Archives of Women's Mental Health (2018) 21:517–524
https://doi.org/10.1007/s00737-018-0824-3

ORIGINAL ARTICLE

PTSD of rape after IS ("Islamic State") captivity

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Received: 21 October 2017 / Accepted: 27 February 2018 / Published online: 10 March 2018

Abstract

Research into the psychological consequences of rape on women in war and warlike situations is limited. The aims of this study were (a) to describe the prevalence and the nature of PTSD symptoms among Yazidi women reporting rape during IS captivity, (b) to describe comorbidity of other psychological disorders, and (c) to examine the risk factors associated with posttraumatic stress disorder.

The study included 296 Yazidi women survivors of rape and has been conducted in Germany since January 2016 as part of a special-quota project in the German region of Baden-Wuerttemberg, designed to support the women and children who have escaped after being held hostage by IS.

The survivors were recruited into a retrospective, cross-sectional study. Interviews in Germany were done through trained personnel to evaluate the mental health status of raped women.

All the investigated women had been raped many times during IS captivity. About 82% of the women were also physically tortured. Of the sample, 67% suffered from somatoform disorder, 53% suffered from depression, 39% from anxiety, and 28% from dissociation. The prevalence of PTSD in those with rape events of more than 20 times was 57% (95% CI = 35.1–65.9%), less than 20 times was 41% (95%, CI = 28.7–4.8% and less than 10 times 39% [95% CI = 28.2–41.8%], respectively.

The IS captivity and wartime rapes had deep immediate and long-term consequences on the mental health of women survivors. The high prevalence of PTSD emphasizes the need for culturally sensitive diagnostic and therapeutic services to address the intermediate and long-term consequences of wartime rape.

Keywords Yazidi · Women · Rape · PTSD · Mental health · Terrorism

Introduction

The Yazidis are a Kurdish minority group, distinguished in terms of religion rather than through ethnic or linguistic differences. The majority of Kurds were forced to convert to Islam (Kreyenbroek 2009); however, the Yazidis, who resisted this, regard themselves as followers of the oldest religion in the world. Yazidis live predominantly in present-day northern Iraq, with their total population worldwide being estimated at 800,000 to 1,000,000 (Guest 1998).

Since the attack by the so-called "Islamic State" (IS) at the beginning of August 2014, more than 7000 Yazidis have been killed and thousands of families have been held hostage in their villages and murdered if they refused conversion to Islam, and over 5800 young girls have been abducted, raped, sold in Arab markets, enslaved, or killed (United Nations Human Rights Office of the High Comissioner 2016).

There have been few epidemiological studies published on the psychological disorders of the Yazidi genocide. Ceri et al. (2016) interviewed children and adolescents approximately 2 years after the genocide in a refugee camp in Turkey and concluded that 43% of the survivors showed moderate to severe posttraumatic stress reactions (Ceri et al. 2016). Posttraumatic stress reactions of children and young adolescents were associated with parental loss, exposure to violence, and, most importantly, the feeling that their life was perpetually in danger. More women than men suffered from PTSD, and more women than men with PTSD or depression reported

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having experienced rape or witnessed the death of a spouse or child (Tekin et al. 2016).

Studies carried out into the psychological effects of rape in women who survived war situations have shown that it results in a range of psychological problems, such as posttraumatic stress disorder (Bruce et al. 2001; Clum et al. 2000), anxiety (Coid et al. 2003), depression (Clum et al. 2000), dissociative disorders and sexual dysfunctions (Darves-Bornoz et al. 1997), and alcohol or substance abuse, and attempted suicide (Bruce et al. 2001).

In terms of demographic variables such as gender, sexual violation is a commonly reported risk factor in the development of mental disorders, and females are shown to be more vulnerable (Kilpatrick et al. 2003). Our own research indicates, however, that this finding is mainly a consequence of gender bias with regard to the type of traumatic events experienced by females (e.g., rape and other sexual assaults) (Kizilhan 2017).

