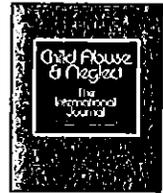


ref: 5473



Contents lists available at ScienceDirect

Child Abuse & Neglect



Child maltreatment and adult socioeconomic well-being^{☆,☆☆}

David S. Zielinski^{*}

National Institute of Mental Health, Bethesda, MD, USA

ARTICLE INFO

Article history:

Received 23 November 2004

Received in revised form 30 January 2006

Accepted 12 February 2006

Available online 7 October 2009

Keywords:

Child maltreatment
Socioeconomic status
Employment
Education
Long-term outcomes

ABSTRACT

Objective: Little empirical research has examined the impact that child maltreatment may have on victims' long-term socioeconomic well-being. The current study sought to address this gap by exploring the relationship between childhood experiences of abuse and neglect and several indicators of socioeconomic well-being in adulthood.

Method: Data from the nationally representative National Comorbidity Survey (NCS) ($n=5004$) were analyzed using logistic regression models to examine whether maltreatment in childhood (any maltreatment, physical abuse, sexual abuse, severe neglect, and multiple types of maltreatment) affected employment status, income, and health care coverage in adulthood. Several potential confounds of this relationship were included as covariates in the models, including race, sex, age, and several indicators of childhood socioeconomic status (SES).

Results: The results show that adults who had experienced maltreatment differed significantly from non-maltreated adults across each of the socioeconomic domains examined. Effects were additionally found to differ depending on the number of types of maltreatment experienced.

Conclusions: Increased rates of unemployment, poverty, and Medicaid usage indicate the significant long-term personal impact of early victimization. They also suggest a substantial societal cost from this problem through lost economic productivity and tax revenue, and increased social spending. Low socioeconomic status among parents has also been identified as a salient risk factor for the perpetration of maltreatment, and, as such, these results indicate a potential mechanism in the intergenerational transmission of violence.

Practice implications: The findings from this study suggest that victims of child maltreatment are at increased risk for financial and employment-related difficulties in adulthood. Approximately one million children are identified each year by state agencies as victims of maltreatment in the United States. Many maltreated children, furthermore, go undetected by protective service agencies, indicating the high prevalence of this problem, and underscoring its large economic costs to society. By highlighting the long-term socioeconomic costs of maltreatment, this research should encourage policy makers to focus on improving prevention, intervention, and treatment efforts for victims of abuse and neglect.

Published by Elsevier Ltd.

[☆] Preparation of this research brief was supported in part by funding from the American Psychological Association's Section on Child Maltreatment and the National Data Archive on Child Abuse and Neglect (NDACAN).

^{☆☆} The views expressed in this article are those of the author and do not necessarily represent those of the National Institute of Mental Health, the National Institutes of Health, or the U.S. Department of Health and Human Services. Data from the National Comorbidity Survey (NCS) were made available through the Inter-University Consortium for Political and Social Research (ICPSR), and were originally collected by Ronald Kessler. The collector of the original data, the original funding agencies or ICPSR bears responsibility for the analyses or interpretations presented herein.

^{*} Corresponding author address: National Institute of Mental Health, Office of the Director, 6001 Executive Bld, Rm 8206, Bethesda, MD 20852, USA.

Introduction

Researchers, practitioners, and policy makers have become increasingly interested in understanding how early experiences of abuse and neglect affect victims' long-term developmental well-being. Research addressing the life course consequences of childhood maltreatment has consistently found early victimization to be associated with later deficits in mental health (Banyard, Williams, & Siegel, 2001; Brown & Anderson, 1991; Cohen, Brown, & Smailes, 2001; Horowitz, Widom, McLaughlin, & White, 2001), physical health (Felitti, 1991; Felitti et al., 1998; Lissau & Sorensen, 1994; Moeller, Bachmann, & Moeller, 1993; Thompson, Arias, Basile, & Desai, 2002), and maladaptive family functioning (Banyard, 1997; Cole, Woogler, Power, & Smith, 1992; Frias-Armenta, 2002; Widom, 1989; Zurvain, McMillen, DePanfilis, & Risley-Curtiss, 1996). However, few studies to date have examined the long-term socioeconomic effects of child maltreatment.

Effects of child maltreatment on long-term socioeconomic well-being

Studies that have examined the socioeconomic effects of child abuse and neglect have tended to address these issues within the broader context of adult well-being. McCord (1983), for example, followed a sample of school-aged boys from the late 1930s and early 1940s through the late 1970s in order to study a wide range of adult outcomes, including occupational success. She found few employment differences between adults who had experienced abuse or neglect versus those who had not. No explanation was provided, however, as to how the occupational construct was measured, nor how it was analyzed, leaving serious questions about the finding's validity. Unlike McCord's (1983) results, Martin and Elmer (1992) found a strong relationship between adults' employment status and whether or not they had experienced maltreatment. In 1967, they identified 19 children as victims of severe abuse and conducted a broad follow-up when they were between the ages of 25 and 36. At the time of the follow-up, 11 of the 19 adults had been unemployed in the previous year, and, when working, 78% were employed in jobs that required minimal skill. They additionally found that more than half of their sample was receiving welfare benefits. While intriguing, the study's small sample size, concerns about the recruitment of subjects, and the lack of a comparison group call into question the actual size of these effects and limit their generalizability to the broader maltreated population. Hall (2000) also examined the effects of child maltreatment on several aspects of adult functioning. In-depth interviews with 20 urban, low-income women with histories of abuse indicated a general theme of difficulty in finding and holding onto meaningful employment. However, the purely qualitative nature of Hall's (2000) findings, particularly the absence of comparable urban, low-income women without abuse histories, calls into question their ability to be more widely generalized. Indeed, nearly all of the studies that have examined this issue have suffered from significant methodological limitations. Despite this, two studies in this area are of particular note.

Examining the long-term impact of physical and sexual abuse, Mullen, Martin, Anderson, Romans, and Herbison (1996) employed a large random sample of adult women in Dunedin, New Zealand. Change in participants' socioeconomic status (SES) from childhood to adulthood was one of the 11 life course outcomes examined. Mullen et al. (1996) found that both physical and sexual abuse were significantly related to a decline in later SES until the models were adjusted for several measures of childhood risk for abuse. Once these early risk factors were controlled, the relationship between maltreatment and SES change was no longer significant for either form of abuse. In one of the more comprehensive studies on the subject to date, Hyman (2000) examined the economic consequences of childhood sexual abuse in a sample of 1,889 adult lesbian women. Results indicated that nearly all of the survivors of sexual abuse had a lower income than their non-abused peers as a result of deficiencies in their physical health, mental health, and educational attainment. In particular, women who had experienced sexual abuse by a stranger earned approximately 11.5% less than those who had not had such an experience. The specificity of this sample, however, severely limits the extent to which these findings can be considered representative of the broader maltreated population. Furthermore, given the study's data, there was no way to control for the impact of childhood SES on later earning potential. If Mullen et al.'s (1996) findings are generalizable, Hyman's (2000) findings may be an artifact; indicating that early risk factors such as childhood SES are the primary predictors for both maltreatment and adult SES.

