are likely consequences, but increases in "physical" illness may also be expected as a response to stress.[27-36]

It appears that a host of ills could be avoided by the prevention of childhood trauma. On the face of it, most of the seven traumatic events noted above are preventable. Exceptions, such as some hospitalizations, can be earmarked for special attention *vis-à-vis* minimization of the stress that these young patients may face. While a discussion of the prevention of childhood trauma is beyond the scope of this paper, it should be noted that those who study child development and family life have many clues to offer in this regard.[2,4,37] If the data presented here have any validity, then there is some urgency to the need to seek out and heed their advice.

**Appendix**
**Childhood Stressor ("Trauma") Items from the National Population Health Survey 1994/95 Questionnaire**

Index Identifier: DVTRI94

The next few questions ask about some things that may have happened to you while you were a child or a teenager, before you moved out of the house. Please tell me if any of these things have happened to you:

1. Did you spend 2 weeks or more in the hospital? (Y; N)
2. Did your parents get a divorce? (Y; N)
3. Did your father or mother not have a job for a long time when they wanted to be working? (Y; N)
4. Did something happen that scared you so much you thought about it for years after? (Y; N)
5. Were you sent away from home because you did something wrong? (Y; N)
6. Did either of your parents drink or use drugs so often that it caused problems for the family? (Y; N)
7. Were you ever physically abused by someone close to you? (Y; N)

Note: The Childhood Trauma Index score is the total number of 'Yes' responses to the above seven questions (Min=0 and Max=7)

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