

Self-Reported Physical Health Associations of Traumatic Events in Medical and Dental Outpatients

A Cross-Sectional Study

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Abstract: The purpose of this cross-sectional study was to understand the prevalence and severity of health-related sequelae of traumatic exposure in a nonpsychiatric, outpatient sample.

Self-report surveys were completed by patients seeking outpatient medical (n = 123) and dental care (n = 125) at a large, urban academic medical center.

Results suggested that trauma exposure was associated with a decrease in perceptions of overall health and an increase in pain interference at work. Contrary to prediction, a history of interpersonal trauma was associated with less physical and emotional interference with social activities. A history of trauma exposure was associated with an increase in time elapsed since last medical visit. Depression and anxiety did not mediate the relationship between trauma history and medical care.

Based on these results, clinical and research implications in relation to the health effects of trauma are discussed. The results suggest that routine screening for traumatic events may be important, particularly when providers have long-term relationships with patients.

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Abbreviations: BSI = Brief Symptom Inventory, CESD = Center for Epidemiologic Studies Depression Scale, IPT = interpersonal trauma, Non-IPT = noninterpersonal trauma, TIC = trauma-informed care, TLEQ = Traumatic Life Events Questionnaire, SF-12 = Short Form 12.

INTRODUCTION

Exposure to traumatic events, such as domestic violence, sexual assault, and child abuse are highly prevalent in the general US population.^{1–3} Yearly crime data suggest that exposure to community violence (eg, robbery, physical assault,

and gun violence) is also common in certain U.S. neighborhoods.⁴ Individuals vary in how they react and adjust to traumatic events. Some survivors experience impairments immediately after a traumatic event, and others exhibit delayed symptomatology.⁵ Some individuals experience a level of posttraumatic resilience that is often associated with a flexible personality style and higher levels of social support.⁶ For many survivors, trauma also has a large health burden. For example, survivors might cope by adopting maladaptive health behaviors such as overeating, smoking, substance use, and high-risk sexual behavior.^{7,8} In the long-term, trauma survivors may experience chronic levels of physiological reactivity which may increase vulnerability to developing inflammatory or autoimmune disorders.⁹ Overall, trauma exposure has been associated with subsequent arthritis/rheumatism, headaches, chronic pain, gastrointestinal and gynecological problems, and cardiac issues; exposure to multiple traumatic events results in an increased disease burden.^{8,10,11}

Although negative coping behaviors contribute to health problems and high levels of overall healthcare utilization for illness,¹² trauma survivors may actually avoid seeking routine, preventive medical care, such as mammograms, cervical cancer screenings, and dental prophylaxis.^{13–16} In addition to emotional distress, patients often experience specific physiological reactions when trauma memories are “retriggered.”^{17,18} Many healthcare visits involve the clinician being in close proximity to the patient and needing to touch the patient’s body, which may be distressing for some survivors. Overall, research suggests that some trauma survivors show a paradox in engaging in medical care—increased overall usage, particularly for sick visits, and decreased use of routine, nonemergency care. Survivors who have high levels of depression, anxiety, and posttraumatic stress symptoms may be the most vulnerable because these symptoms contribute to avoidance of nonemergency medical care and an increase in medical complications overtime.^{13,19}

TRAUMA-INFORMED CARE (TIC) INITIATIVES

Recent efforts have been made to implement “trauma-informed care” in medical settings, where all services are assessed and potentially modified to include an understanding of how trauma impacts the life of an individual seeking services.²⁰ In addition to recognizing the prevalence of trauma, providers should understand that different types of traumatic events may have differential effects. Childhood sexual abuse, adult sexual assault, and family violence may influence an individual’s ability to form trusting interpersonal relationships.^{21–23} Because car accidents and natural disasters may cause serious physical injury, survivors may experience anxiety and depression, as well as long-term difficulties with pain.²⁴

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Survivors of violence who live in poor and/or violent neighborhoods may have difficulty prioritizing their healthcare needs over the daily stressors of life.²⁵

Overall, healthcare professionals are very likely to treat patients who have experienced a wide range of traumatic events. The purpose of this study was to understand the prevalence and severity of sequelae of traumatic exposure in 2 outpatient dental and medical clinics in an urban academic healthcare setting.