Effects of victimization on socioeconomic well-being

Child maltreatment can be understood more broadly as a form of interpersonal victimization. Although only a few studies have addressed the relationship between maltreatment and later socioeconomic well-being, several studies have examined how victimization more broadly defined affects this domain. Macmillan (2000) examined the impact of adolescent victimization on income in young adulthood using data from the National Youth Survey (NYS). The NYS sample includes 1,725 subjects between the ages of 11 and 17 who were first interviewed in 1976. Participants were followed longitudinally for ten years, and information was collected across a wide variety of adult outcomes. Macmillan (2000) defined adolescent victimization as having had an experience of sexual assault, being attacked with a weapon, or being beaten up or threatened to be beaten up before the age of 18. Measures of income in young adulthood were also collected. Results from the study indicated that violent victimization during adolescence (i.e., attacked with a weapon or beaten up/threatened to be beaten up) reduced hourly income by an average of 14%. Additionally, the effect of victimization on educational attainment and occupational status in young adulthood explained between 50 and 71% of the relationship's variance, indicating two mediational pathways. Significant income reductions were not found among those who had experienced sexual assault. An

important aspect of Macmillan's (2000) study is its use of adolescent SES as a control variable in the analyses, ensuring the income disparities evidenced in young adulthood were not the result of earlier social and economic factors. More recently, Macmillan and Hagan (2004) utilized the same data to explore the effects of adolescent victimization on additional forms of socioeconomic well-being. They found that those who had been victimized in adolescence were twice as likely to be unemployed and 65% more likely to be receiving public assistance (Macmillan & Hagan, 2004). Educational self-efficacy, performance, and attainment significantly mediated the relationship between victimization and later public assistance, but did not do so for unemployment. Although the findings from these studies deal with traumatic adolescent experiences more generally, and not maltreatment per se, they provide important insight into the impact that victimization can have on later socioeconomic outcomes and highlight one possible explanation for these relationships.

The current study utilizes a large, nationally representative sample to examine in greater detail the relationship between maltreatment and later socioeconomic well-being, namely income, employment status, and health insurance coverage. Maltreatment has consistently been found to be associated with several socioeconomically related domains, including education (Eckenrode, Laird, & Doris, 1993; Lansford et al., 2002; Perez & Widom, 1994; Shonk & Cicchetti, 2001), physical health problems (Felitti et al., 1998; Moeller et al., 1993; Thompson et al., 2002), and psychopathology (Cohen et al., 2001; Horowitz et al., 2001; Molnar, Buka, & Kessler, 2001). As such, it is hypothesized that maltreatment will be negatively related to each of the three domains of adult socioeconomic well-being examined.

Method

Sample

The National Comorbidity Survey (NCS) is a psychiatric epidemiologic general population survey that has been widely used over the previous decade to estimate the prevalence and examine the etiology and sequelae of numerous forms of psychopathology (Kessler et al., 1994; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Warner, Kessler, Hughes, Anthony, & Nelson, 1995; Wittchen, Knäuper, & Kessler, 1994). Studies have frequently used data from the NCS to examine issues related to both socioeconomic well-being (Ettner, Frank, & Kessler, 1997; Greenberg et al., 2003; Kessler, Greenberg, Mickelson, Meneades, & Wang, 2001; Kessler, Mickelson, Barber, & Wang, 2001) and family violence, including child maltreatment (Kessler, Molnar, Feurer, & Appelbaum, 2001; Molnar, Berkman, & Buka, 2001; Molnar et al., 2001b).

The NCS was administered between 1990 and 1992 to a representative sample of the non-institutionalized continental United States. A probability subsamples of 5,877 respondents between the ages of 15 and 54 completed Parts I and II of the survey. Kessler (1994) provides a detailed overview of the survey's sampling methodology. Since the outcomes of interest were socioeconomic in nature, the sample for the current study excluded participants under the age of 18 and those enrolled as students at the time of interview ($n = 724$), as well as those with missing data on one or more independent or dependent variable ($n = 149$). Cases excluded due to missing data were examined using bivariate analyses across age, sex, race, level of education, and non-missing independent and dependent variables to find out whether they differed from included cases. No significant differences between missing and included cases were found. The final sample size was 5,004. Participants in the final sample were 50.5% female, and the racial makeup was 77.0% White, 11.2% African-American, and 11.8% of other race(s). The mean age of participants was 35.32 ($SD = 9.54$).

Measures

NCS participants were asked a wide range of questions regarding their demographic background, physical and mental health, employment, finances, family, and traumatic life events, including experiences of childhood abuse and neglect.

Child maltreatment. The present study includes measures of three types of child maltreatment: physical abuse, sexual abuse, and severe neglect. Participants were asked to report on a four-point scale how frequently (often, sometimes, rarely, never) they had been hit, beaten, bitten, kicked, choked, burned or scalded during their childhood. Participants were defined as having been physically abused ($n = 334$) if they indicated having "often" experienced one or more of these events, or if they self-identified as a physical abuse victim by answering in the affirmative to a separate survey item ('you were physically abused as a child'). Participants were asked in separate questions whether they had ever been sexually molested or raped. For those answering in the affirmative, a follow-up question was asked inquiring how old they were when they had first had this experience. Sexual abuse ($n = 401$) was defined as having been sexually molested or raped before the age of 18. This operationalization is consistent with previous sexual abuse research using the NCS (Molnar et al., 2001b). Participants were additionally asked whether they had been "seriously neglected as a child." Determination of what constituted being "seriously neglected" was made by the individual participant. For the current study, severe neglect ($n = 145$) was defined as having answered 'yes' to this question. Two additional maltreatment variables were created. The first indicated whether the participant had experienced any of the three types of maltreatment, either singly or in combination ($n = 691$). The second indicated that the participant had reported experiencing multiple types of maltreatment (i.e., two or three; $n = 159$). Descriptive statistics of the five maltreatment variables across several demographic characteristics are presented in Table 1.

Table 1
Percent reporting child maltreatment by demographic characteristic.

Variable	n (%) ^a	Any maltreatment (n = 691) %	Sexual abuse ^b (n = 401) %	Physical abuse (n = 334) %	Severe neglect (n = 145) %	Multiple types (n = 159) %
All	5004 (100)	13.8	8.0	6.7	2.9	3.2
Sex						
Male	2479 (49.5)	8.5	2.7	5.7	2.2	1.8
Female	2525 (50.5)	19.0	13.3	7.6	3.5	4.5
Race						
European-American	3852 (77.0)	14.3	8.3	6.9	3.1	3.3
African-American	562 (11.2)	11.0	6.7	4.6	1.3	1.7
Other	590 (11.8)	13.2	7.5	7.5	3.1	3.9
Age						
18–24	742 (14.8)	14.0	7.5	7.5	3.0	3.7
25–34	1712 (34.2)	14.1	8.6	7.2	2.7	3.7
35–44	1587 (31.7)	12.3	6.3	6.4	2.8	2.7
45–54	963 (19.2)	15.6	10.2	5.5	3.2	2.6
Marital status						
Married/cohabitating	3411 (68.2)	14.0	8.1	6.9	2.9	3.2
Separated/previously married	618 (12.4)	18.0	10.5	7.9	4.2	3.9
Not married/not cohabitating	975 (19.5)	10.4	6.2	5.2	2.0	2.6

^a Percentages may not add up to 100 due to rounding.

^b Sexual abuse prevalence rates by victims' sex have been previously reported (Molnar et al., 2001b). Minor variation is due to different sample exclusion criteria.

Socioeconomic well-being. Part II of the NCS included several questions about participants' socioeconomic well-being. Nine socioeconomic measures are included in this study as dependent variables, including questions about participants' income, employment status, and health insurance coverage.

The income measures were derived from a survey item asking participants to indicate their "(family's) total income before taxes last year, including salaries, wages, social security, welfare, and any other income." They were asked to select from 23 income categories ranging from 'no income' through '\$150,000 and over,' with smaller, more precise categories at the lower end of the income scale. Given the high rate of non-response for this question (8.7%), missing values were imputed by the survey team using a regression-based model with an added randomized error term before the public release of the data (Kessler, 2002). Since few participants fell into the highest income category, they were included by the NCS team in a '\$100,000+' category. For the current study, a series of four dichotomous family income variables were created representing the best approximation of the lowest to highest quartiles in the income distribution (\$0–19,999; \$20,000–34,999; \$35,000–69,999; and \$70,000+). Since income was reported in categories, exact quartiles were not able to be calculated; the categories presented represent 23.5%, 25.3%, 37.1%, and 14.0% of the sample, respectively from lowest to highest income. Additionally, a dichotomous poverty measure was derived, indicating whether the participant's total family income, in conjunction with their household size, placed them below the federal poverty level. In 1990, the poverty level for a family of four was \$12,700 (Citro & Michael, 1995). Of the 5,004 participants in this study's sample, 495 (9.9%) fell below the federal poverty level.

