

The Lifetime Prevalence of Traumatic Events and Posttraumatic Stress Disorder in the Netherlands

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Little information exists on the lifetime prevalence of traumatic events and posttraumatic stress disorder (PTSD) in the general population of the Netherlands. A national representative sample of 1087 adults aged 18 to 80 years was selected using random digit dialing and then surveyed by telephone using the Composite International Diagnostic Interview (CIDI) to determine the prevalence of trauma and DSM-IV PTSD. The lifetime prevalence of any potential trauma was 80.7%, and the lifetime prevalence of PTSD was 7.4%. Women and younger persons showed higher risk of PTSD. It was concluded that PTSD is a fairly common disorder and exposure to trauma is high throughout the population. Unexpectedly, prevalence rates resemble those found in the United States and are higher than in several other European countries.

Widely disparate rates of posttraumatic stress disorder (PTSD) within the community have been reported across countries, ranging from no PTSD in Switzerland (Hepp et al., 2006) to 6.8% (Kessler, Berglund, Demler, Merikangas, & Walters, 2005) in the United States and as high as 37.4% in postconflict countries (de Jong et al., 2001). In the late 1990s, the Netherlands Mental Health Survey and Incidence Study (Bijl, Ravelli, & van Zessen, 1998) was conducted to establish prevalence rates of most mental disorders in the general Dutch population, however, PTSD was omitted. More recently, the cross-national European Study of the Epidemiology of Mental Disorders (Alonso et al., 2004) was executed across six European countries, including the Netherlands, which incorporated PTSD. It provided the first overall cross-European lifetime PTSD prevalence rate of 1.9%. Darves-Bornoz et al. (2008) presented the 12-month PTSD prevalence rates for all individual participating countries of the European Study of the Epidemiology of Mental Disorders; their study demonstrated considerably higher 12-month prevalence rates for the Netherlands (2.6%) and France (2.3%) compared to the cross-European 12-month prevalence rate of 0.9%. National lifetime prevalence rates for PTSD remain unavailable today. The present study focused specifically on establishing estimates of lifetime prevalence rates of exposure to potentially traumatic events and PTSD in the general Dutch population. Furthermore, its aim was to establish sociodemographic correlates of trauma and PTSD and the conditional probability of PTSD.

METHOD

Participants

This cross-sectional study is a nationally representative survey of inhabitants of the Netherlands aged 18 to 80 years old conducted between March 2004 and April 2005. Respondents were selected using a random digit dialing selection procedure in which geographical telephone numbers in the Netherlands, excluding the Netherlands Antilles and Aruba, were constructed. When a private household was reached by phone, a household member was randomly selected from the total number of adults in that particular household. If present and willing to respond, the household member was interviewed by telephone. If someone was absent, the interviewer made an appointment to interview the selected member later. A once-selected telephone number was contacted at a minimum of four times at different times and days. Interviewers explained the study procedure and obtained verbal informed consent before beginning the interview. Respondents received no incentive on completing the interview.

We reached 2218 households. One hundred twenty-four of the selected people could not be interviewed because they did not meet the inclusion criteria: 71 people were over 80 years old, 21 could not be interviewed because of illness or hearing problems, 31 could not understand or speak the Dutch language sufficiently fluent to be interviewed, and one number was redirected to another country.

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One hundred twenty-six (5.7%) selected household members were not at home or unavailable, resulting in 1968 selected household members that were reached of which 856 people (43.5%) were unwilling to participate. The interview was started with 1112 responders: 22 responders left the interview early and three cases were lost due to computer failure. Hence, 1087 responders were included in the data analysis and an overall response rate of 51.9% was reached.

Measures

At the start of the interview, sociodemographic data were collected on the participant's age, gender, marital status, family size, country of birth and that of both parents, years of education, and employment status. The country of birth of the respondent's mother or father defined the respondent's cultural background. Cultural background was categorized as Dutch (both parents born in the Netherlands), Western (at least one parent born in a Western country), or non-Western (at least one parent born in non-Western countries). The Statistics Netherlands' definitions were used to define which country was considered Western or non-Western (2009). If both parents originated from non-Dutch countries, the mother's country of birth was decisive. Unemployed people were not distinguished from students and homemakers.