METHODS

Study Design and Procedures

A cross-sectional study design was used to establish the rates of traumatic events experienced by patients in a nonpsychiatric, outpatient sample at a large university-affiliated health center. Self-report surveys were completed by patients seeking outpatient medical ($n = 123$) and dental care ($n = 125$).

This project was approved by the University of (deleted to ensure blind review) Institutional Review Board. Research assistants approached patients who were waiting for scheduled clinic appointments and offered them a \$5.00 grocery store gift card to complete a brief self-report survey about “experiences in the healthcare system.” Informed consent was obtained from all participants. During the process, participants were advised that participation was voluntary, participation would not influence their services at the University clinics, and no identifying information would be collected. Approximately 427 patients were approached in the waiting rooms of medical and dental outpatient clinics, prior to patients’ visit with the clinician, over a 6-month frame. Of those invited, 248 patients (58%) completed the survey. The most common reason for refusal was a lack of sufficient time to complete the survey prior to the scheduled appointment.

Study Setting

The University of (deleted to ensure blind review) Health Sciences campus serves patients who are largely uninsured or underinsured. Two hundred and forty-eight participants (69% female) completed the survey. Women were overrepresented in our sample. Overall, 65% of family medicine clinic patients and 56% of dental clinic patients are female. The average age of survey participants was 38.03 years (standard deviation [SD] = 15.40 years). Representing the diverse nature of the clinics, 28% of participants identified as Black, 27% as White, 24% as Hispanic, 16% as Asian or Pacific Islander, 3% as Multiracial, and 2% as “other.”

MEASURES

Demographic Items

Participants indicated their age (in years), sex, race/ethnicity, household income, highest level of education, and military status. Additionally, a single item measured medical service use (ie, “Before today, when was the last time you visited your doctor [not an ER visit]?”) on a 4-point scale (1 = in the last month, 2 = in the last 6 months, 3 = in the last year, 4 = more than a year ago).

Traumatic Life Events Questionnaire (TLEQ)

The TLEQ measures lifetime prevalence of trauma exposure.²⁶ Participants indicated whether they had ever experienced any of 21 potentially traumatic events. These include natural disasters (flood, hurricane, and earthquake), motor

vehicle accidents (which required medical attention or resulted in injury), other accidents (eg, plane crash, home fire, and chemical leak), living or working in a war zone, sudden/unexpected death of a loved one, life threatening or permanently disabling accident or illness of loved one, life-threatening illness, robbery with a weapon, physical assault by a stranger, witnessing a stranger attack someone else, being threatened with physical harm (by strangers, relatives, and partners), physical punishment that resulted in injury as a child, witnessing family violence as a child, experiencing intimate partner violence, sexual abuse before the age of 13, sexual abuse between the ages of 13 and 18, sexual abuse after the age of 18, stalking, miscarriage, and abortion. The TLEQ contains follow-up questions regarding each type of traumatic event. For example, the sexual abuse questions ask participants to indicate their relationship with the perpetrator (eg, stranger, friend, relative, intimate partner, etc.) and indicate if they were physically injured.

The TLEQ has shown strong test-retest reliability and good content validity across various trauma populations.²⁶ The specific traumatic events were divided into 5 dichotomous categories scored as 0 = never experienced and 1 = ever experienced that trauma subtype: interpersonal trauma (IPT), non-interpersonal trauma (Non-IPT), combat, community violence, and illness-related. IPT included traumas perpetrated by individuals with which the victim was acquainted (eg, family member, friend), such as sexual assault, childhood abuse, intimate partner violence, and stalking. Non-IPT involved natural disasters and serious accidents. Combat exposure referred to combat experiences that may have occurred in an active war zone or during warfare. Community violence exposure was characterized as exposure to a violent crime (with or without weapons use) that was perpetrated by a person outside of one’s immediate family.²⁷ This included murder of loved one, robbery, physical and sexual assault by a stranger, and childhood abuse by a stranger. The illness-related traumas were the sudden death of a loved one, facing a life-threatening illness of self or a loved one, miscarriage, or abortion.