Two employment-related measures were included as dependent variables. First, a dichotomous unemployment variable was constructed indicating that the participant was (1) not currently employed either full or part-time, (2) not a homemaker, and (3) not a full or part-time student. Using these criteria, 6.1% of the sample ($n = 305$) was classified as being unemployed. Given that data collection took place over a period of a year and a half, it is difficult to determine exactly how closely this figure reflects the concurrent national unemployment rate. However, the data were primarily collected between 1990 and 1991, which had annual unemployment rates of 5.8% and 6.4%, respectively (Stinton, 2003). The average unemployment rate between these two years was 6.1%, indicating that the current study's measure provides an excellent approximation. The second employment measure examined whether there had been one or more job losses within the participant's household over the previous 12 months that 'caused a major reduction in your total family income.' This variable was included to provide a longer term view of the participants' and their families' employment stability. Exactly 20% of the current sample ($n = 1002$) indicated that they or a member of their household had experienced a major income-reducing job loss over the previous year.

Survey participants answered several questions related to their health insurance coverage. Two measures of insurance coverage were examined as dependent variables in the current study. The first measures whether participants were enrolled in 'Medicaid, welfare, or any other public assistance that pays for part of your medical care.' Two hundred thirty-five participants (4.7%) indicated that they were enrolled in a publicly funded health insurance program. Second, a measure examined whether the respondent had 'any' health insurance coverage. Participants who responded that they were enrolled in a Medicaid-like program or responded in a subsequent question that they were 'covered by a health insurance plan other than Medicaid' ($n = 4077$), were indicated as having health insurance. Within the NCS sample, 4,312 participants (86.2%) reported having some form of health insurance.

Covariates. Covariates in all models included participants' sex, age, race, marital status, homemaker status, whether they had any children, their urbanicity (large city, medium/small city, non-urban), nativity (born in U.S./not), relative childhood financial status (better off, same as, worse off than other families), as well as their childhood caregiver's (primary financial source's) highest education level, occupation (U.S. Census category), and industry of employment (U.S. Census category). Each covariate was correlated with one or more independent or dependent variables, and is consistent with covariates regularly included in child maltreatment and/or labor economics literature. Missing data for childhood caregiver's education, occupation, and employment industry (5.5%, 3.8%, and 4.2%, respectively) were imputed using regression models with randomly selected residuals (Streiner, 2002). Predictor variables in these models included participants' sex, age, race, education level, marital status, employment status, and relative childhood financial status.

Zero-order correlations controlling for these covariates were estimated to examine the relationship between the nine socioeconomic dependent variables, given that income, employment status, and health insurance coverage are highly related domains (see Table 2). As expected, nearly all socioeconomic variables were correlated; however, the correlations were low enough to indicate that the measures represented unique socioeconomic constructs.

Data analysis strategy

Logistic regression models were fitted to estimate the relative odds of employment, education, income, and health insurance coverage by maltreatment status. The reference category for each model was the non-maltreated group, so odds ratios above 1 indicate a higher risk for the outcome among adults who had been maltreated. Likewise, odds ratios below 1 indicate a lower risk for this group. All models controlled for participants' sex, age, race, marital status, homemaker status, urbanicity, nativity, whether they had children, self-reported childhood financial status, as well as their childhood caregiver's education level, occupation, and industry of employment. For models estimating the effect of an individual type of maltreatment (sex

Table 2
Zero-order correlations for the dependent socioeconomic well-being variables.

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Family income: \$0–19,999	–								
2. Family income: \$20,000–34,999	–.387 [*]	–							
3. Family income: \$35,000–69,999	–.373 [*]	–.441 [*]	–						
4. Family income: >\$70,000	–.153 [*]	–.217 [*]	–.390 [*]	–					
5. Poverty	.545 [*]	–.223 [*]	–.200 [*]	–.072 [*]	–				
6. Unemployed	.228 [*]	–.054 [*]	–.093 [*]	–.068 [*]	.272 [*]	–			
7. Job loss—past 12 mos.	.116 [*]	.038 [*]	–.075 [*]	–.080 [*]	.078 [*]	.208 [*]	–		
8. Medicaid	.258 [*]	–.092 [*]	–.095 [*]	–.051 [*]	.340 [*]	.208 [*]	.391 [*]	–	
9. Any health insurance	–.245 [*]	.022	.133 [*]	.072 [*]	–.153 [*]	–.170 [*]	–.186 [*]	.139 [*]	–

Note. Covariates included in the correlations are delineated in Method Section.

^{*} $p < .05$

abuse, physical abuse, and severe neglect), the other two types were included as covariates in order to determine that type's unique effect.

Analysis of NCS data requires the use of statistical weights for several reasons (Kessler, 1994; Little, Lewitzky, Heeringa, Lepkowski, & Kessler, 1997). First, all non-respondents for part I were asked to complete a brief non-respondent survey. Results from the survey indicated systematic differences between those who agreed to participate and those who declined. A non-response adjustment weight was designed to account for this bias. Weighting was also required to account for variation in the selection probabilities both within and between families. The weight for analyses using data from part II of the survey further adjusts for an intentional over-sampling of adults with psychiatric disorders and participants aged 15–24. Proper statistical weighting was applied to all analyses in this study.

Results

Any experience of maltreatment

Logistic regression analyses were employed to examine the relationship between having experienced any type of maltreatment in childhood and later employment, income, and health insurance coverage. Results from these analyses indicate that adults who had experienced maltreatment were twice as likely as non-maltreated adults to be unemployed at the time of survey (odds ratio [OR] = 2.0, 95% confidence interval [CI] = 1.5, 2.8, $p < .001$; see Table 3), and 80% more likely to have had someone in their household lose their job over the previous 12 months (OR = 1.8, CI = 1.5, 2.2, $p < .001$). Survey participants who reported child maltreatment were also more than twice as likely as non-victims to fall below the federal poverty level (OR = 2.2, CI = 1.7, 2.8, $p < .001$), and nearly twice as likely to live in a household with a total income in the lowest quartile of the distribution (OR = 1.8, CI = 1.5, 2.2, $p < .001$). Maltreatment victims were also at higher risk than non-victims for not having health insurance coverage. Although they were more than twice as likely as adults without maltreatment histories to rely on Medicaid and other public funding for their health care expenses (OR = 2.2, CI = 1.6, 3.2, $p < .001$), they were still less likely overall to have some form of health care coverage (OR = 0.8, CI = 0.6, 1.0, $p < .05$).

Table 3
Adult socioeconomic well-being among victims and non-victims of child maltreatment.

Dependent variable	Did not report maltreatment (%)	Reported maltreatment (%)	Odds ratio (95% CI)
Employment			
Unemployed	5.7	8.7	2.0 (1.5, 2.8) ^{***}
Family job loss	18.3	30.7	1.8 (1.5, 2.2) ^{***}
Income (total family)			
Below poverty level	8.7	17.3	2.2 (1.7, 2.8) ^{***}
\$0–19,999	22.0	33.0	1.8 (1.5, 2.2) ^{***}
\$20,000–34,999	25.9	21.7	0.8 (0.6, 0.9) ^{**}
\$35,000–69,999	37.9	32.6	0.8 (0.7, 1.0) [*]
>\$70,000	14.2	12.6	1.0 (0.7, 1.2)
Health insurance			
Medicaid	3.9	9.4	2.2 (1.6, 3.2) ^{***}
Any health insurance	86.6	83.3	0.8 (0.6, 1.0) [*]

Notes. Percentages represent unadjusted prevalence rates. Covariates included in the logistic models are delineated in Method Section. CI = confidence interval.

