

Exposure to Violence and PTSD Symptoms Among Somali Women

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Posttraumatic stress disorder (PTSD) symptoms, exposure to traumatic stressors, and health care utilization were examined in 84 women attending a primary health care clinic in Mogadishu, Somalia. The Somalia-Posttraumatic Diagnostic Scale was used in this active warzone to measure symptoms. Nearly all women reported high levels of confrontations with violence; half described being exposed to a potentially traumatizing event. Nearly one third had significant PTSD symptoms. Compared to those who did not, women who reported exposure to a traumatic stressor reported more confrontations with violence (7.1 vs. 3.3; $p < .001$), health complaints (3.8 vs. 2.9; $p = .03$), and nearly 3 times as much ($p = .03$) health service utilization. A potentially traumatizing event was found to be a simplified proxy for assessing mental health distress in women attending a primary health care facility in highly insecure, unpredictable, resource-limited settings.

Somalia's capital, Mogadishu, has experienced fierce fighting between rival factions since the collapse of the central government in 1991. Although peace negotiations in 2004 led to the creation of the Transitional Federal Government, the Somali Council of Islamic Courts rejected this government and seized the capital in June 2006. Subsequent military intervention in Mogadishu turned the city into a battleground, resulting in thousands of deaths (Human Rights Watch, 2007). By the end of November 2007, approximately 600,000 civilians had reportedly fled the capital (United Nations High Commissioner for Refugees [UNHCR],

2007). At the time of this writing, Somalia was the country generating the highest number of refugees in the world, after Afghanistan and Iraq (UNHCR Somalia, 2010). International concern is growing for the psychosocial consequences of conflict. In 2005, the World Health Organization (WHO) called for "support for the implementation of programs to repair the psychological damage of conflict and natural disasters" (WHO, 2005).

A frequently used indicator for mental illness and psychosocial needs among war-affected populations is posttraumatic stress disorder (PTSD; American Psychiatric Association [APA], 2000). The use of a Western psychiatric diagnosis such as PTSD in non-Western settings, however, has been criticized (Kleber, Figley, & Gersons, 1995; Summerfield, 2004). In addition, the definition of a traumatic event in active warzones has been challenged. It is possible that people living in areas of mass violence only perceive and report violent events as potentially traumatic when the events are out of proportion to the context, even if such events would in other settings be classified as traumatizing (Horwitz & Wakefield, 2007; Spitzer, First, & Wakefield, 2007).

Though knowledge of conflict-related psychological distress has grown with an increasing number of studies (Murthy, 2007), most empirical studies use instruments that have limited or untested reliability for the specific setting (van Ommeren, 2003). The difficulty in using screening instruments to identify mental health

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This article is dedicated to our three colleagues who were assassinated while carrying out their duties in Kismayo, Somalia, January 28, 2008.

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needs in highly stressful environments is a challenge that has not yet been effectively addressed (Bolton & Betancourt, 2004). Promising methodologies for developing local validated screening instruments have been described (Bolton, 2001; Bolton & Tang, 2002), but they are generally too time consuming for implementation in acute emergencies such as active warzones.

With heightening attention on the violent conflict in Somalia and its devastating effect on its citizens (MacDonald, 2009), we present here an assessment of the mental health of women attending a primary health care clinic in Mogadishu. The aim of the assessment was primarily to guide medical program planning of the international aid organization, Médecins sans Frontières (MSF). To our knowledge, this is the first study reporting on the mental health vulnerability of women during an acute, active conflict in a non-Western setting using a locally validated assessment tool. Our study also highlights the difficulty in collecting such information in conflict settings and examines alternative (proxy) assessment indicators for measuring mental health vulnerability in highly unpredictable, insecure, resource-poor environments.

METHOD

Participants and Procedures

The study took place in a MSF-supported primary health care clinic located in urban Mogadishu. Female caregivers ($n = 54$) of children visiting the outpatient department (OPD) and pregnant women ($n = 41$) visiting the antenatal care (ANC) clinic were invited to participate in a semistructured interview assessing their exposure to violence and related consequences that could lead to posttraumatic stress symptomatology. In accordance with Somali cultural norms, female interviewers were used for the in-depth interviews regarding the Somali-Posttraumatic Diagnostic Scale (S-PDS). All interviewers had previous interviewing experience; this was augmented by 1-day training specific for this survey. A mental health professional was available for participant support as well as daily debriefing and optional counseling for interviewers.

