

The Role of Physical and Sexual Assaults on the Ability to Complete Work Responsibilities

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Abstract

Sexual and physical assaults have many serious and persistent negative impacts on individual health. There is now a considerable literature base identifying and discussing these health outcomes. Less is known about the mediating mechanisms that link these types of assault with later outcomes. This study examines the role of sexual and physical assaults in self-perceptions of individual health on missing or cutting back on work responsibilities. In particular, perceptions of both mental and physical health are investigated to further refine understanding of the different impacts of assault on survivor health and behavior. Using a sample of 3,791 adults aged 30 to 84 from the Midlife in the United States (MIDUS) study, results of the analyses indicate that sexual and physical assaults do not have a direct effect on missing/cutting back on work responsibilities but do have an indirect effect through perceptions of health. The results can inform academic research, as important impacts of assault may be masked if mediating mechanisms are not investigated. In terms of policy, adults who have difficulty carrying out work responsibilities should be assessed for their overall health and survivors of violence should be offered health-related services following a victimization experience.

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Introduction

Experiences of victimization can have significant and long-lasting consequences affecting physical, psychological, and economic aspects of survivors' lives. Discourse on the consequences of victimization has received considerable attention and is underscored by the detrimental nature of these events on mental and physical health (see meta-analyses by Norman et al., 2012 as well as Reijntjes, Kamphuis, Prinzie, & Telch, 2010). To a lesser extent, research has described the adverse impact of victimization on work related outcomes, notably on being employed (Metzler, Merrick, Klevens, Ports, & Ford, 2017; Topitzes, Pate, Berman, & Medina-Kirchner, 2016) as well as on reduced incoming and earnings (Covey, Menard, & Franzese, 2013; Currie & Widom, 2010; Zielinski, 2009). Investigations pertaining to the link between victimization and negative work-related outcomes are especially important as survivors might be unable to immediately return to work following victimization as well as may face significant medical expenses, thus reducing potential lifetime income and savings.

Limited research has explored if and how certain mechanisms, such as physical and mental health, mediate any relationship between victimization and negative work-related outcomes. To address this gap in the literature, our study examines the role of sexual and physical assault in self-perceptions of individual health and missing or cutting back on everyday work responsibilities. In particular, perceptions of both mental and physical health are investigated to further refine understanding of the different impacts of assault on survivor health and behavior. To frame the significance of this study, literature detailing relationships between victimization, health, and work-related issues is reviewed.

Literature Review***The Role of Assault in Negative Employment and Work Outcomes***

A growing body of literature has showcased a positive relationship between prior assault and negative employment factors (de Jong, Alink, Bijleveld, Finkenauer, & Hendriks, 2015; Topitzes et al., 2016). Most commonly, research has centered on identifying whether prior assault influences an individual's employment status, with findings underscoring an association

between assault and being unemployed (Macmillan & Hagan, 2004; Metzler et al., 2017). For instance, Currie and Widom (2010) discovered that even after individuals were paired together based on sex, race, and age, those having been assaulted were significantly less likely to be employed as well as less likely to be employed in a skilled job. Similarly, in one of the most comprehensive examinations centered on assault and employment, Liu and colleagues (2013) discovered that after controlling for race and age, a greater proportion of men and women with a history of sexual or physical assault were unemployed compared with counterparts not experiencing these forms of assault. Moreover, assault has been shown to have a cumulative effect on unemployment, whereby a greater number (Metzler et al., 2017) and type (Zielinski, 2009) of adverse childhood experiences, generally physical and sexual assaults, increased the odds of unemployment.

In addition to the association between assault and unemployment, other negative employment factors appear to be influenced by assault, including reduced income and earnings (Covey et al., 2013; Currie & Widom, 2010; Zielinski, 2009) as well as being fired from a job (Loya, 2015; Sansone, Leung, & Wiederman, 2012). A related line of inquiry has tapped into whether survivors might need to take time off work stemming from a victimization experience. Examining work-related consequences of sexual violence, Loya (2015) relayed that the need to take time off for emotional recovery was the most common consequence of victimization described by her study respondents. While survivors took time off immediately following the event, “other survivors reported needing time off frequently in the years following the assault” (Loya, 2015, p. 2801), commonly to address potent psychological impacts of the victimization experience. From this standpoint, assault and violence manifest in short and long-term issues tied to employment, which can have a damaging influence on survivors and their families.