^{*} $p < .05$.

^{**} $p < .01$.

^{***} $p < .001$.

Table 4
Adult socioeconomic well-being among victims and non-victims of child sexual abuse.

Dependent variable	Did not report sexual abuse (%)	Reported sexual abuse (%)	Odds ratio (95% CI)
Employment			
Unemployed	6.0	6.6	1.2 (0.7, 1.8)
Family job loss	19.2	30.1	1.5 (1.1, 1.9)**
Income (total family)			
Below poverty level	9.2	17.8	1.8 (1.3, 2.5)***
\$0–19,999	22.4	35.8	1.9 (1.5, 2.6)***
\$20,000–34,999	25.9	18.9	0.7 (0.5, 0.9)**
\$35,000–69,999	37.6	32.0	0.8 (0.6, 1.0)
>\$70,000	14.1	13.3	1.1 (0.8, 1.5)
Health insurance			
Medicaid	4.2	10.1	1.8 (1.2, 2.8)**
Any health insurance	86.5	82.9	0.7 (0.5, 1.0)*

Notes. Percentages represent unadjusted prevalence rates. Covariates included in the logistic models are delineated in Method Section. CI = confidence interval.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Maltreatment subtypes

Analyses were conducted to examine the impact of several different types of maltreatment, including sexual abuse, physical abuse, and severe neglect. Adults who had histories of sexual abuse were neither more nor less likely than non-sexually abused adults to be unemployed (OR = 1.2, CI = 0.7, 1.8, $p = .51$; see Table 4). Victims of sexual abuse were, however, 50% more likely than non-victims to live in a household in which someone lost a job during the previous year (OR = 1.5, CI = 1.1, 1.9, $p < .01$). They were also at higher risk than non-victims for having a low income. Victims were 80% more likely to fall below the federal poverty level (OR = 1.8, CI = 1.3, 2.5, $p < .001$) and 90% more likely to have family earnings in the lowest income quartile (OR = 1.9, CI = 1.5, 2.6, $p < .001$). Sexual abuse victims were also less likely than non-victims to have health insurance coverage (OR = 0.7, CI = 0.5, 1.0, $p < .05$), even though they were 80% more likely to be enrolled in Medicaid (OR = 1.8, CI = 1.2, 2.8, $p < .01$).

In comparison to participants who did not report experiencing childhood physical abuse, those who did experience this type of maltreatment were at increased risk for employment problems. Adults who had been physically abused, as children were 140% more likely than non-victims to be unemployed (OR = 2.4, CI = 1.6, 3.6, $p < .001$; see Table 5), and were 80% more likely to have experienced a financially detrimental job loss in their household over the previous year (OR = 1.8, CI = 1.4, 2.3, $p < .001$). Although they were neither more nor less likely than non-victims to have their family income fall into each of the income quartiles, adults with histories of physical abuse were 60% more likely to fall below the federal poverty line (OR = 1.6, CI = 1.1, 2.2, $p < .05$). With respect to health insurance, physical abuse victims did not significantly differ from non-victims in overall coverage (OR = 0.9, CI = 0.7, 1.3, $p = .73$). They were, however, 70% more likely than those not reporting childhood physical abuse to rely on Medicaid for their health insurance coverage (OR = 1.7, CI = 1.1, 2.8, $p < .05$).

Table 5
Adult socioeconomic well-being among victims and non-victims of physical abuse.

Dependent variable	Did not report physical abuse (%)	Reported physical abuse (%)	Odds ratio (95% CI)
Employment			
Unemployed	5.6	12.4	2.4 (1.6, 3.6)***
Family job loss	18.9	35.4	1.8 (1.4, 2.3)***
Income (total family)			
Below poverty level	9.3	18.3	1.6 (1.1, 2.2)*
\$0–19,999	23.0	30.6	1.0 (0.8, 1.4)
\$20,000–34,999	25.2	27.1	1.1 (0.8, 1.4)
\$35,000–69,999	37.5	32.4	1.0 (0.8, 1.3)
>\$70,000	14.3	9.9	0.9 (0.6, 1.4)
Health Insurance			
Medicaid	4.4	9.2	1.7 (1.1, 2.8)*
Any health insurance	86.5	82.0	0.9 (0.7, 1.3)

Notes. Percentages represent unadjusted prevalence rates. Odds ratios from the logistic models include covariates delineated in Method Section. CI = confidence interval.

* $p < .05$.

*** $p < .001$.

Table 6
Adult socioeconomic well-being among victims and non-victims of severe neglect.

Dependent variable	Did not report severe neglect (%)	Reported severe neglect (%)	Odds ratio (95% CI)
Employment			
Unemployed	5.9	11.3	1.5 (0.8, 2.8)
Family job loss	19.5	38.1	1.6 (1.1, 2.3) [*]
Income (total family)			
Below poverty level	9.5	22.0	1.9 (1.1, 3.0) [*]
\$0–19,999	23.1	38.5	1.8 (1.2, 2.7) ^{**}
\$20,000–34,999	25.2	28.2	1.2 (0.8, 1.8)
\$35,000–69,999	37.5	26.5	0.6 (0.4, 1.0) [*]
>\$70,000	14.2	6.7	NA
Health insurance			
Medicaid	4.6	7.5	0.9 (0.4, 1.9)
Any health insurance	86.4	80.1	0.8 (0.5, 1.3)

Notes. Percentages represent unadjusted prevalence rates. Odds ratios from the logistic models include covariates delineated in Method Section. CI = confidence interval. NA = cell size too small for analysis.

^{*} $p < .05$.

^{**} $p < .01$.

The logistic models for adults with histories of severe childhood neglect showed they were not significantly more likely to be unemployed than adults who had not experienced this type of maltreatment (OR = 1.5, CI = 0.8, 2.8, $p = .17$; see Table 6). They were, however, 60% more likely than non-victims to have had a job loss in their household during the previous 12 months (OR = 1.6, CI = 1.1, 2.3, $p < .05$). Victims of severe neglect were 90% more likely than non-victims to fall below the federal poverty line (OR = 1.9, CI = 1.1, 3.0, $p < .05$), and were 80% more likely to have a total family income in the lowest quartile of the income distribution (OR = 1.8, CI = 1.2, 2.7, $p < .01$). They did not differ significantly from non-victims with regard to Medicaid usage (OR = 0.9, CI = 0.4, 1.9, $p = .78$) or overall health insurance coverage (OR = 0.8, CI = 0.5, 1.3, $p = .27$).

Multiple types of maltreatment

Adults who had experienced more than one type of maltreatment were at increased risk for employment difficulties in comparison to adults who had not experienced multiple types of maltreatment. Victims were nearly three times as likely non-victims to be both unemployed (OR = 2.9, CI = 1.8, 4.9, $p < .001$; see Table 7) and to have had a job loss in their family that resulted in financial hardship during the previous year (OR = 2.8, CI = 2.0, 3.8, $p < .001$). Adults who reported having experienced more than one type of maltreatment were also nearly three times as likely as non-victims of multiple maltreatment to fall below the federal poverty level (OR = 2.8, CI = 1.8, 4.2, $p < .001$), and nearly twice as likely to live in a household with a total income in the lowest quartile of the distribution (OR = 1.9, CI = 1.4, 2.8, $p < .001$). Victims of multiple types of maltreatment were also significantly less likely than adults who had not experienced such maltreatment to have health insurance coverage (OR = 0.6, CI = 0.4, 1.0, $p < .05$). However, they were only marginally more likely than non-victims to rely on Medicaid and other public funding for their health care expenses (OR = 1.8, CI = 1.0, $p < .10$).