The IS attack and the war since 2014 in Iraq and Syria as well as wars in former Yugoslavia and Rwanda were characterized by systematic attempts to destroy a population and mass rapes of women (Amowitz et al. 2004; Ahmand et al. 2000). As stated in the Geneva Convention of 1949 and the 1977 Additional Protocols, rape and other forms of sexual violence against women in time of war are considered to be crimes against humanity. In spite of this, they are often unreported and therefore go unrecognized.

This study was conducted approximately 3 years after the IS captivity of the women with the goals of investigating (a) to describe the prevalence and the nature of PTSD symptoms among Yazidi women reporting rape during IS captivity, (b) to describe comorbidity of other psychological disorders, and (c) to examine the risk factors associated with posttraumatic stress disorder.

Method

Participants

Participants were Yazidi women rape victims from the area of Sinjar in Northern Iraq who, between August 2014 and January 2016, were held in captivity for at least 3 months by the so-called "Islamic State" (IS) in Iraq and Syria. The women were forced to live in the IS area between Iraq and Syria in houses and military IS camps and were guarded so that they could not flee.

The sample comprised women between the ages of 18 and 38 years ($N = 296$; $M = 23.72$, SD = 2.62) at the time of the interview.

The women were aged between 18 and 38 years, 50% were married before the IS attack and 17.6% were widowed while in IS captivity because their husbands were killed by IS.

Education level attained varied widely among those interviewed with a range of 0 to 12 years of school completed ($M = 6.8$, SD = 2.61).

Younger females ($M = 8.51$, SD = 2.77) had attended more school than older females ($M = 5.18$, SD = 2.26), $t(468) = -5.62$, $p < .01$. Participants from cities ($M = 8.79$, SD = 2.27) had attained higher education levels than those who were living in villages ($M = 5.0$, SD = 2.36), $U = 291.5$, $p < .05$. The participants had all been in IS captivity: 22% less than 5 months, 60% less than 10 months, and 18% more than 14 months. Out of all the women, 14% reported artificial abortion and 4% gave birth and all the children were given up for adoption.

The women came to Germany between 6 and 8 months after their captivity ($M = 7.41$, SD = 4.89) (Table 1).

Ethics

It was approved by the State University of Baden-Württemberg Ethical Review Board and the Institute of Psychotherapy and Psychotraumatology at the University of Duhok.

Procedure

The participants have been living in Germany since January 2016 as part of a special-quota project in the German region of Baden-Wuerttemberg designed to support 1100 of the estimated 3200 women and children who have escaped after being held hostage by IS (Kizilhan and Null-Hussong 2017). They are all exclusively housed in a refugee home for women. All the women are supported by social workers with interpreters. All of the 296 women in our study did not begun psychotherapy. It was more an organizational reasons (no psychotherapists with interpreters in the place of residence) or because they were themselves not yet ready for psychotherapy.

All adolescents were interviewed by four Kurdish-speaking female, well expierenced clinical psychologists, (with equal amounts of interviews) individually at their home in Germany. Each interview lasted approximately 2 h and was conducted in Kurdish, the national language and the native language of the Yazidi. The attendees were guaranteed anonymity.

The interviews were done verbally and the investigators promptly transcribed the answers using the German version instruments (paper and pencil). It was also ascertained that the interviewer had no personal interest in the outcome of the study and that they did not know any of the women who participated in it.

Data were collected from May 15 to October 15, 2017.

Table 1 Demographic characteristics of 296 women victims of war rape

Characteristic	*N*	%
Age (years) *N* = 296		
< 23	98	33.1
24–28	136	45.9
> 29	62	21.0
Place of residence during the IS attack *N* = 296		
Village	198	66.9
City	98	33.1
Occupation *N* = 296		
Farmer	135	45.6
Skilled worker	46	15.6
Civil employee	22	7.4
Student (high school)	93	31.4
Marital status at follow-up *N* = 296		
Single	96	32.4
Married, remarried, living together	148	50.0
Widowed after IS captivity	52	17.6
Children *N* = 296		
0	143	48.4
1–3	89	30.0
3>	64	21.6
Education *N* = 296		
None	103	34.8
Elementary school (3–8 years)	158	53.4
High school and higher	35	11.8
Duration of captivity (months) *N* = 296		
< 5	65	22.0
< 10	178	60.1
> 11	53	17.9
Pregnancy as result of rape		
Pregnancy (total)	40	13.5
Artificial abortion	28	9.5
Child birth	12	4.1
Child given up for adoption	12	4.1
Child kept	0	0

Measures

Instruments

After providing informed consent, each woman was interviewed about her individual experiences during IS captivity in 2014 by using the following instruments.