The Role of Assault in Health Outcomes

In addition to the heightened risk of negative employment outcomes, individuals with a history of assault are also more likely to exhibit an array of negative health outcomes (Gilbert et al., 2015). The role of physical assault during childhood has led some scholars to declare this form of victimization as a “major contributor to the burden of disease in all parts of the world” (Norman et al., 2012, p. e1001349). To illustrate this point, chronic and/or serious health conditions such as obesity (Alvarez et al., 2007), diabetes (Campbell, Farmer, Nguyen-Rodriguez, Walker, & Egede, 2018; Widom, Czaja, Bentley, & Johnson, 2012), lung disease (Widom et al., 2012), liver disease (Springer, Sheridan, Kuo, & Carnes, 2007), cardiovascular illness

(Hosang et al., 2013; Springer et al., 2007), gastrointestinal illness (Park et al., 2016), chronic pain (Arnow, 2004; Walsh, Jamieson, MacMillan, & Boyle, 2007), sexually transmitted infections (Norman et al., 2012), various psychiatric diagnoses (Pelcovitz, Kaplan, DeRosa, Mandel, & Salzinger, 2000), and cancer (Holman et al., 2016) are all more common among survivors of sexual abuse and physical assault that occurred during childhood.

Furthermore, general manifestations of poor physical and mental health, health care utilization, functional impairments, and high-risk health behaviors (e.g., drunk driving, tobacco use, risky sexual behavior, and substance use while pregnant) are more prevalent among assault survivors, even in the absence of a particular diagnosis (Edwards, Holden, Felitti, & Anda, 2003; Hager & Runtz, 2012; Herrenkohl, Hong, Klika, Herrenkohl, & Russo, 2013; McNutt, Carlson, Persaud, & Postmus, 2002), with individuals experiencing multiple forms of assault typically incurring the greatest health risks (Rodgers et al., 2004). The health-related repercussions of childhood exposure to assault can even begin to manifest prior to adulthood, with adolescents with histories of physical assault and sexual abuse during childhood being more likely to report poor health, depression, substance misuse, and depression (Hussey, Chang, & Kotch, 2006). Some research has even revealed that during childhood, survivors begin to develop negative mental health symptomatology as a result of early victimization experiences (Cuevas, Finkelhor, Ormrod, & Turner, 2009), which may contribute to later mental and physical health problems as children age.

The explanation for this robust association between physical assault during childhood and health is multifaceted, but largely rooted in the understanding of physical victimization as a form of toxic stress that gradually “gets under the skin” and eventually manifests itself as psychological and physiological wear and tear (i.e., allostatic load) (Hager & Runtz, 2012; Shonkoff et al., 2012; Solís et al., 2015, p. 738). In addition, research by Kendall-Tackett (2002) suggests four pathways by which assault can influence health including elevated risk of depression and trauma/PTSD (post-traumatic stress disorder), participation in harmful activities (e.g., risky sexual behavior, drug use), greater difficulties/strain in relationships, and the development of negative beliefs and attitudes about others. Each of these processes both increase the risk of health problems and manifest more frequently among assault survivors. Regardless of the exact mechanisms at play, assault, whether physical, sexual, or emotional, tends to have important ramifications for public health, with the average lifetime health care costs per survivor being estimated at US\$32,648 and the average adult medical costs for survivors averaging US\$10,530 (Fang, Brown, Florence, & Mercy, 2012).

The Role of Health and Health Perceptions in Employment and Work

In light of the role assault plays in the long-term health of survivors, it is worthwhile to consider the potential collateral consequences of impaired health among survivors for their ability to maintain employment and to flourish in their place of employment (Hone, Jarden, Duncan, & Schofield, 2015) and at home. A number of studies to date suggest that individuals with poor health and/or low health perceptions (or self-rated health) are at risk of being or becoming unemployed (Leijten et al., 2015; Robroek et al., 2015; van Rijn, Robroek, Brouwer, & Burdorf, 2014), taking health-related absences (Sundstrup, Jakobsen, Mortensen, & Andersen, 2017; Ubalde-Lopez, Delclos, Benavides, Calvo-Bonacho, & Gimeno, 2017), or reporting reduced work ability and/or productivity loss (de Wit, Wind, Hulshof, & Frings-Dresen, 2018; Koolhaas, van der Klink, de Boer, Groothoff, & Brouwer, 2014; Leijten et al., 2014; Lindegård, Larsman, Hadzibajramovic, & Ahlborg, 2014; Lohela-Karlsson, Nybergh, & Jensen, 2018). Importantly, research also indicates that workplace health support can elevate the productivity of employees, independent of the health profile of employees (Chen et al., 2015). Overall, these findings suggest that while health problems tend to interfere with various dimensions of employment, including productivity and engagement, employers' efforts to initiate and promote various forms of health support in the workplace may offset the degree to which health problems interfere with work.