Table 7
Adult socioeconomic well-being among victims and non-victims of multiple types of maltreatment.

Dependent variable	Did not report multiple types (%)	Reported multiple types (%)	Odds ratio (95% CI)
Employment			
Unemployed	5.9	12.9	2.9 (1.8, 4.9) ^{***}
Family Job loss	19.3	43.4	2.8 (2.0, 3.8) ^{***}
Income (total family)			
Below poverty level	9.4	24.7	2.8 (1.8, 4.2) ^{***}
\$0–19,999	23.0	39.7	1.9 (1.4, 2.8) ^{***}
\$20,000–34,999	25.2	28.3	1.1 (0.8, 1.6)
\$35,000–69,999	37.5	26.9	0.7 (0.5, 1.0)
>\$70,000	14.3	5.7	0.4 (0.2, 0.8) [*]
Health Insurance			
Medicaid	4.5	10.2	1.8 (1.0, 3.2) [*]
Any health insurance	86.4	77.9	0.6 (0.4, 1.0) [*]

Notes. Percentages represent unadjusted prevalence rates. Odds ratios from the logistic models include covariates delineated in Method Section. CI = confidence interval.

^{*} $p < .10$.

^{*} $p < .05$.

^{***} $p < .001$.

Discussion

The current study has several important findings concerning the relationship between child maltreatment and later socioeconomic well-being. The study's results, potential explanatory factors, implications, and limitations will be discussed in turn.

Maltreatment and long-term socioeconomic well-being

The study's results supported the hypothesis that maltreatment places victims at increased risk for problems across several domains of socioeconomic well-being. Maltreatment was found, for example, to negatively affect victims' later income. Indeed, victims of any maltreatment, sexual abuse, and severe neglect were all approximately twice as likely as non-victims to fall below the federal poverty line and to have their family income fall into the lowest quartile in the income distribution. Adults who had experienced multiple types of maltreatment were found to be at particular risk for income deficits, and were nearly twice as likely to have a low family income and three times as likely to be in poverty. Physical abuse was the only type of maltreatment that did not follow this pattern. Adults reporting physical abuse were neither more nor less likely than adults not reporting such experiences to fall into the lowest income quartile. They were, however, found to be 60% more likely than non-victims to be below the poverty line. These seeming incongruous findings may indicate physical abuse victims have larger families than victims of other types of maltreatment since the poverty line is based in part on household size. The current study's income findings support previous research by Hyman (2000), which also found adulthood income deficits among abuse victims. However, it expands on this previous research by using a nationally representative sample, examining multiple types of maltreatment, and including covariates for several potential confounds, such as childhood SES.

Maltreatment was also found to affect victims' employment status. Overall, adults who had experienced maltreatment were at twice the risk as non-victims to be unemployed, however this relationship was not consistent for all of the maltreatment variables examined. Adults with histories of physical abuse or who had experienced multiple types of maltreatment largely drove this effect, and were, respectively, at 140% and 190% higher risk for being unemployed. Victims of sexual abuse and severe neglect, on the other hand, showed no differences in unemployment when compared to non-victims. These results indicate, first, that victims of physical abuse and multiple types of maltreatment could substantially benefit from enhanced access to job training programs and vocational counseling. Second, the findings provide some indication as to why previous studies examining this relationship have had mixed, seemingly inconsistent results. McCord (1983), for example, found no association between maltreatment and later employment, whereas research by both Martin and Elmer (1992) and Hall (2000) indicated that maltreatment victims may experience employment difficulties. These disparate findings may result from the studies' use of global maltreatment measures, masking the fact that individual maltreatment subtypes may have different effects on this domain. Further research, however, is required to determine why it is that only certain forms of maltreatment affect victims' later employment status.

The results additionally showed maltreatment to be associated with lower rates of health care coverage and a greater reliance on Medicaid. These findings were especially strong for victims of child sexual abuse, indicating that this population may be at particular financial risk should any health problems arise. The relationship between child maltreatment and later health care coverage has not previously been addressed in the literature; however, these findings do generally support Martin and Elmer's (1992) finding that severe abuse was related to later reliance on public assistance. The findings also indicate that victims' access to Medicaid, predicated on poverty status, does not always result in higher enrollment in this program. Victims of severe neglect were approximately twice as likely as adult who had not experienced neglect to fall below the poverty line, and yet were no more or less likely to utilize Medicaid. Further research is required to examine more explicitly whether maltreatment subtypes significantly differ from each other with regard to this issue, and to determine what factors are associated with the decision to enroll in the public services to which they are entitled.

Low socioeconomic status has been identified as a salient risk factor for the perpetration of abuse and neglect (Paxson & Waldfogel, 2002; Trickett, Aber, Carlson, & Cicchetti, 1991). Taken together with the current findings, this suggests that parents who have experienced maltreatment themselves may be more likely to abuse and neglect their own children, and previous research has found this to be true (Egeland, Jacobvitz, & Stroufe, 1988; Pears & Capaldi, 2001). Kaufman and Zigler (1987), for example, estimate that between 25% and 35% of parents who had experienced maltreatment went on to maltreat their own children. As such, the relationship between maltreatment and socioeconomic well-being highlighted in the current study may represent an important mechanism in the intergenerational cycle of violence.

The effects of maltreatment are not only born by the victims, but also by society as a whole through the costs incurred for prevention, identification, intervention, and treatment. Fromm (2001) estimated the total direct costs of maltreatment in the United States by calculating the annual costs associated with the immediate needs of maltreatment victims; these included child welfare services, hospitalization and physical health care, mental health care, and maltreatment-related law enforcement and legal services. The total direct expenditures for dealing with abuse and neglect in the U.S. were estimated to be in excess of \$24 billion (Fromm, 2001). It is more difficult to estimate the indirect costs of maltreatment, which may include increased spending due to later problems resulting from the earlier victimization, such as impaired physical and mental health, substance abuse, criminality, incarceration, special education, and teenage pregnancy. The socioeconomic outcomes examined in the current study would also fall into this category. Victims' increased likelihood for being unemployed would result in greater reliance on state unemployment insurance and lost employment productivity. Their higher risk for

falling below the poverty line further indicates lost tax revenue, from both federal and state income taxes and state and local sales taxes. Poverty status also opens eligibility to many forms of public assistance, and victims were found to utilize publicly funded health insurance at higher rates than the non-maltreated adult population. Given that nearly one in seven adults in the NCS reported having experienced one or more types of maltreatment, the indirect public costs stemming from victims' impaired socioeconomic well-being are certain to be substantial.

Potential mediational pathways

In order to more fully understand the practice and policy implications of this study's findings, it is necessary for future research to replicate them and elucidate the mediational pathways in this relationship. Once the more proximal effects of maltreatment, which more directly affect socioeconomic status, have been identified, specific steps can be taken to address these earlier problems and improve victims' long-term socioeconomic prospects. To date, there have been no published studies examining the pathways by which maltreatment may affect later socioeconomic well-being; however, research from the fields of child welfare, psychology, sociology, public health, and medicine, when combined with literature from labor economics, suggests several possible mechanisms for this relationship. The most extensively studied include educational attainment, psychopathology, and physical health.

Education

Considerable research has examined the shorter term educational effects of child maltreatment. Maltreatment has consistently been found to serve as a significant risk factor for impaired cognitive and academic outcomes (Eckenrode et al., 1993; Zingraff, Leiter, Johnson, & Myers, 1994). While childhood academic performance may be tangentially related to later socioeconomic performance, notably few studies have examined the longer term educational achievement and attainment of victims. Those that have tend to indicate that long-term educational outcomes are also negatively affected by early victimization (Lansford et al., 2002). Perez and Widom (1994), for example, investigated differences across several academic outcomes among adults with and without histories of abuse and neglect. They found that adults who had been maltreated were at higher risk for failing to complete high school, and completed on average a full year less schooling than non-maltreated adults. Similarly, Thornberry, Ireland, and Smith (2001) examined multiple problem outcomes among adolescents and found that earlier maltreatment was a strong predictor for high school dropout by age 18.