The ANC and OPD activities were provided in the same compound. It was not possible to assess women outside the health services due to security constraints. Women were invited to participate in the survey after their clinical consultation. The number of women interviewed depended on the time needed to perform the consent procedure and the interview; we did not ask women to wait in the clinic to limit the number of potential casualties in case of attack. The selection of participants depended on the availability of the interviewers. Approximately every 20 minutes a woman who had finished her clinical consultation was approached. If the participant agreed, the interviewer continued with the informed consent procedure. Informed consent was sought verbally. It included the nature and purpose of the assessment, the right to refuse participation, and repeated assurances of confidentiality

and anonymity. Nine women refused after informed consent. To avoid the impression of putting pressure on people, respondents who refused were not asked for their reasons. Participants did not receive any material compensation.

Measures

A questionnaire was used to record demographic information, including age, household composition, and history of displacement. Participants reported their history of health problems using a fixed list of common health complaints defined by a previous survey conducted in Somalia (Odenwald et al., 2007a, 2007b). Information regarding access to health services included number of health-related clinical visits and obstacles to accessing health service. The recall period for all health-related questions was limited to the 2 months prior to the interview (corresponding to the end of Ramadan).

Exposure to violence was assessed using a list of violent events previously used in Somalia (Cronbach's $\alpha = .86$; Odenwald et al., 2007a) with additional questions related to witnessing and/or experiencing torture, conflict, life-threatening events, or illnesses due to conflict-related factors. Somali staff from the MSF program assisted in adapting and defining relevant terms, including abortion, torture, and mistreatment.

The S-PDS was used for assessing PTSD symptomatology among female caregivers. It is a short psychodiagnostic assessment instrument administered by trained local interviewers in their native language (Odenwald et al., 2007a). It was derived from the widely used Posttraumatic Diagnostic Scale (PDS; Foa, 1995) and has been validated for the Somali language, culture, and Islamic religion in a study among ex-combatants (Odenwald et al., 2007a). Three criteria were required to have a positive result on the S-PDS: (a) identification and description of a potentially traumatizing event (PTE), defined as the violence-related event that was most stressful or upsetting happening to the interviewee or someone close; (b) PTSD symptom frequency; and (c) PTE impact on functioning. All three criteria must be fulfilled for a positive evaluation of the S-PDS to be made. The outcome of the S-PDS is associated with clinically elevated PTSD symptoms (e.g., Kleber, 1997); however, such a diagnosis requires confirmation through clinical assessment.

Criterion 1 of the S-PDS, the potentially traumatizing event, corresponds to Criterion A of the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; APA, 2000) for PTSD. To fulfill this criterion, the PTE must have happened at least 2 months prior to the interview and recalled as resulting in at least one of the following trauma-related characteristics: physical injury; feeling of one's own or another life being endangered; and feelings of fear, horror, or helplessness at the moment of occurrence. Criterion 2 of the S-PDS assesses the presence or absence of 17 symptoms of PTSD (criteria B–D of the *DSM-IV-TR*) in reference to the chosen PTE. The criterion is fulfilled

if at least one reexperiencing, three avoidance, and two arousal symptoms are reported. Self-reported frequency in the past month of each symptom is based on a 4-point scale: 1 = *Not at all or only 1 time*, 2 = *2-4 Times*, 3 = *5-16 Times*, 4 = *Almost always*. Criterion 3 of the S-PDS focuses on impairment in functioning, the F criterion of PTSD, and assesses general satisfaction in life, overall functioning, and specific functional impairment in major life areas such as work, ability to relax or study, learning ability, and relationships with family and friends. At least one functional impairment was necessary to fulfill Criterion 3.

Analysis

Data were analyzed using Epi Info 3.2 (Centers for Disease Control and Prevention, 2004) and STATA 8.0 (StataCorp LP, 2003). If data were missing the number of available data was used as the denominator. Two questionnaires were incomplete and removed from the sample analysis. Associations between dichotomous variables were analyzed with a χ^2 test and Fisher's exact test. A difference between the means of a variable for subgroups was analyzed using a *t* test; if the Bartlett's test for inequality of population variances was significant, the Kruskal-Wallis test for two groups was used.

RESULTS

In-depth interviews of 84 women including 45 OPD and 39 ANC women were completed from December 10–13, 2007. Nine women did not consent to participate after study information was provided, and two questionnaires were incomplete due to lack of time. The median age was 27 years ($SD = 7.2$; range = 17–60 years) and the majority (76, 90.5%) of the women were married. The average reported household size was 9.0. Most respondents (66, 78.6%) had no formal education; 12 (14.3%) received a primary, 4 (4.8%) a secondary, and 2 (2.4%) a high school level education. Only 12 respondents (14.3%) reported never having been displaced since the start of the conflict in 1991; half (42, 50.0%) had been displaced three or more times. Participants recruited from the OPD clinic came from larger households compared to participants recruited from the ANC clinic (11.9 vs. 5.8; $p < .001$). No other differences in baseline characteristics of participants from each clinic were found.