The association between health problems, low perceived health, and negative workplace/employment outcomes has been detected in a number of recent studies. To illustrate, Lohela-Karlsson and colleagues (2018) recently examined a large sample of employees at a Swedish University and found that the majority of participants who reported health problems also stated that such problems affected their performance at work and their ability to work. Importantly, the study also revealed that production loss ranged between 31% and 42%, contingent on the exact health problem reported.

A similar study by Koolhaas and colleagues (2014) employed a sample of 5,247 workers aged 45 and older across five different work sectors to explore the role of perceived health and chronic health conditions in work ability. The findings indicated that perceived health played a significant role in explaining the detected associations between chronic health conditions and diminished work ability. The results also revealed that perceived health variables predicted work ability even for employees without chronic health conditions.

Finally, a very recent review by de Wit and colleagues (2018) covered nearly 10 years of recent literature on work participation among employees with health problems. The review concluded that there was moderate evidence for

the link between perceived health and work participation, and only low or very low-quality evidence for the link between worker psychological traits (e.g., optimism, motivation, self-efficacy) and work participation. In general, the results suggest that greater physical health and perceptions of health promote greater work participation and productivity, whereas diminished health can interfere with workplace activities and engagement.

The Current Study

Based upon a review of literature on negative health outcomes of physical and sexual assaults, two sets of hypotheses with multiple components addressing the relationship between victimization, health, and work-related outcomes are specified below.

Hypothesis 1a: Experiencing physical assault will increase the number of days an individual cannot complete full work responsibilities because of health reasons (i.e., direct effect).

Hypothesis 1b: Experiencing sexual assault will increase the number of days an individual cannot complete full work responsibilities because of health reasons (i.e., direct effect).

Hypothesis 2a: Negative perceptions of physical health will increase the number of days that the respondent cannot complete full work responsibilities.

Hypothesis 2b: Negative perceptions of mental health will increase the number of days that the respondent cannot complete full work responsibilities.

Hypothesis 2c: Physical and sexual assaults will lead to diminished perceptions of physical and mental health that will increase inability to complete full work responsibilities because of health reasons (i.e., indirect effect).

Method

To test the study hypotheses, the Midlife in the United States (MIDUS) project was used. The main objective of the study was to explore the role of behavioral, psychological, and sociological factors involved in the development of physical and mental health. In the current investigation, we elected to use these data due to the inclusion of assault, health, and well-being measures.

Participants

The sampling frame was nationally representative and included all noninstitutionalized, English-speaking adults in the conterminous United States between

the ages of 25 and 74 during 1995 to 1996. Researchers used working telephone banks to contact potential participants through random-digit-dialing. If the contact residence agreed to participate in the study, a list of all residents aged 25 to 74 years was generated and an individual respondent was chosen at random. Participants completed a computer-assisted telephone interview followed by a self-report questionnaire. Researchers oversampled metropolitan areas, siblings of the main respondents, and also included a national sample of twin pairs.

The first MIDUS study consisted of a sample of 7,108 who partook in the general (main) survey. A follow-up was conducted between 2004 and 2006 (MIDUS II) when respondents were 35 to 86 years of age. MIDUS II had a particular focus on physical and mental health and well-being and attempted to contact all individuals from the first survey. A total of 4,963 participants were followed up with in the second survey. We used data from MIDUS II in the current study.¹

Several covariates were included in our models to control for the effects of variables theoretically associated with our mediator and outcome variables. Summary statistics are presented in Table 1. Age, sex, and race were included to control for the effects of key demographic variables. Age reflected the respondents age at the time of taking the survey ($M = 56.05$; $SD = 12.33$). Sex was recorded as male ($n = 1,698$; 44.79%) and female ($n = 2,093$; 55.21%). Females were included in the models and males were designated as the reference category. Race was coded as White ($n = 3,501$; 92.35%), Black ($n = 130$; 3.43%), and other race ($n = 160$; 4.22%). The White respondents were designated as the reference group. Household size was also included in the models as prior research indicates that household crowding is related to crime rates (Barkan, 2000) and measured as the number of household members aside from the respondent ($M = 0.89$; $SD = 0.66$).

Measures

The dependent variable examined was a count measure of how many of the previous 30 days of work (including both formal employment and household work responsibilities) were missed or cut short because of health reasons. The measure ranged from 0 (none of the past 30 days) to 30 (all of the previous 30 days). On average, respondents missed or cut short 2.13 days from the past 30 days because of health-related reasons ($SD = 5.93$).

The focal independent variables were exposure to physical and sexual assaults. Respondents were asked whether they were ever (a) “physically assaulted or attacked” or (b) “sexually assaulted (e.g., forced sexual intercourse or other unwanted sexual contact)” that happened “at ANYTIME.”