Posttraumatic stress disorder was measured using the Composite International Diagnostic Interview (CIDI) version 2.1 (Robins et al., 1988; World Health Organization [WHO], 1997) a fully structured instrument for use by trained lay interviewers. The CIDI is a widely used instrument and field trials and clinical calibration showed that practically all diagnoses are assessed with acceptable to good reliability and validity (Breslau, Kessler, & Peterson, 1998; Wittchen, 1994; Wittchen et al., 1991). The PTSD diagnosis is based on the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*; American Psychiatric Association [APA], 1994) criteria.

A maximum of 36 specific potentially traumatic events (PTEs) each potentially applying to the *DSM-IV* A1 stressor criterion of PTSD were asked (Table 2), derived from the CIDI interview and the List of Traumatic Events (Carlier, Voerman, & Gersons, 2000). The interview started with relatively mild PTEs (e.g., witnessing events) and increasingly enquired about severely distressing PTEs (e.g., rape). At the end of the PTE listing, the respondent was prompted for any other distressing event with an open question.

Procedure

The interview procedure was guided through a computer-assisted telephone interviewing system. The interview started with the random selection of the interviewee from the household. The respondent was then asked to provide information on sociodemographic variables. After this, the respondent was interviewed about exposure to specific PTEs. To minimize interview time all PTEs were

clustered into eight classes. For each class of PTEs the respondent had to affirm a stem question first before bringing the underlying next questions forward. If a stem question was refuted, the next stem question was enquired. If all stem questions were refuted, no specific PTE was enquired and the respondent was prompted for any other distressing event. If this open question was also refuted, the PTSD assessment was skipped. When a respondent had experienced a single PTE and did not react to the open question the initial PTE was selected as "worst event." When a respondent provided several PTEs, she or he was asked to select their worst PTE. Respondents were allowed to choose any PTE they considered worst (including their response to the open question). The selected PTE then had to be described shortly and it was verified whether the event satisfied the A1 stressor criterion. If not, the interviewer asked the respondent to consider an event that was more shocking (and not a life event), but that it was allowed to stick to the initial selection. When a new PTE was selected the respondent had to give a short description again and the A1 criterion was verified for the second time. The diagnosis of PTSD was then assessed keeping the selected PTE in mind.

The interviews were completed by 25 clinical psychologists and one medical student. All interviewers underwent a training course in recruiting participants, computer-assisted interviewing, and training in using the CIDI. The work was continuously monitored and supervised over the data collection period.

Data Analysis

Statistical analyses were performed using STATA 9.2. Because weighted data may cause problems in estimating variances, the Taylor series linearization method was used to derive proper estimates of standard errors. To account for the differential sampling probabilities, the data were weighted to adjust for differences in selection probabilities and for the distributions of age, sex, marital status, cultural background, and employment status according to Dutch and European census information (Eurostat, 2005; Statistics Netherlands, 2009). A three-step weighting procedure based on inverse-probability weighting, raking, and poststratification was applied. First inverse-probability weighting was used to correct for differences in the probability of selection. Then poststratification and iterative proportional fitting were used to make adjustments based on sociodemographic variables. The joint product of the within-household probability of selection weight, the adjustments weight based on raking (marital status, cultural background, employment status), and the poststratification weight (age-by-sex distribution) resulted in the consolidated weight. All results are based on weighted data. Data were not weighted for nonresponse. Cross-tabulations were used to calculate prevalence and risk of PTSD associated with trauma type. The Kaplan-Meier method was used to generate age-at-onset curves. Multivariate logistic regression models were used to assess the effects of demographic variables on trauma exposure and PTSD prevalence rate.

Table 1. Demographic Characteristics of the Sample Before and After Weighting ($N = 1087$)

	<i>n</i>	Unweighted	Weighted ^a	Census
Age in years				
18–34	228	21.0	29.0	29.0
35–49	382	35.1	31.3	31.3
50–64	297	27.3	25.0	25.0
≥65	180	6.7	14.7	14.7
Sex				
Male	403	37.1	49.7	49.7
Female	684	62.9	50.3	50.3
Marital status ^b				
Married/cohabiting	748	68.8	67.8	56.2
Formerly married	172	15.8	10.9	12.6
Never married	167	15.4	21.3	31.3
Cultural background				
Dutch	965	88.8	80.9	81.3
Western	80	7.4	9.5	9.5
Non-Western	42	3.9	9.6	9.2
Education, years				
0–11	248	22.8	20.0	N.A.
12–15	366	33.7	34.2	N.A.
≥16	473	43.5	45.9	N.A.
Employment status				
Yes	643	59.2	63.7	64.1
No	264	24.3	21.6	21.2

Note. N.A. = Not available. There exists no census information on this topic for the total population.