Among the 84, 77 women reported 289 health complaints (average = 3.4, $SD = 1.9$) during the 2 months prior to the survey. The most frequently reported health complaints included headache (68, 23.5%), respiratory complaints (52, 18.0%), cough (38, 13.1%), generalized pain (37, 12.8%), fever (31, 10.7%), and stomach pain (30, 10.3%). Half of the participants (42, 50.0%) mentioned at least one additional complaint, including malaria, kidney pain, and palpitations. During the 2 months prior to the survey, 51% (42, $n = 83$) had visited a clinic at least once for their own health; of these, 21.6% (18) visited a clinic two or more

times. Of the 68 women who wanted to visit a clinic, 38.2% (26) were unable to do so because of problems of access, mostly related to lack of financial resources (24, 92.3%).

Nearly all respondents (81, 96.4%) were confronted with at least one violent event during the 2 months prior to the survey ($M = 5.5$ events, range = 0–24, $SD = 4.3$). Events most frequently reported included witnessing severely injured people, being caught in a combat zone, and being in close proximity to shelling or mortar attacks (Table 1). The majority of respondents had heard of incidents of sexual violence; four women reported being raped.

More than half (48, 57.1%) of the respondents reported a PTE, all directly related to war-related events in Mogadishu. Of those reporting a PTE, 45 women reported PTE-related trauma characteristics ($M = 4.1$ characteristics, range = 2–6, $SD = 1.9$). These included 9 (20.0%) women who experienced physical injury, 29 (64.4%) witnessing someone else being killed or injured, and 42 (95.5%) witnessing someone else's life in danger. In addition, 31 (68.9%) felt their own life was in danger, 37 (82.2%) experienced feelings of fear/terror, and 35 (77.8%) reported a sense of helplessness. The majority (38, 79.2%) of those reporting a PTE fulfilled presumed PTSD symptom criteria. Mean symptom severity score was 21.8 (range = 1–48, $SD = 11.8$) of a maximum 51. Of the 48 persons reporting a PTE, 41 (85.4%) stated that their basic functioning (Criterion 3 of the S-PDS) had been affected, with a mean of 4.1 complaints (range = 0–8, $SD = 2.7$). Thirty (62.5%) people reported that PTE-related symptoms impinged on their "general satisfaction with life," and 31 (64.6%) said it had hindered their "overall function in all life areas." Common complaints included difficulty relaxing (28, 58.3%), compromised relationships with friends (25, 52.1%) or family (26, 54.2%), and difficulty learning/acquiring skills (25, 53.2%). More than one quarter reported that their work functioning was affected (14, 29.2%). Of those reporting a PTE, half (25, 52.1%) fulfilled all three S-PDS criteria for PTSD symptomatology, representing 29.7% (95% CI [19.8, 39.7]) of the 84 women interviewed.

Those reporting a PTE compared to those not reporting a PTE had significantly higher exposure to violence, mean number of health complaints, and health visits to the clinic. Comparing those qualifying for all S-PDS criteria (presumed PTSD) with those not qualifying, we found no significant differences on the same variables (Table 2).

DISCUSSION

To our knowledge this is the first published study on the prevalence of PTSD symptomatology for women consulting health services in a highly insecure, unpredictable, resource-limited context. As such, we can only compare our findings with results from related populations. The proportion of participants suffering from PTSD-related symptoms (30%) is in the upper range compared to findings among populations affected by war and migration, with previous studies reporting PTSD prevalence rates ranging from

Table 1. Frequency of Exposure to Traumatic Stressors During Previous 2 Months

Event	Freq.	%
Did you witness:		
Abduction/forced recruitment of someone close	10	11.9
Harassment by any armed personnel	4	4.8
Any mutilated people or dead bodies	17	20.2
Anyone committing suicide	2	2.4
Anyone severely injured by conflict	46	54.8
The killing or murder of someone	16	19.0
Robbery or looting	30	35.7
Torture	9	10.7
Were you:		
Abducted or recruited by force	1	1.2
Close to a shelling or a bomb attack	35	41.7
Close to crossfire or the shooting of snipers	28	33.3
Very close to burning houses	21	25.0
Harassed by armed persons	7	8.3
Forced to leave an area due to violence	17	20.2
Injured by a weapon	5	6.0
Present in military or combat zone	38	45.2
Imprisoned	5	6.0
The victim of robbery or looting	25	29.8
Did you experience:		
Violent assault by a stranger	7	6.0
Life-threatening illness	8	9.5
Torture	4	4.8
Other life-threatening events	19	22.6
Abortion as a result of violence	15	17.9
Property confiscated	16	19.0
Heard about violent rape in Mogadishu	59	70.2
Did you see this happen?	6	7.1
Did this happen to someone you know?	7	8.3
Did it happen to you?	4	4.8
Knew the perpetrator	1	1.2