Table 1. Descriptive Statistics.

Dependent Variable	Full Sample		Nonvictimized Sample		Sexual Assault Sample		Physical Assault Sample	
	M/Frequency (SD/%)	Minimum- Maximum	M/Frequency (SD/%)	Minimum- Maximum	M/Frequency (SD/%)	Minimum- Maximum	M/Frequency (SD/%)	Minimum- Maximum
Days Off from Work	2.13 (5.93)	0-30	1.96 (5.70)	0-30	3.66 (7.61)	0-30	3.41 (7.00)	0-30
Mediator Variables								
Perceptions of Physical Health	3.61 (0.97)	1-5	3.64 (0.96)	1-5	3.40 (1.03)	1-5	3.38 (1.04)	1-5
Perceptions of Mental Health	3.86 (0.90)	1-5	3.90 (0.87)	1-5	3.59 (1.01)	1-5	3.51 (1.00)	1-5
Focal Independent Variables								
Exposure to Physical Abuse—No	3,533 (93.19)	0-1	—	—	—	—	—	—
Exposure to Physical Abuse—Yes	258 (8.81)	0-1	—	—	—	—	—	—
Exposure to Sexual Abuse—No	3,474 (91.64)	0-1	—	—	—	—	—	—
Exposure to Sexual Abuse—Yes	317 (8.36)	0-1	—	—	—	—	—	—
Covariates/Control Variables								
Age	56.05 (12.33)	30-84	56.69	30-84	51.77 (11.27)	34-83	51.16 (10.13)	34-82
Sex—Male	1,698 (44.79)	0-1	1,559 (47.17)	0-1	44 (13.88)	0-1	104 (40.31)	0-1
Sex—Female	2,093 (55.21)	0-1	1,746 (52.83)	0-1	273 (86.12)	0-1	154 (59.69)	0-1
Race—White	3,501 (92.35)	0-1	3,058 (92.53)	0-1	295 (93.06)	0-1	229 (88.76)	0-1
Race—Black	130 (3.43)	0-1	112 (3.39)	0-1	5 (1.58)	0-1	15 (5.81)	0-1
Race—Other	160 (4.22)	0-1	135 (4.08)	0-1	17 (5.36)	0-1	14 (5.36)	0-1
Number of Household Members	0.89 (0.66)	0-9	.90 (0.64)	0-9	.84 (0.82)	0-6	.83 (0.81)	0-6
Depressive Episode—No	3,078 (81.19)	0-1	2,754 (83.33)	0-1	194 (61.20)	0-1	175 (67.83)	0-1
Depressive Episode—Yes	713 (18.81)	0-1	551 (16.67)	0-1	123 (38.80)	0-1	83 (32.17)	0-1
Agreeableness	3.45 (0.50)	1-4	3.44 (0.50)	1-4	3.44 (0.50)	2-4	3.55 (0.45)	2-4
Extroversion	3.11 (0.57)	1-4	3.12 (0.56)	1-4	3.10 (0.61)	1.2-4	3.04 (0.60)	1.2-4
Neuroticism	2.06 (0.62)	1-4	2.03 (0.61)	1-4	2.24 (0.70)	1-4	2.30 (0.67)	1-4
Conscientiousness	3.47 (0.44)	1-4	3.47 (0.43)	1-4	3.38 (0.49)	1.75-4	3.46 (0.48)	1-4
Openness	2.91 (0.53)	1-4	2.90 (0.53)	1-4	3.01 (0.55)	1.14-4	2.92 (0.58)	1.14-4
<i>n</i>	3,791		3,305		317		258	

Note. Dichotomous variables presented with frequencies and percentages. Continuous variables presented with means and standard deviations. *n* = analytic sample size.

Out of the 3,791 respondents included in the analytical sample (with complete information on study variables), 258 (6.81%) had experienced physical assault and 317 (8.36%) had experienced sexual assault. Importantly, researchers asked respondents how old they were when they were assaulted. This allowed us to explore temporal order. For both types of assault, none of the respondents had experienced these types of assault less than 3 years from the administration of the survey. On average, respondents experienced physical assault 24.97 years in the past ($SD = 12.64$) and sexual assault 14.91 years in the past ($SD = 8.39$). This placed the physical and sexual assaults temporally prior to the mediator and outcome variables.

Two mediator variables were included in our models gauging the respondent's current (i.e., "these days") self-perception of their own physical and mental/emotional health. On average, respondents reported their physical health as 3.61 ($SD = 0.97$) and mental health as 3.86 ($SD = 0.90$) on a 5-point scale (1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*). The mediators were correlated ($r = .55$; $p < .001$), indicating a substantial amount of overlap. Even so, the measures were conceptually distinct, so they were kept separate in the analyses and posed no collinearity problems in the models.