^aThe sample was weighted on the census distributions of sex, age, marital status, cultural background, and employment rate.

^bCensus information only describes people who are married and not those cohabiting, providing higher rates for the categories Never married and Formerly married widowed, separated, or divorced, and lower rates for the category Married/cohabiting.

The results obtained from the regression models were based on partial analyses. When a characteristic had a natural ordering (e.g., age), a test for linear trend was performed. Statistical significance was based on two-sided statistical tests (adjusted Wald F -tests when applicable) evaluated at a .05 level of significance.

RESULTS

Characteristics of the Sample

Demographic characteristics are shown in Table 1, which also provides the proportions after weighting to approximate the sample distribution to that of the census.

Prevalence of Potentially Traumatic Events and PTSD

The lifetime prevalence of exposure to PTEs varied widely across traumatic events, with some occurring in less than 2% of the population (e.g., held captive/kidnapped, combat experience) and others in more than 20% (e.g., threat/use of physical violence,

witnessing severe traffic accidents; see Table 2). The most prevalent PTE was sudden unexpected death of a loved one, with over half of the sample having experienced this type of event. Most of these cases were due to a medical condition such as acute heart failure. The lifetime prevalence of exposure to any PTE was 80.7% (95% CI = 77.9–83.3) and did not differ between men and women. The mean number of distinct PTEs reported by persons exposed to any trauma was 2.6 (range 0–18, $SD = 2.6$). Although the number of PTEs did not differ between men and women, 2.8 and 2.5, respectively, $t(1086) = 1.56$, $p = .12$, type of trauma did. Male respondents witnessed and experienced more serious threat of harm and physical violence, accidents, and disasters than did women. Men were also more likely to have fought in combat and assisted in rescue work. Considerably more women than men reported sexual violence and life-threatening illness or loss of a child.

The lifetime prevalence estimate for *DSM-IV* PTSD was 7.4% (95% CI = 5.7–9.0). Of the respondents, 3.3% reported PTSD symptoms within the last 12 months (95% CI = 2.2–4.5) and about one-third of them (1.3%; 95% CI = 0.6–1.9) reported still having PTSD problems in the last month.

Table 2. Lifetime Exposure to Potentially Traumatic Events

Potentially traumatic event	Male		Female		Total	
	%	SE	%	SE	%	SE
Assaultive violence	28.7	2.5	25.0	1.7	26.8	1.5
Combat experience	2.2	0.7	0.7	0.3	1.4*	0.4
In war situations as soldier or relief worker	3.0	0.8	0.3	0.2	1.6**	0.4
Threat or use of physical violence	22.0	2.3	12.5	1.3	17.2*	1.3
Threat or use of weapon	13.2	1.9	8.6	1.2	10.9	1.1
Robbery	3.6	1.1	4.2	0.8	3.9	0.6
Beaten up in adulthood	3.8	1.6	7.8	1.1	5.8	1.0
Beaten up in childhood	3.2	1.1	4.6	0.8	3.9	0.7
Rape in adulthood	0.0	–	5.4	1.0	2.7**	0.5
Rape in childhood	2.1	0.8	5.2	0.9	3.7*	0.6
Stalked	2.4	0.9	4.4	0.9	3.4	0.6
Held captive or kidnapped	0.0	–	0.3	0.2	0.3	0.2
Other injury or shocking experiences	45.7	2.6	40.9	1.8	43.3	1.6
Civilian in war situation	15.4	1.6	17.1	0.7	16.3	0.9
Motor vehicle accident	19.3	2.1	11.6	1.4	15.5**	1.3
Natural or man-made disaster	8.3	1.5	4.0	0.9	6.1**	0.8
Great fire	8.5	1.6	6.4	1.1	7.5	0.9
Assisted with rescue work	5.8	1.0	2.2	0.7	4.0**	0.6
Residence destroyed	2.3	0.8	2.4	0.7	2.4	0.5
Unexpectedly discovered dead body	1.2	0.5	0.9	0.3	1.0	0.3
Almost drowned or was resuscitated	1.2	0.5	1.4	0.4	1.3	0.3
Tried to resuscitate someone in vain	2.7	1.0	1.5	0.6	2.1	0.6
Life-threatening illness	11.4	1.6	10.0	1.1	10.7	1.0
Having a child with life-threatening illness	3.6	0.9	7.9	1.1	5.8**	0.7
Significant other has been kidnapped, held hostage, or missing	4.0	1.3	3.3	0.7	3.7	0.7
Witnessing injury or shocking events	36.1	2.6	28.6	1.9	32.4	1.6
Witnessed motor vehicle accident, natural or man-made disaster	31.0	2.5	21.5	1.7	26.2**	1.5
Witnessed someone beaten-up	18.5	2.2	11.0	1.3	14.8**	1.3
Witnessed rape	1.3	0.5	1.7	0.5	1.5	0.4
Witnessed attempt of suicide	7.5	1.4	4.6	0.8	6.1	0.8
Witnessed murder	3.0	1.1	0.3	0.2	1.6	0.5
Sudden unexpected death of loved one	51.4	2.7	56.5	2.0	53.9	1.7
Loss by accident, natural or man-made disaster	13.6	1.9	13.5	1.6	13.6	1.2
Loss by criminal act	2.2	0.7	1.2	0.5	1.7	0.4
Loss by suicide	10.8	2.0	10.9	1.2	10.9	1.2
Loss by sudden medical condition	37.9	2.5	43.6	2.1	40.8	1.6
Stillborn child	7.7	1.5	17.1	1.6	12.4**	1.1
Learning about others	3.0	0.8	5.3	0.9	4.1	0.6
Child/grandchild physically abused	1.7	0.7	1.6	0.6	1.6	0.5
Child/grandchild sexually abused	1.8	0.8	2.0	0.7	1.9	0.5
Other	1.2	0.5	2.8	0.7	2.0	0.4
Any trauma	80.7	2.2	80.8	1.6	80.7	1.4