Note. $N = 84$. Torture = Torture is the infliction of severe physical or psychological pain as an expression of cruelty; a means of intimidation, deterrent, or punishment; or as a tool for the extraction of information or confessions; Violent assault = includes being physically attacked, shot, stabbed, or held at gunpoint.

14 to 37% (de Jong et al., 2001; Karunakara et al., 2004; Lopes Cardoso et al., 2004; Somasundaram & Sivayokan, 1994). Using the same standardized questionnaire for posttraumatic symptomatology (as assessed by the S-PDS), women in our study more frequently screened positive on the S-PDS compared to a study conducted among ex-combatants in Somaliland (19%; Odenwald

et al., 2007a). This is likely explained by differences in study populations: ex-combatants were predominantly male and men in general tend to report fewer problems associated with PTSD (Tolin & Foa, 2006). In addition, ex-combatants can be expected to be better prepared for extreme violence compared to civilians. Lastly, the difference in context may have influenced the results on the S-PDS; the ex-combatants' demobilization and reintegration program in North Somalia was a relatively peaceful setting compared to the extreme turmoil in Mogadishu. The active conflict in Mogadishu is strongly associated with considerable distress.

Though most women reported confrontations with extreme violence (average of 5.5 events during the 2 months prior to survey), only half reported a potentially traumatizing event (PTE). In Western settings, this may contradict the assumption that most people living in mass violence settings are traumatized. As mentioned earlier, people living in areas of mass violence may only perceive and report events as potentially traumatizing when the events are out of proportion to the context. This would imply that, for time-limited mental health assessments in contexts of mass violence, a reported PTE is more indicative of a person's potential mental traumatization than the number of confrontations with violence.

Furthermore, although a cumulative effect of exposure to war-related events and increasing likelihood of developing anxiety disorders including PTSD has been found in postconflict settings (Karam et al., 2008), this relationship may be different for highly insecure, unpredictable, resource-limited settings, as our data do not confirm this relationship. The strong relationship between posttraumatic symptoms and health have been described elsewhere (Green & Schnurr, 2000; Schnurr & Green, 2003), including among Somali refugees (Bhui et al., 2003) and Somaliland ex-combatants (Odenwald et al., 2007b). We did not find any significant relationships between PTSD symptomatology and physical health variables (health complaints and frequency of health service utilization). We did find, however, that reporting a PTE was associated with a higher number of health complaints and greater health service utilization.

Our results suggest that, while most mental health assessments in conflict settings focus particularly on PTSD and depression (Rodin & van Ommeren, 2009), the focus on reporting a PTE may be a more feasible approach for the assessment of psychosocial and/or mental health needs in areas of acute mass violence. In emergency interventions, the focal point of mental health and psychosocial programs is ideally on the restoration of functioning of individuals and their communities (de Jong, 2005; de Jong, Ford, & Kleber, 1999; Inter-Agency Standing Committee, 2007). Being unable to care for oneself in emergency circumstances jeopardizes survival.

Identification of what constitutes a vulnerable group is a key challenge for providers of care. Those who have experienced violence, increased health complaints, and who more frequently use health care services are among the most vulnerable. A simple

Table 2. Associations With Exposure to Trauma and Clinically Elevated PTSD Symptoms

PTE vs. No PTE reported				
Variable	<i>M</i>		95% CI	
	PTE	No PTE	PTE	No PTE
Age (years)	27.9	26.7	[25.5, 30.3]	[24.7, 28.8]
Exposure to violence	7.1	3.3	[5.7, 8.5]	[2.2, 4.4]***
Number health complaints	3.8	2.9	[3.3, 4.3]	[2.3, 3.6]*
<i>OR</i>				
95% CI				
One or more health visits within previous 2 months	2.7		[1.07, 6.8]*	
Displacement 3 times or more	2.2		[0.89, 5.4]	
Unmarried	5.9		[0.66, 53.9]	
Clinically elevated vs. not clinically elevated PTSD symptoms				
Variable	<i>M</i>		95% CI	
	PTE	No PTE	PTE	No PTE
Age (years)	28.9	26.5	[25.5, 32.3]	[24.9, 28.2]
Exposure to violence	6.4	5.0	[4.9, 8.0]	[3.7, 6.2]
Number health complaints	3.5	3.4	[2.8, 4.1]	[2.9, 3.9]
<i>OR</i>				
95% CI				
One or more health visits within previous 2 months	1.4		[0.55, 3.6]	
Displacement 3 times or more	2.3		[0.86, 5.9]	
Unmarried	4.6		[1.0, 21.3]*	

Note. *N* = 84. PTSD = Posttraumatic stress disorder; PTE = potentially traumatizing event; CI = confidence interval.