Other individual differences were controlled in each model which have been linked to victimization and negative health outcomes including experiencing a recent major depressive episode (Marsh et al., 2016) and measures of the "Big Five" personality traits (Kulig, Cullen, Wilcox, & Chouhy, 2019). Respondents were asked whether they experienced a depressive episode where they felt depressed for 2 or more weeks straight over the past 12 months. This was a dichotomous measure recorded as 0 = no (3,078; 81.19%) and 1 = yes ($n = 713$; 18.81%). The construction of the Big Five trait variables ranged from 1 to 4 and is described in detail in appendix. The traits consist of (a) agreeableness ($M = 3.45$; $SD = 0.50$), (b) extroversion ($M = 3.11$; $SD = 0.57$), (c) neuroticism ($M = 2.06$; $SD = 0.62$), (d) conscientiousness ($M = 3.47$; $SD = 0.44$), and (e) openness ($M = 2.91$; $SD = 0.53$).

To extrapolate on the subsamples of victims and nonvictims, Table 1 presents the descriptive statistics of these groups separately. It is clear that victims have more negative health symptomology than the nonvictimized subsample and rate their own mental and physical health lower than their nonvictimized counterparts. The victimized subsamples also report more missed days of work than the nonvictimized subsample in line with expectations. No substantive differences are noticed between groups regarding personality characteristics.

Procedure

To test the aforementioned hypotheses, we conducted a generalized sequential equations path model. The generalized model allowed us to capture the

Table 2. GSEM Model From Assault to Days Off/Cut From Work Through Perception of Physical and Mental Health ($n = 3,791$).

	Model 1—Physical Health (DV)		Model 2—Mental Health (DV)		Model 3—Days Off/Cut (DV)	
	<i>b</i> (SE)	Exp (<i>b</i>)	<i>b</i> (SE)	Exp (<i>b</i>)	<i>b</i> (SE)	Exp (<i>b</i>)
Mediator variables						
Perceptions of physical health	—	—	—	—	-0.66 (.04)***	0.52
Perceptions of mental health	—	—	—	—	-0.05 (.04)	0.95
Focal independent variables						
Exposure to physical assault	-0.27 (.12)*	0.77	-0.24 (.13)†	0.79	0.18 (.11)†	1.20
Exposure to sexual assault	-0.31 (.12)**	0.74	-0.42 (.12)***	0.66	0.09 (.10)	1.10
Covariates/control variables						
Age	-0.03 (.00)***	0.97	-0.02 (.00)***	0.98	0.00 (.00)	1.00
Sex—Female	0.15 (.07)*	1.17	0.07 (.07)	1.07	0.38 (.07)***	1.46
Race—Black	-0.72 (.17)***	0.49	-0.32 (.18)†	0.73	-0.11 (.16)	0.90
Race—Other	-0.46 (.15)**	0.63	-0.21 (.15)	0.81	-0.01 (.14)	0.99
Number of household members	-0.02 (.05)	0.98	0.06 (.05)	1.06	-0.01 (.04)	0.99
Depressive episode	-0.58 (.08)***	0.56	-1.18 (.09)***	0.31	0.42 (.07)***	1.52
Agreeableness	-0.37 (.08)***	0.69	-0.17 (.08)*	0.85	0.05 (.08)	1.05
Extroversion	0.41 (.07)***	1.51	0.50 (.07)***	1.66	-0.18 (.07)**	0.83
Neuroticism	-0.41 (.05)***	0.66	-0.86 (.06)***	0.42	0.19 (.05)***	1.21
Conscientiousness	0.76 (.07)***	2.14	0.64 (.07)***	1.89	-0.28 (.07)***	0.75
Openness	0.32 (.07)***	1.38	0.23 (.07)**	1.26	0.28 (.07)***	1.32

Note. Coefficients estimated using GSEM in Stata 15.0. Mediator variables estimated using ordinal logistic regression. Dependent variable "Days Off" estimated using negative binomial regression. All significance tests are two-tailed. GSEM = generalized sequential equation modeling; DV = dependent variable; n = analytic sample size; b = unstandardized regression coefficient; Exp(b) = exponentiated regression coefficient (interpret as odds ratio for ordinal regression and incident rate ratio for negative binomial regression).

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

paths between variables measured at different levels. The mediators were measured at the ordinal level (1-5) while the outcome was a count (0-30). Therefore, the pathways to the mediators were estimated using ordinal logistic regression, whereas the paths to the outcome were estimated using negative binomial regression (used in place of Poisson regression to account for overdispersion). The equations were estimated simultaneously to achieve appropriate standard errors (see Rabe-Hesketh, Skrondal, & Pickles, 2005).