* $p < .05$. ** $p < .01$. (Differences between male and female respondents)

Sociodemographic Correlates of Trauma Exposure

Exposure to PTEs and the relationships between exposure and sociodemographic variables were examined in relation to any trauma and four classes of PTEs: (a) assaultive violence, (b) experiencing injuries or other shocking events, (c) witnessing injuries or other shocking events, and (d) loss of a loved one. To determine the size of the effect of sociodemographic factors on trauma exposure, adjusted odds ratios (AOR) were calculated based on a logistic regression model in which trauma exposure is the dependent variable and the sociodemographic variables age, sex, marital status, and cultural background are the independent variables. For exposure to any trauma, a linear trend for the number of PTE and age was found. That is, older persons experienced more distinct PTE (ranging from 74.2% to 96.1%), $\chi^2(1, N=1087) = 17.32, p < .001$. Exposure to assaultive violence was not different between genders, but this type of exposure was significantly related to marital status and cultural background, respectively, $\chi^2(2, N=1087) = 16.08, p < .001$, $\chi^2(2, N=1087) = 12.21, p < .001$. Exposure was twofold higher for singles and previously married people than for people living together (respectively, AOR = 2.0, 95% CI = 1.3–3.0; AOR = 1.9, 95% CI = 1.4–2.9, both $p < .001$). People with a Western cultural background were more than twice as likely to have been exposed to violence as people from Dutch origin (AOR = 2.3, 95% CI = 1.4–3.7, $p < .001$). There was no linear relationship found with age; however, exposure was approximately twofold higher for young and middle-aged people than for older persons (respectively, AOR = 1.9, 95% CI = 1.1–3.4; AOR = 1.9, 95% CI = 1.2–3.3, both $p < .05$). Exposure to injuries or other shocking events was lower in women than in men (AOR = 0.7, 95% CI = 0.5–0.9, $p < .05$). Age was found linearly associated with the number of PTEs. Exposure to witnessing injuries or other shocking events was significantly associated with marital status, $\chi^2(2, N=1087) = 9.43, p < .01$, with people formerly living together having over twofold higher odds than people living together (AOR = 2.4, 95% CI = 1.4–3.6, $p < .01$). Again, women were less exposed than men (AOR = 0.6, 95% CI = 0.4–0.8, $p < .01$). Cultural background was also found significantly associated, $\chi^2(2, N=1087) = 3.30, p < .05$. Although not linearly related with age, exposure to loss of a loved one was significantly lower for young and middle-aged people (respectively, AOR = 0.7, 95% CI = 0.4–1.0; AOR = 0.6, 95% CI = 0.4–0.9, both $p < .05$). No other significant relationships were found.