Demographic questionnaire

Information regarding age, sex, living situation, ethnicity, religion, and education was obtained with this self-report instrument. In addition to demographic data, this questionnaire contained questions about support received at any time during the 3 years since the captivity, e.g., who delivered the aid and what kind of support (emotional, social, and material) the women received.

Structured clinical interview

The Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders (DSM; SCID) is a widely used semi-structured interview intended to determine whether an individual meets criteria for any DSM disorder (American Psychiatric Association 2013).

The Structured Clinical Interview was performed to determine the consequences of rape on the mental health of survivors (American Psychiatric Association 2013). This allowed us to diagnose mental disorders in women survivors according to the DSM-IV classification (American Psychiatric Association 2013).

Event Scale

The Event Scale, adapted from Dyregrov et al. (2000) to the situation in Iraq, is a 15-item scale designed to assess the nature and extent of exposure to various war events (see Table 2). The answers reflect whether the event occurred before, during, or after the captivity (multiple answers possible) and whether the respondent witnessed or personally experienced the event.

PTSD standardized instrument

The PTSD standardized instrument (Verger et al. 2004) with 22 items is based on DSM-IV criteria (Verger et al. 2004).

Frequencies of PTSD standardized instrument item responses were determined, and the prevalence of probable PTSD was calculated according to a cutoff score of 50 (diagnostic efficiency = 0.91, sensitivity = 0.73, specificity = 0.88).

Data analysis

The data collected was computed with the SPSS 22.0 program for Windows (2016), while graphs and tables were compiled in SPSS 22.0 and Excel 2016 from Microsoft Office. Descriptive data was illustrated as mean values of the standard deviation, and categorical parameters as percentages.

Factors associated with PTSD were investigated with univariate logistic regression followed by multiple logistic regression analyses. The Hosmer and Lemeshow were used for the goodness-of-fit test and the c-index to evaluate the fit of the resulting model.

Table 2 Yazidi Women exposure to experience of extreme situations during the IS attack and captivity ($N = 296$)

Event	Ever (%)	Before IS attack (%)	During the IS attack (%)	During the IS captivity (%)
1. Have you been injured with a weapon?	17.6	1.5	17.6	0.0
2. Have you been raped?	100.00	0.0	25.9	78.00
3. Have you been victim of an attack or looting?	100.00	0.0	100.00	37.4
4. Have you seen dead or mutilated bodies?	77.1	9.2	87.1	30.9
5. Have you witnessed a person being beaten or tortured?	93.5	1.4	82.1	92.9
6. Have you witnessed a person being injured with a weapon?	86.8	1.4	95.3	84.7
7. Have you witnessed a person being killed?	46.5	3.5	42.5	30.5
8. Have you witnessed a massacre?	47.4	1.5	33.9	10.4
9. Have you witnessed the murder of your family members?	37.2	1.2	33.7	12.1
10. Did you believe that you yourself would die?	100.00	3.2	98.2	100.00
11. Did you have to hide under dead bodies?	5.2	0.0	5.2	0.0
12. Did you lose your mother?	15.3	2.8	10.3	2.5
13. Did you lose your father?	29.0	1.9	26.2	2.9
14. Did you lose any brothers or sisters?	90.0	11.2	23.8	80.9
15. Have you been injured with a weapon?	23.5	3.4	36.2	16.5

Results

All participants showed on the 15 questions of the Event Scale (Dyregrov et al. 2000) that they had experienced some kind of violence, had been exposed to threatening events, had been raped, or had lost family members during the IS attack or captivity. Table 2 shows the proportion of positive responses to the 15 questions of the Event Scale. All participants had experienced violence of some kind or had been exposed to threatening events, been raped, or lost family members during the IS attack or captivity. All the women interviewed had been raped (100%), and a high proportion had seen dead or mutilated bodies (77%) or been the victim of an attack or looting (100%).