Results

Table 2 presents the results from the generalized regression models. Models 1 and 2 regressed perceptions of physical and mental health on physical and sexual assaults and study covariates. Both physical and sexual assaults decreased

perceptions of physical and mental health. Experiencing physical assault reduced the odds of perceiving oneself in good physical health by 23% (odds ratio [OR] = 0.77; $p < .05$) and 21% for mental health (OR = 0.79; $p < .10$). Experiencing sexual assault corresponded to a reduction in the odds of reporting good physical health by 26% (OR = 0.74; $p < .01$) and 34% for mental health (OR = 0.66; $p < .001$). The results showed that experiencing assault of both kinds reduced the likelihood that a respondent would report that they are in good physical and mental health. The effect was a bit stronger for sexual assault (ORs = 0.74 and 0.66, respectively) compared with physical assault (ORs = 0.77 and 0.79, respectively), but both effects were fairly substantial.

Several individual-level variables were also significant in the models and many had similar effects for both physical and mental well-being. Older respondents, racial minorities, and individuals who experienced a recent episode of depression were all less likely to report that they were in good health. Females reported better physical health than males. Respondents who scored high in agreeableness and neuroticism were less likely to report that they were in good health, whereas those high in extroversion, openness, and conscientiousness were all more likely to report that they were in good health. These results held for mental health except for the race effect which was much weaker than for physical health. It should also be noted that the negative health consequences of depression and neuroticism were noticeably greater for mental health than physical health.

In Model 3 in Table 2, we present the impact of assault along with perceptions of health on the ability to work and carry out daily responsibilities. Upon taking perceptions of health into account, exposure to sexual assault had no direct effect on ability to work (OR = 1.10; $p > .10$), whereas there was a potential direct effect between physical assault and a reduction in the ability to work at the 90% confidence interval (OR = 1.20; $p < .10$). A substantial and statistically significant effect was present between perceptions of physical health and days cut or taken off from work/home duties. There was not a significant effect of perceptions of mental health on days cut or taken off of work/home duties.

Females were more likely to cut days short or miss days of work than males and those who had a recent depressive episode were more likely to have cut or missed days of work than those who had not had recent depression. In addition, those high in neuroticism and openness were more likely to miss days or periods of work, whereas those high in extroversion and conscientiousness were less likely to miss days than their counterparts.

The main results are depicted in Figure 1. Neither physical nor sexual assault had a strong direct effect on days cut short or missed from work or daily responsibilities. However, both physical and sexual assaults significantly decreased

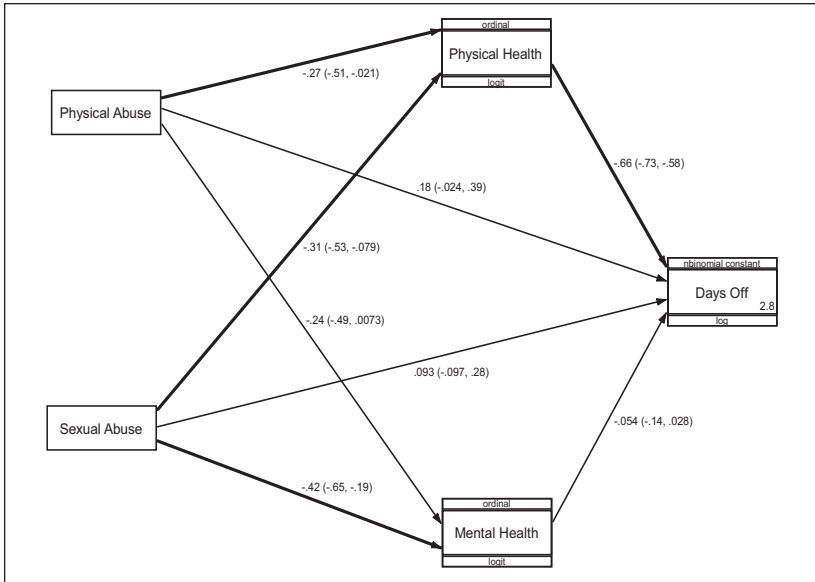


Figure 1. GSEM path model of study variables on days off/cut from work responsibilities.

Note. Bold lines indicate statistically significant pathways at $p < .05$ (two-tailed tests). GSEM = generalized sequential equation modeling.

perceptions of physical health which, in turn, had a strong, statistically significant impact on the ability to complete work. These results highlight the importance of examining intricate pathways between negative life experiences, health and wellness, and behavioral outcomes.²

Study Summary and Implications

Overall, the results confirm the role of victimization on negative health outcomes. Although the existing literature continually supports this association, questions remain about the mechanisms behind this relationship.