Sociodemographic Correlates of Risk for PTSD after Trauma Exposure

Age, sex, marital status, cultural background, and employment status emerged as risk factors for the occurrence of PTSD when controlling for all other sociodemographic factors (Table 3). Education was found unrelated to PTSD. The rate of PTSD in the youngest age category was about fourfold higher than the oldest

category and decreased steadily with age. There was a significant gender effect found with an approximately twofold higher rate for women than for men. A considerable difference was found between people formerly living together and those living together showing almost a threefold higher rate for the first group. Another difference was found between people from Dutch origin and people with a Western non-Dutch cultural background. The PTSD rate in the latter group was over threefold higher. Being employed was inversely related with the PTSD rate with half the odds of having lifetime PTSD compared to those unemployed.

Age-at-Onset of Posttraumatic Stress Disorder

The median age of onset of lifetime PTSD was 28 years. Kaplan-Meier curves (not shown) were generated for age-at-onset of PTSD separately for four groups of birth cohorts defined by the age at interview (18–34, 35–49, 50–64, 65–80 years). The curves significantly differed from each other, $\chi^2(3, N=1086) = 17.16, p < .001$. Risk for PTSD is fairly low until the early teens, but then it began to rise in a roughly linear fashion with an increasing slope in the more recent birth cohorts.

Conditional Risk of Posttraumatic Stress Disorder

The conditional probability of PTSD was estimated using the PTE selected as worst event. Overall, the probability of PTSD after exposure was 14.1% (95% CI = 11.3–17.4) with a large difference between men (8.5%) and women (19.7%), women having over a two and a half times higher risk of PTSD (OR = 2.6, 95% CI = 1.5–4.8). Most people selected death of a loved one as their worst event. Many of the selected PTEs did not satisfy the A1 criterion of PTSD. From the initial 883 respondents with PTEs, 548 respondents selected a worst event that satisfied the A1 criterion. Particularly, unexpected death of a loved one and witnessing events often did not satisfy the A1 criterion as the event was not sudden (e.g., chronic medical condition) or not experienced in close proximity. When the conditional probability of PTSD was estimated using exposure to any PTE the overall risk of PTSD was 9.1% (95% CI = 7.3–11.4).

DISCUSSION

This study provides the first estimates of the lifetime prevalence of PTE and PTSD in the Netherlands and its sociodemographic correlates. Overall, we estimated that most people (80.7%) have experienced at least one PTE and 7.4% have suffered from PTSD at some time in their lives. This study is in line with the findings of the European Study of the Epidemiology of Mental Disorders study (Darves-Bornoz et al., 2008) indicating a higher proportion of PTSD within the Netherlands than in several other European countries with regard to the 12-month prevalence rate.

Table 3. Conditional Risk for Posttraumatic Stress Disorder (PTSD) by Sociodemographic Factors

Characteristic	PTSD %	95% CI	AOR	95% CI	χ^2
Age in years					
18–34	9.8	5.8–16.6	4.3**	1.5–12.7	3.95*
35–49	7.8	5.0–12.2	3.6**	1.4–9.6	
50–64	5.2	2.9–9.2	2.2	1.0–5.1	
≥65	2.7	1.2–5.9	1.0		
Sex					
Male	4.3	2.7–6.9	1.0		7.38**
Female	8.8	6.5–11.9	2.2	1.2–3.9	
Marital status					
Married/cohabiting	5.2	3.7–7.3	1.0		12.29**
Formerly married	17.4	10.5–29.0	3.0**	1.6–5.7	
Never married	5.8	3.0–10.9	1.1	0.6–2.3	
Cultural background					
Dutch	5.3	3.9–7.2	1.0		10.02**
Western	18.3	8.7–38.4	3.4**	1.6–7.4	
Non-Western	6.9	3.2–15.1	1.3	0.6–3.2	
Education, years					
0–11	6.1	3.6–10.5	0.8	0.4–1.6	0.60
12–15	4.5	2.7–7.5	0.6	0.3–1.2	
≥16	7.7	5.3–11.3	1.0		
Employment status					
Yes	4.4	3.0–6.6	0.5	0.3–0.9	5.46*
No	10.1	6.4–15.8	1.0		

Note. PTSD, % = Proportion of PTSD adjusted for all listed variables based on logistic regression model in which PTSD is the dependent variable and all listed sociodemographic variables are the independent variables; AOR = adjusted odds ratio derived from logistic regression model in which PTSD is the dependent variable and all listed variables are the independent variables; CI = confidence interval. χ^2 values for age and education reflects tests for linear trend.