* $p < .05$. *** $p < .001$.

indicator such as describing a PTE may be appropriate for assessing this vulnerability in a highly insecure, unpredictable, resource-limited context. Given the strong criticisms raised against the application of Western psychiatric diagnostic labels such as PTSD in non-Western settings (Kleber et al., 1995; Summerfield, 2004), using PTE instead of the PTSD diagnosis would avoid the stigma of a psychiatric diagnosis and the cross-cultural validity constraints of those labels (Bhui & Bhugra, 2007).

Humanitarian agencies working in emergency settings need valid, easily applicable, nonstigmatizing indicators to assess psychosocial needs and plan services accordingly. Such indicators will inform the agencies which mental health and psychosocial activities are effective. After more than a decade of pursuing *DSM*-related indicators, it might be time to apply more pragmatic indicators that focus on vulnerability rather than mental health diagnosis.

Collecting information in a highly insecure, unpredictable, resource-limited setting of mass violence such as Mogadishu is

a trade-off between the desire to maintain the highest scientific standards of validity and reliability and what is actually feasible for the implementing agency and the community. In conflict settings, a balance has to be found between rigorous research standards and sound operational demand.

The assessment focused on the presence of PTSD symptomatology. To qualify for PTE and positive status on the S-PDS the experience had to be older than 2 months. We cannot exclude the distress caused by more recent experiences to influence the distress related to the PTE event. In areas of ongoing violence, it is questionable whether recent events should be excluded as these events can also increase mental health vulnerability. This confirms the difficulty of using a PTSD diagnosis that requires an event older than 2 months in ongoing war circumstances.

The S-PDS questionnaire has been validated in Somaliland (North Somalia) among male ex-combatants, but may have limited generalizability, including to our population (female clinic

attendees). Although our questionnaire has been validated against a gold standard, this does not guarantee validity: to confirm a checklist PTSD diagnosis, a clinical interview should be used, but this was not possible due to the highly insecure environment. Further, even clinical interviews have limitations in terms of cultural validity (van Ommeren, Sharma, Makaju, Thapa, & de Jong, 2000; Weiss, Raguram, & Channabasavanna, 1995) and need local validation. Another potential limitation lies in the fact that our research used a retrospective questionnaire that carries an inherent risk of recall bias. Every effort, however, was made to choose a readily identifiable marker for the recall period (the end of Ramadan). Moreover, other studies have demonstrated that refugees remain rather constant in their reporting on key traumatic events over time (Herlihy, Scragg, & Turner, 2002). A further limitation is that the extremely insecure and violent circumstances limited the sampling period (in this case only a few days recruitment was possible), sampling approach (nonrandom sampling), and target population (only women seeking health care in a primary health setting). These issues limit the generalization of our findings. Finally, nine women refused to participate, and this may contribute to selection bias, but as reasons for refusal were not asked (to avoid putting pressure on individuals), this is not possible to assess.

CONCLUSIONS

One third of the women who visited a primary health care unit in Mogadishu (Somalia) were diagnosed with PTSD symptomatology. In contrast to those having this symptomatology, reporting a potentially traumatizing event was found to be more strongly associated with events such as confrontations with violence, health complaints, and frequency of health service usage.

Our data suggest that simplified indicators such as reporting a PTE may suffice for time-limited assessments and psychosocial or mental health primary health care service planning in highly unpredictable, insecure, and resource-poor situations of mass violence.

Many participants who were confronted with repeated war-related incidents stated that they had not experienced a potentially traumatizing event. This suggests that what individuals appraise as potentially traumatizing depends on their perception of what is traumatizing in extreme contexts. More generally, it indicates that people label what is traumatic in relation to their environment.

Future mental health research and time-limited assessments in conflict areas should focus on identifying indicators that inform on locally appropriate vulnerability, rather than relying on PTSD symptomatology or other mental health diagnostic criteria alone. This will facilitate assessments of mental health vulnerability in acute emergencies and improve the rapidity and appropriateness of assistance provision to populations in need.

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