The association between education and later SES is one of the most thoroughly documented relationships in labor economics (Ashfelter & Rouse, 1997; Day & Newberger, 2002; Seawell & Hauser, 1975). Better performance in school and higher educational attainment leads to higher income, better odds for employment, and more stable employment over time. Several studies highlight this relationship. Grubb (1995), for instance, found that attainment of a bachelor's degree resulted in significantly higher income than a lower level degree, such as an associate's. Further research has shown that this relationship is not affected by the selectivity of the college or university attended (Dale & Krueger, 2002). Taken together with literature showing impaired educational performance and attainment among maltreatment victims, education represents a potentially robust mediational pathway between child maltreatment and later socioeconomic well-being. Indeed, Macmillan and Hagan (2004), in their work examining the socioeconomic effects of victimization more broadly, found education to explain a significant portion of the relationship's variance.

Psychopathology

The impact of child maltreatment on victims' mental health is one of this area's most comprehensively studied long-term effects. Victims of abuse and neglect have consistently been found to be at higher risk for a wide variety of psychopathologies in adulthood (Banyard et al., 2001; Brown & Anderson, 1991; Browne & Finkelhor, 1986; Cohen et al., 2001; Horowitz et al., 2001; Maker, Kemmelmeier, & Peterson, 1998).

The majority of research on the mental health outcomes of maltreatment has focused on depression (Kessler, Davis, & Kendler, 1997), and the link between maltreatment and later depressive disorders has been well documented. Previous findings from the NCS, for example, indicate that adults with histories of sexual abuse are nearly twice as likely as adults without such a history to develop a depressive disorder in adulthood (Molnar et al., 2001b). In turn, labor economics research finds that adults who suffer from depression earn as much as \$10 less per hour than non-depressed workers (Savoca & Rosenheck, 2000). Depression has also been found to negatively affect sufferers' employment status (Ettner et al., 1997). Dooley, Prause, and Ham-Rowbottom (2000), for example, found that earlier episodes of depression placed individuals at a significantly increased risk for later unemployment.

As with depression, maltreatment has consistently been linked to the later engagement in a variety of antisocial behaviors (Pollack et al., 1990; Smith & Thornberry, 1995; Widom, 1991; Zingraff, Leiter, Myers, & Johnson, 1993). It has most frequently been studied in relation to antisocial outcomes in childhood and adolescence, although a growing body of research has begun to examine this relationship into adulthood. Widom and Ames (1994) found that physical abuse and neglect to be significantly related to overall adult criminal behavior, while sexual abuse was related more specifically to the risk of arrest for sex-related crimes, such as prostitution. Economics research suggests a negative relationship exists between antisocial behavior and later income and employment (Caspi, Wright, Moffitt, & Silva, 1998; Kokko & Pulkkinen, 2000; Mitchell, 1992;

Tanner, Davies, & O'Grady, 1999). Several studies have found conviction for a criminal offence affects both later job stability and income, with previously incarcerated men 15–30% less likely to be employed than men who had never been incarcerated (Freeman, 1991).

Physical health

Adults with histories of adverse childhood experiences, including abuse and neglect, are at significantly increased risk for a wide range of later health problems, including heart and circulatory diseases, stroke, cancer, gastrointestinal problems, lung diseases, and diabetes (Batten, Aslan, Maciejewski, & Mazure, 2004; Drossman et al., 1990; Felitti et al., 1998; Goodwin, Hoven, Murison, & Hotopf, 2003; Lissau & Sorensen, 1994; Lundberg, 1993). The impact of physical health problems on socioeconomic well-being has been studied extensively (Adler et al., 1994). One of the key questions in economics literature has been the causal direction of this relationship: whether poor health impairs SES or poor SES impairs health (Poterba, 2002). Adams, Hurd, McFadden, Merrill, and Ribeiro (2003) found the relationship moves in both directions, although the health-to-SES relationship is slightly stronger. Furthermore, Case, Fertig, and Paxson (2003) found that children who had poor health had significantly lower income in adulthood than children without health problems, and these results remained significant after statistically controlling for parents' education and income. As such, these findings suggest that physical health problems associated with early victimization may provide an additional explanation for the current study's results.

Limitations

There are several limitations to the current study that should be noted. First, data from the NCS are cross-sectional, limiting the ability to infer causation. Ideally, the relationship between maltreatment and adult SES should be studied longitudinally beginning in childhood. Few longitudinal studies to date, however, have followed maltreatment victims far enough into adulthood to fully address this question. For this reason, the current results are best interpreted as an initial examination of this relationship, and future research is needed to replicate these findings using longitudinal data.

There are also limitations to the maltreatment measures utilized. Given the survey format of the NCS, all questions concerning abuse and neglect are, by definition, self-reported and retrospective. As such, there may be issues related to recall bias in that some participants may have reported maltreatment that had not actually occurred. It is possible, for instance, that adults who were dealing with socioeconomic problems at the time of the survey were more likely to self-identify as abuse victims than adults with greater socioeconomic security. To date, however, there has not been any research indicating that socioeconomic status is related to the propensity for reporting false instances of abuse or neglect and there is no *a priori* reason to believe such reporting occurred on a large enough scale to affect the data collected by a large, nationally representative survey.

Conversely, participants may not have reported maltreatment that did occur. This type of omission may have taken place among participants who experienced maltreatment when they were too young to remember it. In part, this may explain the discrepancy between the rates of abuse and neglect reported by NCS participants and recent official statistics derived from Child Protective Service (CPS) reports. In 2003, the most frequent type of maltreatment verified by CPS agencies was neglect, followed by physical abuse and sexual abuse, respectively (U.S. Department of Health and Human Services, 2005). This order is reversed in the findings from the current study. The majority of CPS reports, however, are for children between birth and age 2, indicating that the pattern of results from CPS data would be expected to differ from adult self-report since victims would almost certainly not recall maltreatment occurring during their first few years. Both methods provide insight into the maltreatment experience, and some have found self-labeled abuse and neglect to have strong effects in the long-term (Carlin et al., 1994). The self-report measures in the NCS also were open to some interpretation, which may have additionally influenced responses. Participants determined for themselves what words such as "rape," "physical abuse," and "severe neglect" meant, without prompting from the interviewer. As such, their responses were not necessarily uniform and may have been influenced by their socio-cultural background.

Despite these limitations, the current findings provide strong evidence that victims of child abuse and neglect are at significant risk for problems across several socioeconomic domains. This suggests a personal risk to victims that, to-date, has received little attention in the empirical literature, and yet may represent an important mechanism in the intergenerational transmission of violence. The results further suggest substantial costs to society through lost productivity and tax revenue, and increased social spending. Future research should be directed toward examining the causal pathways between early trauma and later socioeconomic well-being, so that targeted interventions can be developed to disrupt this relationship and improve victims' welfare in the long-term.

Acknowledgements

I wish to thank Ronald Kessler and Patricia Berglund for their advice regarding the NCS's income data. Karen Grace-Martin and Elliott Smith provided advice on some of the statistical analyses. John Eckenrode reviewed the finished manuscript and made several helpful suggestions.