* $p < .05$. ** $p < .01$.

Our findings appear more in agreement with that of the American studies than that of other European studies. The lifetime prevalence rate of PTSD of 7.4% in the Netherlands proved consistent with those found in the United States (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Kessler et al., 2005) with a similar sex difference in prevalence rates between men and women. It also resembles to some extent that found in Portugal (De Albuquerque A., Soares, De Jesus, & Alves, 2003) and Sweden (Frans, Rimmo, Aberg, & Fredrikson, 2005), but seems to be higher than in other European population surveys (Giovanni et al., 2006; Haro et al., 2006; Hepp et al., 2006; Lepine et al., 2005; Lindal & Stefansson, 1993; Perkonig, Kessler, Storz, & Wittchen, 2000). The European Study of the Epidemiology of Mental Disorders found a cross-European prevalence rate of 1.9% with 0.9% of men and 2.9% of women having PTSD (Alonso et al., 2004). When we consider the continuation of symptoms within the past year as an approximation of the 12-month prevalence rate, our finding is in agreement with that found in the European Study of the Epidemiology of Mental Disorders for the Netherlands.

It resembles that for France, but is considerably higher than in other European countries (Darves-Bornoz et al., 2008; Hepp et al., 2006). Again, findings appear consistent with that in the United States (Kessler, Chiu, Demler, Merikangas, & Walters, 2005) and Canada (Stein, Walker, Hazen, & Forde, 1997). A large variation in research methodologies exists between our study and other population-based surveys. Differences in sampling methods, diagnostic criteria, instruments, and sociodemographic variables may all lead to different rates of PTSD.

In this study, the prevalence of exposure to PTE was as high as in the United States (e.g., Breslau et al., 1998; Breslau, Davis, Andreski, & Peterson, 1991), Canada (Stein et al., 1997), Sweden (Frans et al., 2005), and across Europe (Darves-Bornoz et al., 2008), but considerably higher than found in individual European countries such as Germany (Perkonig et al., 2000) and Switzerland (Hepp et al., 2006). Most of the PTEs prevalence rates are comparable with the cross-European data except for those describing physical and sexual violence with moderately higher exposure rates in the Netherlands. Unlike our study, the

European Study of the Epidemiology of Mental Disorders allowed the assessment of PTSD without disclosing the PTE in mind. These undisclosed private events were reported by a significant number of people and observed to be very traumatic. If the PTE assessment lacks sensitivity, particularly for some of the highest magnitude events, this could affect PTSD prevalence rates.

Comparisons between studies are difficult as differences in exposure rates may depend on the type and definition of events questioned, and the way events are examined. For instance, some studies use the more narrow definition of PTE according to *DSM-III-TR* (APA, 1987) instead of *DSM-IV*. Type and definition may also differ when using the same *DSM* definition. Using fewer questions influences the incidence of rape (Koss, 1992). In the WHO CIDI, the questioning on the occurrence of rape is limited to a single item, in our study it was divided into rape in adulthood and rape in childhood. The use of the legal definition within the question on rape in the World Mental Health Composite International Diagnostic Interview requires sensitivity and delicacy from the interviewers. Kessler (2007) argues that paying interviewers by the interview rather than by the hour may lead to a rushed manner of interviewing. In our study, we specifically instructed our clinical interviewers to introduce these delicate items carefully and paid our interviewers by the hour rather than by the interview removing the incentive of decreasing the duration of the interview and augmenting willingness of individuals to reveal details of their emotional lives.

The results show that the PTSD prevalence rate is highest in the most recent birth cohorts and then declines linearly with age. Survival curves show increasing slopes of risk of PTSD in the more recent age groups. Higher PTSD prevalence seems mainly the consequence of higher exposure to assaultive violence in these groups. Our results are in line with the differences between age cohorts found in the European Study of the Epidemiology of Mental Disorders (Kessler et al., 2007) and may add to the literature on lifetime prevalence of mental disorders increasing across successive generations (WHO International Consortium in Psychiatric Epidemiology, 2000). Age-related differential recall and age-related differences in the willingness to disclose information could also play an important role in accounting for this pattern.