We find that victimization in the form of physical and sexual assaults deteriorates perceptions of personal health and well-being. This leads to difficulty completing life responsibilities. Better understanding of this more complex relationship can assist in violence prevention and intervention efforts.

Revisiting our specific research hypotheses, contrary to the expectations in Hypotheses 1 and 2, there was no direct effect of either physical or sexual assault on the days a person takes off or cuts back on work responsibilities. In

other words, physical or sexual assault experiences do not independently decrease work productivity as measured in this study. Even so, the health mediators appear to explain the indirect link between victimization and the completion of work responsibilities. In addition, part of this may be explained by the survey itself. No respondent had reported victimization less than 3 years from the survey, which seems quite unusual. Given the wording of the question, which does not get at frequency, it could be their first experience or the most salient one in the minds of respondents. We simply do not know, which places some limit on the interpretation of this finding.

In support of Hypothesis 2a, however, participants who rated their physical health lower were at greater risk for missing out on their work responsibilities than those who ranked their physical health as good. Still, in contrast to the expectations stated in Hypothesis 2b, mental health did not have a direct effect on meeting work responsibilities. The results did reveal that both sexual assault and physical assault decreased physical health, which had a strong impact on missing out on work responsibilities. Mental health did not emerge as a mediator, despite being significantly linked to sexual assault experiences. This is likely due to the finding that mental health did not affect missing out on work responsibilities. However, there are certainly other outcomes of interest that mental health impacts which is an avenue for further research. Overall, Hypothesis 2c is partially supported in that support emerged for the mediating role of physical health in the link between both sexual and physical assaults and work responsibilities.

It is also important to point out that our results indicate that females who experienced victimization were significantly more likely than males to be unable to complete work responsibilities. This was not due to perceptions of personal health. We were unable to refine the research to examine additional linking mechanisms between victimization and missing days of work for female survivors. This is an integral piece of the puzzle to be incorporated into future studies.

Although the present study contributes to the small body of research that seeks to explore physical and mental health as explanations of the relationship between victimization and negative work outcomes, it is not without its limitations. First, we were unable to examine individual differences in coping skills and coping resources as potential moderators of the detected relationship between assault experiences and work outcomes. Future research would benefit from this type of investigation, as these factors might affect the generalizability of our findings and inform interventions. Second, due to the nature of the items available in the MIDUS data, it cannot be definitively determined whether negative perceptions of physical and mental health preceded the assault experience. Future research should employ alternative data

sources to examine the robustness of our results, particularly when it comes to teasing apart the causal direction of the link between mental health and assault experiences. Third, the victimization variables are lifetime prevalence measures and do not lend themselves to examining repeat and polyvictimization. These types of measures would allow a more nuanced study of the role of victimization on behavior.

Despite these limitations, there are a number of theoretical and methodological implications of the current study. To begin, our study is among the first to explore both mental and physical health as mediators of the relationship between sexual and physical assault victimization and work responsibilities. Examining the role of mental and physical health in this process can inform prevention efforts that might otherwise overlook key points of intervention. Second, even after controlling for the effects of many time stable personality characteristics (i.e., sex, age, race, personality), assault remained a substantial risk factor for negative health outcomes. This lends partial support for state-dependent arguments of the relationship between victimization and negative health outcomes. In other words, the victimization experience itself appears to affect health outcomes, above and beyond merely having certain individual characteristics that increase the propensity (i.e., risk heterogeneity) for negative health outcomes. With that said, personality characteristics *were* statistically and substantively related to negative health outcomes, also supporting the risk-heterogeneity perspective which should not be ignored in theorizing about the negative consequences of victimization (see Wittebrood & Nieuwbeerta, 2000).

Practically, our results can inform policy and practice. First, there is a broad literature on the association between victimization and neglect and later deleterious outcomes. Our results are consistent with this literature, indicating a need for counselors, therapists, and other professionals who come into contact with those with physical and mental health problems to probe further for evidence of any sexual or physical assault. Thompson and colleagues (2002) found that women with a history of sexual and physical assaults exhibited a host of negative health outcomes that may have been prevented by early intervention by a health care or mental health provider. Screening for assault and neglect early in the life course may be integral to reducing negative mental and physical health outcomes. Furthermore, interventions that occur immediately after victimization have the potential for stemming the harm due to victimization.