References

- Adams, P., Hurd, M. D., McFadden, D., Merrill, A., & Ribeiro, T. (2003). Healthy, wealthy, and wise? Tests for direct causal paths between health and socioeconomic status. *Journal of Econometrics*, *112*, 3–56.
- Adler, N. E., Boyce, T., Chesney, M. A., Cohen, S., Folkman, S., Kahn, R. L., & Syme, S. L. (1994). Socioeconomic status and health: The challenge of the gradient. *American Psychologist*, *49*(1), 15–24.
- Ashfelter, O., & Rouse, C. (1997). *Income, schooling, and ability: Evidence from a new sample of twins*. Princeton University, Industrial Relations working paper #365.
- Banyard, V. L. (1997). The impact of childhood sexual abuse and family functioning on four dimensions of women's later parenting. *Child Abuse & Neglect*, *21*(11), 1095–1107.
- Banyard, V. L., Williams, L. M., & Siegel, J. A. (2001). The long-term mental health consequences of child sexual abuse: An exploratory study of the impact of multiple traumas in a sample of women. *Journal of Traumatic Stress*, *14*(4), 697–715.
- Batten, S. V., Aslan, M., Maciejewski, P. K., & Mazure, C. M. (2004). Childhood maltreatment as a risk factor for adult cardiovascular disease and depression. *Journal of Clinical Psychology*, *65*(2), 249–254.
- Brown, G. R., & Anderson, B. (1991). Psychiatric morbidity in adult inpatients with childhood histories of sexual and physical abuse. *American Journal of Psychiatry*, *148*, 55–61.
- Browne, A., & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the research. *Psychological Bulletin*, *99*, 66–77.
- Carlin, A. S., Kemper, K., Ward, N. G., Sowell, H., Gustafson, B., & Stevens, N. (1994). The effect of differences in objective and subjective definitions of childhood physical abuse in estimates of incidence and relation to psychopathology. *Child Abuse & Neglect*, *18*, 393–399.
- Case, A., Fertig, A., & Paxson, C. (2003). *From cradle to grave? The lasting impact of childhood health and circumstance*. Cambridge, MA, National Bureau of Economic Research working paper #9788.
- Caspi, A., Wright, B. R. E., Moffitt, T. E., & Silva, P. A. (1998). Early failure in the labor market: Childhood and adolescent predictors of unemployment in the transition to adulthood. *American Sociological Review*, *63*, 424–451.
- Citro, C. F., & Michael, R. T. (Eds.). (1995). *Measuring poverty: A new approach*. Washington, DC: National Academy Press.
- Cohen, P., Brown, J., & Smalles, E. (2001). Child abuse and neglect and the development of mental disorders in the general population. *Development and Psychopathology*, *13*, 981–999.
- Cole, P. M., Woogler, C., Power, T. G., & Smith, K. D. (1992). Parenting difficulties among adult survivors of father-daughter incest. *Child Abuse & Neglect*, *16*, 239–249.
- Dale, S. B., & Krueger, A. B. (2002). Estimating the payoff to attending a more selective college: An application of selection on observables and unobservables. *The Quarterly Journal of Economics*, *117*(4), 1491–1527.
- Day, J. C., & Newberger, E. C. (2002). *The big payoff: Educational attainment and synthetic estimates of work-life earnings*. Current population reports. Washington, DC: U.S. Census Bureau.
- Dooley, D., Prause, J., & Ham-Rowbottom, K. A. (2000). Underemployment and depression: Longitudinal relationships. *Journal of Health and Social Behavior*, *41*, 421–436.
- Drossman, D. A., Leserman, J., Nachman, G., Li, Z. M., Gluck, H., Toomey, T. C., & Mitchell, C. M. (1990). Sexual and physical abuse in women with functional or organic gastrointestinal disorders. *Annals of Internal Medicine*, *113*, 828–833.
- Eckenrode, J., Laird, M., & Doris, J. (1993). School performance and disciplinary problems among abused and neglected children. *Developmental Psychology*, *29*, 53–62.
- Egeland, B., Jacobvitz, J., & Stroufe, L. A. (1988). Breaking the cycle of abuse. *Child Development*, *59*, 1080–1088.
- Ettner, S. L., Frank, R. G., & Kessler, R. C. (1997). The impact of psychiatric disorders on labor market outcomes. *Industrial and Labor Relations Review*, *51*(1), 64–81.
- Felitti, V. J. (1991). Long-term medical consequences of incest, rape, and molestation. *Southern Medical Journal*, *84*, 328–331.
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) study. *American Journal of Preventive Medicine*, *14*, 245–258.
- Freeman, R. (1991). *Crime and employment of disadvantaged youths*. Cambridge, MA: National Bureau of Economic Research working paper #3875.
- Frias-Armenta, M. (2002). Long-term effects of child punishment on Mexican women: A structural model. *Child Abuse & Neglect*, *26*, 371–386.
- Fromm, S. (2001). *Total estimated cost of child abuse and neglect in the United States*. Chicago, IL: Prevent Child Abuse America.
- Goodwin, R. D., Hoven, C. W., Murison, R., & Hotopf, M. (2003). Association between childhood physical abuse and gastrointestinal disorders and migraine in adulthood. *American Journal of Public Health*, *93*(7), 1065–1067.
- Greenberg, P. E., Kessler, R. C., Birnbaum, H. G., Leong, S. A., Lowe, S. W., Berglund, P. A., & Corey-Lisle, P. K. (2003). The economic burden of depression in the United States: How did it change between 1990 and 2000? *Journal of Clinical Psychiatry*, *64*(12), 1465–1475.
- Grubb, W. N. (1995). Postsecondary education and the sub-baccalaureate labor market: Corrections and extensions. *Economics of Education Review*, *14*(3), 285–299.
- Hall, J. M. (2000). Women survivors of childhood abuse: The impact of traumatic stress on education and work. *Issues in Mental Health Nursing*, *21*, 443–471.
- Horowitz, A. V., Widom, C. S., McLaughlin, J., & White, H. R. (2001). The impact of childhood abuse and neglect on adult mental health: A prospective study. *Journal of Health and Social Behavior*, *42*, 184–201.
- Hyman, B. (2000). The economic consequences of child sexual abuse for adult lesbian women. *Journal of Marriage and the Family*, *62*, 199–211.
- Kaufman, J., & Zigler, E. (1987). Do abused children become abusive parents? *American Journal of Orthopsychiatry*, *57*, 186–192.
- Kessler, R. C. (1994). The National Comorbidity Survey of the United States. *International Review of Psychiatry*, *6*, 365–376.
- Kessler, R. C. (2002). *National Comorbidity Survey, 1990–1992. Part II. Codebook for NCS diagnosis/demographic data*. Ann Arbor, MI: Inter-University Consortium for Political and Social Research.
- Kessler, R. C., Davis, C. G., & Kendler, K. S. (1997). Childhood adversity and adult psychiatric disorder in the US National Comorbidity Survey. *Psychological Medicine*, *27*, 1101–1119.
- Kessler, R. C., Greenberg, P. E., Mickelson, K. D., Meneades, L. M., & Wang, P. S. (2001). The effects of chronic medical conditions on work loss and work cut back. *Journal of Occupational and Environmental Medicine*, *43*, 218–225.
- Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., Wittchen, H. U., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry*, *51*, 8–19.
- Kessler, R. C., Mickelson, K. D., Barber, C., & Wang, P. (2001). The association between chronic medical conditions and work impairment. In A. S. Rossi (Ed.), *Caring and doing for others: Social responsibility in the domains of family, work, and community*. Chicago: University of Chicago Press, pp. 403–426.
- Kessler, R. C., Molnar, B., Feurer, I. D., & Appelbaum, M. (2001). Patterns and mental health predictors of domestic violence in the United States: Results from the National Comorbidity Study. *International Journal of Law and Psychiatry*, *24*(4–5), 487–508.
- Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, *52*, 1048–1060.
- Kokko, K., & Pulkkinen, L. (2000). Aggression in childhood and long-term unemployment in adulthood: A cycle of maladaptation and some positive factors. *Developmental Psychology*, *36*(4), 463–472.
- Lansford, J. E., Dodge, K. A., Pettit, G. S., Bates, J. E., Crozier, J., & Kaplow, J. (2002). A 12-year prospective study of the long-term effects of early child physical maltreatment on psychological, behavioral, and academic problems in adolescence. *Archives of Pediatrics and Adolescent Medicine*, *156*(8), 824–830.
- Lissau, I., & Sorensen, T. I. A. (1994). Parental neglect during childhood and increased risk of obesity in young adulthood. *Lancet*, *343*, 324–327.