Many participants had witnessed someone being brutally killed (46%), witnessed the death of their own family members (37%), or lost brothers and sisters (90%). The mean total score on the Event Scale for the whole sample was 12.9 out of a possible 15 (SD = 2.9, Mdn = 13, range = 11–15).

Sexual violation

All the Yazidi women had been raped, and almost all more than once and by different rapists (Table 3). A third of the women were forced to witness the rapes of other women. One third of women had not known their rapists before the attack; but other women reported that some rapists were their former teachers and Muslim family friends who later joined IS. The rapists were IS terrorists or Muslim civilians who bought and sold women many times (Table 3). The site of the rape was mostly in houses in places such as Mosoul, Tel Afer or Raqqa, in prison, or in IS military camps. It was reported that in the majority of cases, the rape was accompanied by physical and verbal abuse and injury inflicted on family members, and torture that included being beaten or slapped, struck in the face, cut with a knife, stabbed with sharp objects, strangled, or receiving burns to the skin. As a result of a sexual violation, 40 (13.5%) of the women became pregnant (Table 3).

Table 3 Characteristics of rapes and rapists as reported by 296 women survivors of war rape (multiple answers possible)

Characteristics of rape	*N*	%
Rape events:		
< 10	56	18.9
< 20	76	25.7
> 20	164	55.4
Raped by more than 2 person at the same time	48	16.2
Forced to witness rape	92	31.1
Threats and torture during rape:		
Verbal threats	296	100
Beating and slapping	243	82.1
Cutting with a knife	12	4.1
Stabbing with a sharp object	47	15.9
Strangling	15	5.1
Burning the skin	18	6.1
Nature of rape:		
Vaginal penetration	296	100
Touching and vaginal penetration	49	16.6
Characteristic of rapist:		
Rapist(s) unknown	87	29.4
IS terrorist	117	39.5
Local Muslim citizens	92	31.1
Place of rape:		
Rapists home	169	57.1
IS military camp	47	16.9
Unknown house	34	11.5
Prison	27	9.1
Other	12	4.0
Pregnant		
40	40	13,5

Psychological disorder

Table 4 shows that approximately 2 years after the captivity and rape, most survivors suffered from somatoform disorder (67%), depression (53%), PTSD (49%), anxiety (39%), and sexual dysfunctions (29%).

Prevalence of PTSD

As expected, 48.6% of the women fulfill the criteria of PTSD (Table 4). Most of the women reported reexperiencing the event (75%) and avoidance of reminders of the event and numbness of feelings (32%), respectively. The prevalence of PTSD (Table 5) in those with rape events of more than 20 times was 57% (95% CI = 35.1–65.9%), less than 20 times was 41% (95%, CI = 28.7–4.8%, and less than 10 times 39% [95% CI = 28.2–41.8%], respectively).

Predictors and PTSD

The results of the univariate analysis indicated that the risk of PTSD was significantly higher in participants aged between 24 and 28 years (3.87; [95% CI = 1.29–7.17]) and those who had lost family members, those living alone, those who had endured artificial abortion or given birth as the result of rape and given their child up for adoption or suffered other health problems, and those who reported a perceived high level of threat at the time of the IS attack (Table 5).

The prevalence of PTSD was not associated with the site of the IS attack or the time of being held as a hostage. Multiple logistic regression analyses showed a significant association between PTSD and age (24–28), pregnancy, body pain, or family member still in IS captivity (Table 5). The odds ratios associated with these variables in the multiple logistic regression analysis did not change substantially from those in the univariate analysis. The Hosmer-Lemeshow goodness-of-fit test and the C-index show that the models fit the data well.

Discussion

This study examined 296 women survivors of the IS attack and captivity in Iraq and Syria in 2014, a relatively high number compared with most other studies focusing on psychological consequences of wartime rape (Cienfuegos and Monelli 1983; Basoglu 2009). The prevalence of PTSD overall was high (48.6%) at a mean of 2.0 years (SD = 0.4) after the event. Comparisons with other studies such as those in Rwanda or

Table 4 Physical and psychological symptoms and the frequency of DSM-IV PTSD, a According to DSM-IV criteria, PTSD is present after exposure to a traumatic event when each of the five criteria listed in the table are present; each of the first three criteria is considered present when the subcriteria reach a specified number, b 95% CI = 38.5–57.5. The mean interval between the event and follow-up was 2.0 years (SD = 0.4, range = 1.4–2.8).