Brief Symptom Inventory (BSI)

The BSI is a 53-item questionnaire that assesses current psychological health across 9 symptom dimensions.²⁸ The BSI has demonstrated good test-retest reliability, high internal consistency, and good convergent validity with related measures.^{29,30} Only the anxiety dimension was utilized in this study. Participants rated the severity of their anxiety symptoms over the last week on a scale from 0 (not at all) to 3 (extremely). A mean anxiety score was computed by summing the ratings and dividing by the number of items (Cronbach $\alpha = .91$).

Center for Epidemiologic Studies Depression Scale (CESD)

The CESD is a 20-item measure of current depressive symptoms.³¹ Participants rated the severity of symptoms over the last week from 1 (rarely or never [< 1 day]) to 4 (most or all the time [$5-7$ days]). The ratings were summed and divided by the number of items to compute a mean depression score, with higher overall scores reflect greater severity (Cronbach $\alpha = .90$). The CESD has shown good test-retest reliability, adequate internal consistency, and moderate construct validity.³¹

Short Form-12 (SF-12) Health Survey

The SF-12 is a brief, self-report measure of overall physical and mental functioning.³² It has been shown to be

reliable and valid in diverse clinical and community populations.³³ The present study used 3 items from the SF-12 to represent physical health impairments. The first item asked about the status of general health (1 = excellent, 2 = very good, 3 = good, 4 = fair, and 5 = poor). The second item assessed the extent to which pain interfered with work over the last 4 weeks on a 5-point scale (1 = not at all to 5 = extremely). The third item measured the extent to which physical and emotional problems interfered with social functioning on a 6-point scale (1 = all of the time to 6 = none of the time).

Study Hypotheses

Compared to those without a trauma history, individuals with a trauma history would report lower levels of overall health.

Compared to participants without a trauma history, we expected trauma survivors to report a greater level of pain interference. Additionally, we expected Non-IPT survivors to report a greater level of pain interference compared to other types of trauma survivors. We expected trauma survivors to report that physical/emotional health issues were interfering with their social activities. Compared to Non-IPT survivors, we expected all the other types of trauma survivors to report a greater level of physical/emotional health issues that interfered with social activities.

We hypothesized that compared to individuals with no trauma history, trauma survivors would have greater time since last nonemergency medical visit. We predicted that compared to other types of traumas, IPT would be most closely associated with longer time since previous medical visit. We also predicted that anxiety and depression would moderate the relationship between trauma history and time since last medical visit.

RESULTS

Data were collected from 248 participants (69% female). The average age of participants was 38.03 years (SD = 15.40). Twenty seven percent self-identified as Black, 27% as White, 24% as Hispanic, 16% as Asian or Pacific Islander, 3% as Multiracial, and 3% as "other." In terms of annual household income, 12% earned less than 10,000 dollars, 22% earned between 10,001 and 20,000 dollars, 26% earned between 21,001 and 40,000 dollars, 23% earned between 40,001 and 60,000 dollars, and 17% earned over 60,000 dollars. The sample varied in terms of highest level of education completed. Twenty-three percent were high school graduates, 35% had completed some college, 26% had a college degree, and 16% had completed some graduate coursework. In regard to primary health insurance, 50% reported having private health insurance, 18% had Medicare, and 21% had Medicaid.

All means and SDs were found to be plausible. Data were inspected for any out-of-range values or univariate outliers using IBM SPSS Statistics 21. No out-of-range values or outliers were found. Further, less than 5% of data were missing; therefore, analyses proceeded as planned using listwise deletion. Table 1 shows the bivariate correlations among potential covariates and primary variables of interest. Covariates that were significantly related to primary variables of interest were controlled for in subsequent analyses (described below). Table 2 shows the prevalence of traumatic events in the total sample and is separated by sex. Natural disasters, car accidents, sudden death of a loved one, witnessing family violence, and experiencing interpersonal violence and sexual abuse were common in

our sample. Only 6% of the sample did not report experiencing any traumatic events.