Consistent with most studies on PTSD in the general population we found an approximately twofold sized gender difference with higher rates of PTSD in women than in men (Olf, Langeland, Draijer, & Gersons, 2007). Men were more likely to be exposed to violence, war/combat, motorized accidents, or disasters, whereas women were more often exposed to physical and sexual violence in relationships. Women may be at greater risk because of higher rates of sexual violence. Still many other factors such as women's younger age of the time of trauma, higher levels of peritraumatic dissociation, and gender-specific acute psychobiological reactions to the trauma may contribute to women's higher risk of PTSD.

The European studies suggest a disparity in prevalence rates between Europe and the US. The European population is, however,

certainly not a homogeneous one as European countries differ in language, sociodemographics, socioeconomics, and have different cultural and social systems. These differences could, at least partly, explain the distinct position of the Netherlands within Europe in the prevalence of PTSD.

The Netherlands is one of the oldest democracies in the world, founding member of the European Union (EU) and North Atlantic Treaty Organization (NATO), and focuses on both European and transatlantic relationships. It has an open economy, which depends heavily on foreign trade, and has one of the most free market capitalist economies in the world. Compared to other parts of Europe the country is known for its modern and liberal policies toward drugs, prostitution, homosexuality, and euthanasia. Traditionally the role of the Protestant and Roman Catholic Church has been dominant, but now many (42%) consider themselves as nonreligious. One might speculate that these characteristics lead to a greater propensity to reveal details of personal and emotional lives and to fewer stigmas attached to mental disorders and traumatic events. Characteristics of the Netherlands known to be associated with increased rates in PTSD and mental disorders include the degree of urbanization (It has the sixth largest population size in the EU, with 479 inhabitants per square kilometers; after Malta it is the most densely populated European country.), age distribution (with one of the lowest proportions of elderly in Europe), and ethnic and cultural diversity (with inhabitants originating from its former colonies of Indonesia and Suriname, immigrants from Southern Europe and Morocco due to labor migration, and a considerable proportion of refugees).

Interesting is that a major proportion of PTEs people indicated as their worst event did not fulfill the *DSM-IV* A1 stressor criterion. In contrast to the direct type of PTEs including bodily injury from violence, disaster, and accidents, the more indirect type of PTEs (witnessing or being confronted with) often did not meet the A1 criterion. Considering the development of the *DSM-V*, our data may add to the discussion on the broadening of the A1 criterion, especially to the inclusion of exposure such as learning about the unexpected death of a close friend/relative or watching atrocities on television.

We should indicate some of the limitations of the data collected. People with no fixed telephone access, with no fixed address, who were nonfluent in Dutch, had a hearing impairment, or those who were institutionalized were not included in the study. Compared to census data respondents having a non-Western cultural background, younger and older respondents were underrepresented in our sample. The underrepresentation of subgroups may reflect differential access to the study population or differential participation. A potential selection bias cannot be ruled out. Second, the response rate is considered narrowly acceptable and could have been influenced by the relatively anonymous way of interviewing by phone rather than in person, so people may have refused more easily. The lack of an incentive and the number of concurrent commercial telephone surveys could also have affected the response

rate. The response rate is considered typical of today's surveys and corresponds roughly with that of the individual Western European countries participating in the European Study of the Epidemiology of Mental Disorders. Undersampling, selection bias, and low response rate may lead to under- or overestimation of prevalence rates, but their exact influence is hard to assess. Third, PTSD was assessed using the CIDI version 2.1 and not with the more recent WMH-CIDI version. Finally, forgetting, misremembering, or reattribution of what was traumatic from a maturity perspective could lead to considerable recall biases in the recording of lifetime disorders (Wittchen et al., 1989). Particularly, recall of childhood sexual abuse can be unreliable and inconsistent (Williams, 1994).

The results indicate that PTSD is a fairly common disorder in the Dutch-speaking general population of the Netherlands and that exposure to potentially traumatic events is high. The findings resemble to some extent those found in the United States and to a lesser extent those found in other European countries. Because sexual and physical violence is reported quite frequently and these events present high risks of PTSD they should be the first target for prevention interventions. Women and young adults are found to be at higher risk of PTSD and should be given special attention in the prevention of PTSD.

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