Health problems after rape	*N*	%
Physical:		
Dizziness	98	33.1
Stomach pain	112	37.8
Headache	198	66.9
Sweating	147	49.7
Palpitations	102	34.4
Muscle pain	144	48.6
Psychiatric disorders:		
Depression	158	53.4
Anxiety	116	39.1
Somatoform	199	67.2
Dissociation	84	28.4
Sexual dysfunctions	87	29.4
Posttraumatic stress disorder (PTSD)*	144	48.6
Suicidal ideas after IS captivity	159	53.7
Suicidal attempts after IS captivity in Iraq	48	16.2
Posttraumatic stress disorder (PTSD)		
Reexperiencing the event	221	74.7
Avoidance of reminders of the event and numbness of feelings	148	32.4
Hyperarousal	204	68.9
Duration of preceding symptoms 1 month or longer	269	90.9
Repercussions of the preceding symptoms on activities of daily living	216	73.0
Meets criteria for PTSD	144	48.6 b

Table 5 Factors Associated with PTSD diagnosis after the terrorist attack in 2014 Terrorist ($N = 296$) at a 2017 Follow-up Assessment, [a]Hosmer and Lemeshow goodness-of-fit test: 0.84; c-index: 0.81. *$p < 0.05$

Factor	No PTSD		PTSD		Univariate logistic regression		Multiple logistic regression[a]	
	N	%	*N*	%	Odds ratio	95% CI	Odds ratio	95% CI
Age								
< 23	68	70.6	30	29.4	1.00		1.00	
24–28	73	53.7	63	46.3	2.38*	1.11–4.88	3.87*	1.29–7.17
≥ 29	37	60.0	25	40.0	1.73	0.64–4.68	2.64	0.79–7.52
Attending German language course								
Yes	107	62.2	65	37.8	1.00			
No	60	48.0	64	52.0	1.95*	0.98–3.85		
Education								
High	20	58.5	15	41.4	1.00			
Low	94	59.2	64	40.5	1.03	0.56–1.89		
No school education	58	56.3	45	43.7	1.79	0.69–4.68	2.78	0.89–7.52
Relationship status								
With other family member (like sister, brother etc.)	115	64.6	63	35.4	1.00		1.00	
Alone	33	50.8	32	49.2	2.39*	1.26–4.55	2.89*	1.09–5.77
Rape events:								
< 10	35	60.7	22	39.3	1.00		1.00	
< 20	45	59.2	31	40.8	2.81*	1.24–4.31	2.96	1.06–5.72
> 20	70	42.7	94	57.3	3.85*	1.26–6.44	4.99*	1.05–8.44
Pregnant								
No	146	66.1	75	33.9	1.00		1.00	
Yes	12	24.0	38	76.0	2.08*	1.19–3.93	3.58*	1.27–6.37
Body pain								
No	124	68.1	58	31.9	1.00		1.00	
Yes	54	47.4	60	52.6	4.25*	1.87–6.74	3.64*	1.33–6.64
Other health problems since attack								
No	54	71.1	22	28.9	1.00			
Moderate	48	59.3	33	40.7	1.88	0.74–4.8		
Severe	75	64.0	64	46.0	3.35*	1.02–6.42		
Family member still in IS captivity								
No	54	79.4	14	20.6	1.00		1.00	
Yes	127	55.7	101	44.3	5.39*	1.27–16.17	3.99*	1.08–15.76
Medical treatment								
No	88	69.2	39	30.7	1.00			
Yes	88	52.1	81	47.9	2.92*	1.19–4.5		
Psychotherapeutic treatment								
No	127	60.6	89	51.4	1.95	076–5.99		
Yes	34	42.5	46	57.5	1.00			

former Yugoslavia that focus on psychological consequences of rape in war situations and terrorist attacks are not without difficulty, as there are differences between populations, religion, culture, perception of illness study methods, and measures (Fukunishi 1999; Desivilya et al. 1996; Schaal and Elbert 2006; Shanks and Schull 2000). Nevertheless, the prevalence of PTSD was significantly higher than the 16.1% prevalence rate in a study of survivors of sexual violence in Dafur (Meffe and Marmar 2009) and Rwanda (Pham et al. 2004).