Hypothesis 1

It was hypothesized that a history of trauma exposure (compared to no history of trauma exposure) would be predictive of lower reported perceptions of overall health. We categorized traumatic event exposure into dichotomous categories (0 = no exposure, 1 = exposure) and then used these dichotomous variables to assess whether trauma exposure predicts physical health of the participants. Perceptions of overall health were regressed onto history of trauma exposure. Income and race/ethnicity were included as covariates because they were negatively correlated with perceptions of overall health (see Table 1). Results supported this hypothesis, suggesting that history of trauma exposure was associated with a decrease in perceptions of overall health ($\beta = 0.14$, $P < 0.05$), holding ethnicity and income constant.

Hypothesis 2

Pain interference was regressed onto history of trauma exposure to test whether a history of trauma exposure was associated with greater pain interference at work. Age was included as a covariate because it was positively associated with pain interference at work (see Table 1). As predicted, history of trauma exposure was related to an increase in pain interference at work ($\beta = 0.14$, $P < 0.05$), holding age constant. Furthermore, it was hypothesized that after controlling for other trauma types, participants exposed to Non-IPT would report greater levels of pain interference at work. Endorsement of Non-IPT exposure ($\beta = 0.17$, $P < 0.01$) was related to an increase in pain interference at work after controlling for age and other trauma types. Additionally, endorsement of IPT exposure was also a predictor of increase in pain interference at work ($\beta = 0.16$, $P < 0.05$).

It was hypothesized that history of trauma exposure would be indicative of physical/emotional interference with social activities. Therefore, physical/emotional interference with social activities was regressed onto history of trauma exposure. Sex was included as a covariate because it was negatively associated with physical/emotional interference with social activities ($r = -0.16$, $P < 0.05$). History of trauma exposure trended toward significance as a predictor of physical/emotional interference with social activities ($\beta = -0.12$, $P = 0.07$) after controlling for sex. However, this association was in the opposite direction of what was predicted (ie, history of trauma exposure predicted less physical/emotional interference with social activities). It was further hypothesized that after controlling for Non-IPT exposure, participants who endorsed any other trauma type would report greater levels of physical/emotional interference with social activities. Contrary to expectation, only a history of IPT exposure was significantly associated with physical/emotional interference in social activities ($\beta = -0.17$, $P < 0.05$), and this association was in an unexpected direction. That is, a history of IPT exposure predicted less physical/emotional interference with social activities.

Hypothesis 3

Participants with a history of trauma exposure (compared to those without a history of trauma exposure) were predicted to report longer time elapsed since their last medical visit. Sex and age were both negatively associated with time elapsed since last medical visit ($r = -0.19$, $P < 0.001$; $r = -0.20$, $P < 0.001$,

TABLE 1. Correlations, Means, Standard Deviations, and Range Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	—												
2. Sex	0.05	—											
3. Race	0.03	0.03	—										
4. Income	-0.05	-0.20*	0.04	—									
5. Education	-0.11	-0.05	0.05	0.28*	—								
6. Military Status	-0.12	-0.14	0.13	0.18†	0.00	—							
7. Trauma History	-0.04	-0.10	0.00	0.04	-0.05	0.02	—						
8. IPT	-0.15†	0.01	-0.01	0.10	-0.01	-0.07	0.35*	—					
9. Non-IPT	-0.08	-0.02	-0.07	0.13†	0.03	-0.09	0.32*	0.23*	—				
10. CVE	-0.08	-0.03	-0.20*	0.17*	-0.04	0.01	0.33*	0.39*	0.31*	—			
11. Combat	-0.06	-0.13†	-0.06	-0.01	0.11	0.02	0.05	0.06	0.12	0.07	—		
12. Illness-Related	-0.11	0.03	0.09	0.00	0.02	0.01	0.62*	0.25*	0.16†	0.25*	0.09	—	
13. Mean Anxiety	-0.17†	-0.05	0.01	-0.02	0.01	0.02	0.15†	0.30*	0.10	0.19*	0.05	0.12	—
14. Mean Depression	-0.08	0.03	-0.03	-0.14†	-0.10	0.16	0.08	0.31*	0.05	0.22*	0.06	0.12	0.67*
15. Medical Use	-0.20*	-0.19*	0.02	0.00	-0.05	-0.03	-0.15†	0.02	-0.03	0.04	-0.07	-0.11	0.01
16. General Health	0.08	0.12	-0.14†	-0.16*	-0.09	-0.12	0.16†	0.16†	0.10	0.15†	0.17*	0.16†	0.33*
17. Pain Interference	0.25*	0.11	0.01	-0.09	-0.04	-0.10	0.14†	0.15†	0.20*	0.04	0.12	0.15†	0.21*
18. Social Impairment	0.05	-0.16†	0.04	0.12	0.02	-0.03	-0.10	-0.20*	-0.11	-0.11	-0.07	-0.10	-0.41*
M	38.03	0.96	0.44	3.20	3.24	0.10	0.92	0.60	0.56	0.56	0.03	0.82	0.53
SD	15.40	0.46	0.27	1.42	1.09	0.30	0.27	0.49	0.50	0.50	0.18	0.38	0.72
Minimum	18	0	1	1	0	0	0	0	0	0	0	0	0
Maximum	85	1	2	6	5	1	1	1	1	1	1	1	4