Second, resources can be offered at places of employment and in the community in an effort to assist individuals with mental and/or physical health challenges. Community health centers are one type of institution that can provide information and care to those experiencing physical and mental health

difficulties. Specifically, adhering to the *Adult Preventive Health Care Schedule* encourages adults to disclose more about their victimization experiences, feelings of depression, and alcohol misuse. Furthermore, following these guidelines could increase knowledge on where to find help with these issues in the communities and serve as a “best practice” for any work or community health endeavor.

In the case of sexual assault, Sexual Assault Response Teams (SARTs) are another useful resource that have been discussed extensively in the recent literature (Greeson & Campbell, 2013, 2015; Moylan et al., 2017). SARTs are intended to enhance the response to sexual assault and ideally the negative health consequences of sexual assault (Campbell, 2008), by providing a coordinated response that involves prosecutors, police, nurses/doctors, victim advocates, and other sexual assault responders (Greeson et al., 2016). The primary goal is to provide sexual assault survivors with a well-rounded set of professionals as a resource who can coordinate the effort (through multidisciplinary cross-training, case review, and policy development) to improve survivor well-being (Greeson et al., 2016). This typically involves improving legal outcomes for assault survivors, improving the help-seeking experiences of assault survivors, as well as sexual assault education and prevention (Greeson & Campbell, 2015). Although SARTs have been shown to provide a number of benefits to participants, recent research suggests that the composition and organization of some SARTs end up being more effective, with those using more formalized structures and multidisciplinary evaluation efforts yielding better outcomes for sexual assault survivors (Greeson et al., 2016).

Curricula can be offered in the community as well as in places of employment to ensure that employees and community members have access to information and services. The implementation of such curricula may be especially important as a tool to buffer the deleterious consequences of physical and sexual assaults for mental and physical health, thereby improving work outcomes and potentially workplace morale. One approach that has gained traction is the Mental Health First Aid (MHFA) program. MHFA is a standardized psychoeducational curriculum that was developed to inform the public and support individuals with physical and mental health needs through improved knowledge about mental health. The program also educates the public on how to refer individuals in need of care to the appropriate providers. A meta-analysis of this program indicated that participants in the program increased their knowledge about mental health and increased their own supportive behavior toward individuals with mental health issues (Hadlaczky, Hökby, Mkrtchian, Carli, & Wasserman, 2014). The MHFA, or similar-type program, is easily translatable between community organizations and in the workplace.

These types of efforts may increase knowledge about mental and physical health services and encourage survivors of assault to seek services that can assist in completing work-related responsibilities.

In conclusion, this study sought to examine multiple hypotheses, which tapped into direct and indirect effects of physical and sexual abuse, with perceptions regarding physical and mental health operating as mediators, on time taken off from work. Results from the path model showcase that while physical and sexual abuse did not directly influence time taken off from work, physical abuse did indirectly influence time taken off through perceptions of physical health. Based upon the findings discovered here, recommendations include utilization of MHFA, SARTs, and adult preventive health care schedules to assist survivors as they cope with their victimization experience to reduce the impact of physical and mental health-related issues on other facets of their lives.

Appendix

Construction of "Big Five" Personality Traits.

Trait	Adjectives	Trait	Adjectives
Agreeableness ($\alpha = .80$)	Helpful	Conscientiousness ($\alpha = .68$)	Organized
	Warm		Responsible
	Caring		Hardworking
	Softhearted		Careless (R)
	Sympathetic		Thorough
Extroversion ($\alpha = .76$)	Outgoing	Openness ($\alpha = .77$)	Creative
	Friendly		Imaginative
	Lively		Intelligent
	Active		Curious
	Talkative		Broad-minded
Neuroticism ($\alpha = .74$)	Moody		Sophisticated
	Worrying		Adventurous
	Nervous		
	Calm (R)		

Note. Scaling: Personality traits scales are constructed by calculating the mean across each set of items. All items except ones marked with (R) were reverse-coded so that high scores reflect higher standings in each dimension. Missing values: The scales are computed for cases that have valid values for at least half of the items on the particular scale. Scale scores are not calculated for cases with fewer than half of the items on the scales. Respondents were asked how much each of several self-descriptive adjectives described them on the following scale: 1 = a lot, 2 = some, 3 = a little, 4 = not at all.

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Notes

1. Readers may find the official documentation useful given the complexity of the sampling and research design. Documentation can be found here: http://midus.wisc.edu/findings/Understanding_Data_Collection_in_MIDUS.pdf.
2. A series of supplemental interaction analyses were run to examine moderation effects between the two forms of assault and sex, age, race, and depression. With the exception of a potential race by physical assault effect on perceptions of mental health, there were no significant interactions. In addition, time since the assault was included as a control and mediator variable which did not change the conclusions.

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