The prevalence of PTSD among respondents who had been raped less than 20 times and more than 20 times during IS

captivity (40 and 57%) was significantly high compared with the general population (Wilken and Welch, 2003). These findings suggest that there are other factors than those associated with physical threat that may contribute to the development of PTSD. The highest odds ratio (4.99) was found between rape and PTSD. Our findings supported studies that show factors such as sexual violation or body pain to be associated with the onset of posttraumatic stress disorder (Kessler et al. 1995; Kizilhan and Cavelius 2016).

The study indicates that rape is a powerful trauma that has resulted in different psychological disorders in all the women involved in the study; these include depression, anxiety, dissociation, somatoform disorder, sexual dysfunctions, and posttraumatic stress disorder, and the findings correspond to other studies into consequences of wartime rapes on civilians (Schaal and Elbert 2006).

Paul et al. (2013) reported that rape victims were 6.2 times more likely to develop PTSD than women who had never been victims of crime (31 vs 5%). Rape victims were 5.5 times more likely to have current PTSD than those who had never been victims of crime (11 vs 2%).

Rape with other traumatic events (attack, torture, and witness to killings or rape) resulted in high long-term prevalence rates of depression and anxiety, and especially somatoform disorder as a cultural aspect to coping with the trauma (Kizilhan 2017).

In particular, women who experienced artificial abortion after becoming pregnant from rape suffered considerably more from PTSD. Studies of rape-related pregnancy rates in a non-war environment show a figure of 5.0% per rape (Holmes et al. 1996). Nevertheless, the rate may increase in war situations where women are more likely to be systematically tortured and raped.

The social, cultural, and religious environment and individual nurture influence the survivors' reaction to rape (Kizilhan and Null-Hussong 2017). In a traditional patriarchal society, such as in Iraq and Syria, survivors refuse to talk about rape. A different understanding of health and illness, of traditional medical care in the home country, and of the role of the individual and collective society can all play a great part in the diagnosis and treatment of people from various cultural backgrounds with physical reactions to extreme stress, such as sexual violation (Kizilhan and Null-Hussong 2017).

Furthermore, in women over 23 years of age, sexual assault may be something that strikes at the heart of cultural and religious values that are deeply internalized through their socialization. To identify those women at greatest risk of developing PTSD, we suggest psychotherapists, health workers, and other professionals identify those women with a potential weakness in the form of earlier victimization, thus avoiding a chronification of the PTSD.

Last but not least, the alarmingly high rates of psychiatric disturbances among the raped women in war provide striking evidence that researchers and clinicians, as well as policy makers, have an ethical obligation to pay more attention to the urgent needs of raped women in war as the most sensitive and often neglected members of our societies.

In conclusion, wartime rapes leave deep and lasting consequences on the mental health of survivors, their families, and the society. However, the specific role of minority groups and non-Muslim groups and their specific interaction to trauma in situations of war and rape needs further study.

Sexual assault represents one of the most traumatic experiences a person can be exposed to regarding the high incidence of PTSD in its aftermath compared to other traumas (Kessler et al. 1995).

Limitations

We used the Kurdish language in the oral tests, but valid and reliable test instruments do not exist in Kurdish. This limits the explanatory power of the study (Kizilhan and Null-Hussong 2017).

The composition characteristics of the group (i.e., their low age and level of education) might also have an influence on the findings of this study, as well as the fact that the women were unfamiliar with the series of tests. Also, the long-term psychosocial and political stresses of the Saddam era and transgenerational traumatization in Iraq may have left traces which still remain.

Compliance with ethical standards

It was approved by the State University of Baden-Württemberg Ethical Review Board and the Institute of Psychotherapy and Psychotraumatology at the University of Duhok.

Conflict of interest The author declares that they have no competing interests.

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