	14	15	16	17	18
1. Age					
2. Sex					
3. Race					
4. Income					
5. Education					
6. Military Status					
7. Trauma History					
8. IPT					
9. Non-IPT					
10. CVE					
11. Combat					
12. Illness-Related					
13. Mean Anxiety					
14. Mean Depression	—				
15. Medical Use	0.02	—			
16. General Health	0.36*	0.08	—		
17. Pain Interference	0.31*	0.07	0.44*	—	
18. Social Impairment	-0.055*	-0.08	-0.36*	-0.35*	—
M	1.69	2.08	2.50	1.91	4.83
SD	0.52	1.04	0.92	1.14	1.39
Minimum	1	1	1	1	1
Maximum	3.75	4	5	5	6

N = 248. CVE = community violence exposure, IPT = interpersonal trauma, M = mean, Non-IPT = noninterpersonal trauma, SD = standard deviation.

* $P < 0.001$.

† $P < 0.05$.

respectively) and were, therefore, controlled for in the regression analysis. Results demonstrated that a history of trauma exposure was associated with an increase in time elapsed since last medical visit ($\beta = -0.15, P < 0.05$) after controlling for sex and age. Additionally, we predicted that after controlling for all other trauma types, a history of IPT would specifically

predict time elapsed since last medical visit. This hypothesis was not supported ($\beta = 0.04, P = 0.45$).

Depression and anxiety symptoms were hypothesized to moderate the relationship between history of trauma exposure and time elapsed since last medical visit. We tested this hypothesis using 2 separate hierarchical multiple regressions. Consistent with Aiken and West,³⁴ the moderators (ie, depression symptoms,

TABLE 2. Distribution of Trauma by Trauma Type and Sex

Trauma Type	Total N (%)	Women N (%)	Men N (%)
Natural Disaster	86 (35%)	58 (34%)	28 (38%)
Motor Vehicle Accident	66 (27%)	52 (31%)	14 (19%)
Other Serious Accident	35 (14%)	21 (12%)	14 (19%)
Combat	2 (.01%)	– (–%)	2 (3%)
Sudden Death of Loved One	152 (64%)	105 (63%)	47 (65%)
Disabling Illness (Loved One)	98 (41%)	71 (43%)	27 (36%)
Disabling Illness (Self)	30 (12%)	24 (14%)	6 (8%)
Robbery	54 (22%)	38 (22%)	16 (22%)
Physical Assault	34 (14%)	21 (12%)	13 (18%)
Witnessed Physical Assault	49 (20%)	31 (18%)	18 (24%)
Threatened	41 (17%)	29 (17%)	12 (16%)
CPA	50 (21%)	33 (20%)	17 (23%)
Witnessed Family Violence	85 (35%)	59 (35%)	26 (35%)
Intimate Partner Violence	68 (28%)	54 (32%)	14 (19%)
CSA*	47 (20%)	40 (24%)	7 (10%)
AdSA	23 (10%)	21 (13%)	2 (3%)
ASA	21 (9%)	18 (11%)	3 (4%)
Stalked	50 (18%)	44 (26%)	6 (8%)
Miscarriage	43 (18%)	35 (21%)	8 (11%)
Abortion	42 (18%)	36 (21%)	6 (8%)
No Trauma	14 (6%)	14 (6%)	14 (6%)

AdSA = adolescent sexual assault (between ages 13 and 18), ASA = adult sexual assault (after age 18), CPA = Childhood physical assault, CSA = childhood sexual abuse.