- Little, R. J. A., Lewitzky, S., Heeringa, S., Lepkowski, J., & Kessler, R. C. (1997). Assessment of weighting methodology for the National Comorbidity Survey. *American Journal of Epidemiology*, *146*, 439–449.
- Lundberg, O. (1993). The impact of childhood living conditions on illness and mortality in adulthood. *Social Science and Medicine*, *36*(8), 1047–1052.
- Macmillan, R. (2000). Adolescent victimization and income deficits in adulthood: Rethinking the costs of criminal violence from a life course perspective. *Criminology*, *38*(2), 553–580.
- Macmillan, R., & Hagan, J. (2004). Violence in the transition to adulthood: Adolescent victimization, education, and socioeconomic attainment in later life. *Journal of Research on Adolescence*, *14*(2), 127–158.
- Maker, A. H., Kemmelmeier, M., & Peterson, C. (1998). Long-term psychological consequences in women of witnessing parental physical conflict and experiencing abuse in childhood. *Journal of Interpersonal Violence*, *13*(5), 574–589.
- Martin, J. A., & Elmer, E. (1992). Battered children grown up: A follow-up study of individuals severely maltreated as children. *Child Abuse & Neglect*, *16*, 75–87.
- McCord, J. (1983). A forty year perspective on effects of child abuse and neglect. *Child Abuse & Neglect*, *7*, 265–270.
- Mitchell, J. M. (1992). Linkages among deviance in adolescence, antisocial personality disorders in adulthood, and work behavior. In R. G. Frank, & W. G. Manning (Eds.), *Economics and mental health*. Baltimore, MD: The Johns Hopkins University Press, pp. 182–192.
- Moeller, T. P., Bachmann, G. A., & Moeller, J. R. (1993). The combined effects of physical, sexual and emotional abuse during childhood: Long-term health consequences for women. *Child Abuse & Neglect*, *17*, 623–640.
- Molnar, B. E., Berkman, L. F., & Buka, S. L. (2001). Psychopathology, childhood sexual abuse and other childhood adversities: Relative links to subsequent suicidal behaviour in the US. *Psychological Medicine*, *31*(6), 965–977.
- Molnar, B. E., Buka, S. L., & Kessler, R. C. (2001). Child sexual abuse and subsequent psychopathology: Results from the National Comorbidity Survey. *American Journal of Public Health*, *91*, 753–760.
- Mullen, P. E., Martin, J. L., Anderson, J. C., Romans, S. E., & Herbison, G. P. (1996). The long-term impact of the physical, emotional, and sexual abuse of children: A community study. *Child Abuse & Neglect*, *20*(1), 7–21.
- Paxson, C., & Waldfogel, J. (2002). Work, welfare, and child maltreatment. *Journal of Labor Economics*, *20*(3), 435–474.
- Pears, K. C., & Capaldi, D. M. (2001). Intergenerational transmission of abuse: A two-generational prospective study of an at-risk sample. *Child Abuse & Neglect*, *25*, 1439–1461.
- Perez, C. M., & Widom, C. S. (1994). Childhood victimization and long-term intellectual and academic outcomes. *Child Abuse & Neglect*, *18*(8), 617–633.
- Pollack, V. E., Briere, J., Schneider, L., Knop, J., Mednick, S. A., & Goodwin, D. W. (1990). Child antecedents of antisocial behavior: Parental alcoholism and physical abusiveness. *American Journal of Psychiatry*, *147*(10), 1290–1293.
- Poterba, J. M. (2002). Some observations on health status and economic status. *Journal of Econometrics*, *112*, 65–67.
- Savoca, E., & Rosenheck, R. (2000). The civilian labor market experiences of Vietnam-era veterans: The influence of psychiatric disorders. *Journal of Mental Health Policy and Economics*, *3*, 199–207.
- Seawell, W., & Hauser, R. (1975). *Education, occupation, and earnings: Achievement in early career*. New York, NY: Academic Press.
- Shonk, S. M., & Cicchetti, D. (2001). Maltreatment, competency deficits, and risk for academic and behavioral maladjustment. *Developmental Psychology*, *37*(1), 3–17.
- Smith, C., & Thornberry, T. P. (1995). The relationship between childhood maltreatment and adolescent involvement in delinquency. *Criminology*, *33*, 451–477.
- Stinton, J. F. (Ed.). (1971). Employment status of the civilian noninstitutional population 16 years and over by sex, 1971 to date. *Employment and Earnings*, *50*(6), 158.
- Strelner, D. L. (2002). The case of missing data: Methods of dealing with dropouts and other research vagaries. *Canadian Journal of Psychiatry*, *47*, 68–75.
- Tanner, J., Davies, S., & O'Grady, B. (1999). Whatever happened to yesterday's rebels? Longitudinal effects of youth delinquency on education and employment. *Social Problems*, *46*(2), 250–274.
- Thompson, M. P., Arias, I., Basile, K. C., & Desai, S. (2002). The association between childhood physical and sexual victimization and health problems in adulthood in a nationally representative sample of women. *Journal of Interpersonal Violence*, *17*, 1115–1129.
- Thornberry, T. P., Ireland, T. O., & Smith, C. A. (2001). The importance of timing: The varying impact of childhood and adolescent maltreatment on multiple problem outcomes. *Development and Psychopathology*, *13*(4), 957–979.
- Trickett, P. K., Aber, J. L., Carlson, V., & Cicchetti, D. (1991). Relationship of socioeconomic status to the etiology and developmental sequelae of child abuse. *Developmental Psychology*, *27*(1), 148–158.
- U.S. Department of Health Human Services Administration on Children Youth Families (USDHHS). (2005). *Child maltreatment 2003*. Washington, DC: U.S. Government Printing Office.
- Warner, L. A., Kessler, R. C., Hughes, M., Anthony, J. C., & Nelson, C. B. (1995). Prevalence and correlates of drug use and dependence in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry*, *52*, 219–229.
- Widom, C. S. (1989). Does violence beget violence? A critical examination of the literature. *Psychological Bulletin*, *106*(1), 3–28.
- Widom, C. S. (1991). Childhood victimization: Risk factors for delinquency. In M. E. Colton, & S. Gore (Eds.), *Adolescent stress: Causes and consequences*. New York, NY: Aldine de Gruyter Publishers, pp. 201–221.
- Widom, C. S., & Ames, M. A. (1994). Criminal consequences of childhood sexual victimization. *Child Abuse & Neglect*, *18*(4), 303–318.
- Wittchen, H. U., Knäuper, B., & Kessler, R. C. (1994). Lifetime risk of depression. *British Journal of Psychiatry*, *165*(Suppl. 26), 16–22.
- Zingraff, M. T., Leiter, J., Johnson, M. C., & Myers, K. A. (1994). The mediating effect of good school performance on the maltreatment–delinquency relationship. *Journal of Research on Crime and Delinquency*, *31*(1), 62–91.
- Zingraff, M. T., Leiter, J., Myers, K. A., & Johnson, M. C. (1993). Child maltreatment and youthful problem behavior. *Criminology*, *31*, 173–202.
- Zurvain, S., McMillen, C., DePanfilis, D., & Risley-Curtiss, C. (1996). The intergenerational cycle of child maltreatment: Continuity versus discontinuity. *Journal of Interpersonal Violence*, *11*(3), 315–334.