*Includes abuse by perpetrators close in age to and more than 5 years older than the victim.

anxiety symptoms) were mean centered. In the first hierarchical multiple regression, depression was examined as a moderator between history of trauma exposure and time elapsed since last medical visit. Covariates (ie, sex, age) were entered in the first step of the model as predictor variables and time elapsed since last medical visit served as the outcome variable. History of trauma exposure and symptoms of depression were entered as predictor variables in the second step of the model. In the third step of the model, the interaction term (ie, the product of the mean-centered depression symptoms variable and history of trauma exposure variable) was entered as a predictor variable. Results from this moderation analysis are presented in Table 3. Sex and age were both significant predictors of time elapsed since last medical visit. History of trauma exposure was also a significant predictor of time elapsed since last medical visit ($\beta = -0.15, P < 0.05$). Neither depression symptoms nor the interaction term emerged as significant predictors of time elapsed since last medical visit.

The second hierarchical multiple regression model tested whether anxiety symptoms moderated the relationship between history of trauma exposure and time elapsed since last medical visit. Covariates (ie, sex, age) were entered in the first step of the model as predictor variables and time elapsed since last medical visit served as the outcome variable. History of trauma exposure and symptoms of anxiety (mean centered) was entered as predictor variables in the second step of the model. In the third step of the model, the interaction term (ie, the product of the mean centered anxiety symptoms variable and history of trauma exposure variable) was entered as a predictor variable. Results

TABLE 3. Hierarchical Multiple Regression with Depression Symptoms as Moderator and Time Elapsed Since Last Medical Visit as Outcome Variable

Predictor	B	β	ΔR^2
Step 1			0.07*
Sex	-0.41	-0.18 [†]	
Age	-0.01	-0.17 [†]	
Step 2			0.03 [†]
Sex	-0.44	-0.20 [†]	
Age	-0.01	-0.17 [†]	
Trauma History	-0.64	-0.16 [†]	
Depression	0.17	0.08	
Step 3			0.000
Sex	-0.44	-0.20 [†]	
Age	-0.01	-0.17 [†]	
Trauma History	-0.64	-0.16	
Depression	0.17	0.08	
Trauma History X Depression	-0.002	-0.001	

N = 216. Sex was coded as male participant (=1) and female participant (=2).

* $P < 0.001$.

[†] $P < 0.05$.

from this moderation analysis are presented in Table 4. Similar to the first moderation analysis, sex, age, and history of trauma exposure were significant predictors of time elapsed since last medical visit. Neither anxiety symptoms nor the interaction term were significant predictors of time elapsed since last medical visit.

DISCUSSION

Traumatic experiences were prevalent in this ethnically diverse sample of patients seeking medical and dental treatment

TABLE 4. Hierarchical Multiple Regression with Anxiety Symptoms as Moderator and Time Elapsed Since Last Medical Visit as Outcome Variable

Predictor	B	β	ΔR^2
Step 1			0.07*
Sex	-0.40	-0.18 [†]	
Age	-0.01	-0.17 [†]	
Step 2			0.02
Sex	-0.43	-0.19 [†]	
Age	-0.01	-0.17 [†]	
Trauma History	-0.60	-0.15 [†]	
Anxiety	0.06	0.04	
Step 3			0.001
Sex	-0.43	-0.19 [†]	
Age	-0.01	-0.17 [†]	
Trauma History	-0.50	-0.13	
Anxiety	0.59	0.39	
Trauma History X Anxiety	-0.53	-0.35	

N = 214. Sex was coded as male participant (=1) and female participant (=2).

* $P < 0.001$.

[†] $P < 0.05$.

at a large academic medical center. Overall, trauma history was associated with poorer self-reported health. Global self-report ratings of overall health are highly predictive of mortality,³⁵ underscoring the relationship between traumatic events and physical health symptoms, and the need for interventions to help traumatized individuals better manage stress. Ethnic minority status and lower household income were associated with poorer self-reported health, and had to be controlled for in our analyses. These groups of patients may have limited access to healthcare resources, which might exacerbate untreated trauma symptoms.

Both IPT and Non-IPT were associated with self-reported pain interference at work. Although exposure to car accidents and natural disasters have obvious implications for bodily pain, the link between IPT and work-related pain interference may be less obvious to medical practitioners. Because IPT still involves bodily violation, it may be linked to experiences of pain in specific parts of the body.³⁶ Overtime, experiences of pain may be triggered more generally, based on the posttraumatic neurophysiological changes.³⁷ Another interesting finding was that a history of trauma exposure, particularly a history of IPT, appeared to increase self-reported social functioning. There is growing evidence that many people display psychological resilience after trauma.⁶ Factors that encourage resilience include hardiness and a strong family and social support network. Perhaps in our nonpsychiatric sample, many trauma survivors attempted to engage in positive, resilient ways of coping, including seeking social support. Future studies should explore this link.

As we expected, traumatic events negatively influenced time since last nonemergency medical visit. Thus, even though survivors reported poorer overall health, they do not go to the doctor as frequently. In our study, depression and anxiety did not mediate the relationship between trauma history and medical care. It may be that many trauma survivors feel that their life is generally “unpredictable” and “uncontrollable” and may distance themselves from the negative affect that accompanies an unpredictable environment. These individuals may try to avoid feelings of depression and anxiety, but the physiological consequence of trauma may still result in poorer self-reported health.³⁸ Future research should focus on measuring emotional avoidance and its potential role in physical health symptoms. It may also be that trauma history has a more direct relationship with lack of medical care. For example, it is possible that trauma survivors are experiencing greater current life stressors (eg, financial and housing difficulties), which may influence their engagement in medical care. Future work should also consider current life circumstances to more fully understand this relationship. From a clinical perspective, healthcare providers may rely on depression and anxiety as “red flags” to deduce if a patient may have a trauma history. Providers may also rely on self-reported depression and anxiety as the sole indicators that a patient may benefit from mental health referrals. The results of our study suggest that patients who do not present with anxiety or depression may still be experiencing trauma-related physical impairments. Consistent with the principles of TIC, clinicians should have an awareness of the prevalence of trauma and the varied ways patients present in medical care. For example, some patients may present as overtly emotionally distressed, and others may not. The results of this study suggest that routine trauma screening may be appropriate in primary care medical and dental settings, particularly when providers are aware of resources and referrals

available to survivors and they have a trusting, long-term relationship with the patient.²⁰

This study had several limitations. The data were self-reported, so there may have been a bias toward underreporting trauma or other symptoms. However, levels of self-reported traumatic events appear to be comparable to other community-based samples.³⁹ In addition, the data are cross-sectional, so causality cannot be determined. We do not know if traumatic events cause a lack of routine medical care, or if a lack of routine medical care is associated with chaotic or stressful life circumstances (eg, poverty, housing instability) that may increase vulnerability to future victimization. Finally, although our sample was ethnically representative of the patients we serve, women were more likely to complete our survey. To protect patient confidentiality, we did not collect identifying information about patients who refused to take the survey (eg, age, sex). Although these limitations constrain the external validity of our findings, future studies can build on the foundation provided by the present study.

CONCLUSIONS

This study adds to existing knowledge about the prevalence of prior traumatic experiences and associated factors among patients seen in outpatient primary care medical and dental settings. The prior trauma experienced by these patients may not always be evident due to the lack of presenting signs and symptoms. Future work should focus on large, epidemiological surveys of men and women, surveying them about trauma history, current life stressors, mental health status, and self-reported health and healthcare usage. Further studies can include chart reviews to objectively assess healthcare utilization. Mixed methods and qualitative research should include focus groups and in-depth interviews with this population to explore how various types of traumatic events may be related to self-care, stress, ways of coping, and health. Future training and research in the area of TIC is essential to guide the development of effective interventions to provide high quality, patient-centered care to patients with prior histories of traumatic life experiences.

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