

Disclosure Attitudes and Social Acknowledgement as Predictors of Posttraumatic Stress Disorder Symptom Severity in Chinese and German Crime Victims

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Objective: Only rare data exist comparing cross-cultural aspects of civilian traumatization. We compared prevalence rates of posttraumatic stress disorder (PTSD) in German and Chinese crime victims, and investigated the cross-cultural effect of 2 interpersonal predictors.

Method: German ($n = 151$) and Chinese ($n = 144$) adult crime victims were assessed several months postcrime. The parallel questionnaire set assessed PTSD symptom severity, disclosure attitudes, social acknowledgement, and demographic and crime characteristics.

Results: German and Chinese participants differed significantly in their PTSD symptom severity. However, in both samples, disclosure attitudes and social acknowledgement predicted PTSD symptom severity with a similar strength, in addition to the effects of other PTSD predictors.

Conclusions: The results suggest that interpersonal variables are predictors of PTSD symptom severity in both cultures and should be included in etiologic models of PTSD.

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Clinical Implications

- Disclosure attitudes, that is, pronounced urge to talk and (or) reluctance to talk, predicts PTSD symptom severity in German and Chinese crime victims.
- Lack of general social acknowledgement for being a victim predicts PTSD symptom severity in German and Chinese crime victims and should be considered with PTSD patients.
- Reliable and valid questionnaires assessing disclosure attitudes and social acknowledgement may be helpful in identifying people at risk for PTSD.

Limitations

- The low response rate of the German study participants might have biased the results.
- The samples differed in sociodemographic variables, thus future studies should use matched samples.
- In addition to questionnaire assessments, field studies with trauma victims and their relatives would help to collect objective data on interpersonal processes of trauma recovery.

Key Words: *crime victims, posttraumatic stress disorder, cross-cultural study, disclosure, social acknowledgement*

Most knowledge on the consequences of traumatization and potential predictors of PTSD has been derived from studies involving people originating from industrialized countries.¹⁻³ When PTSD in non-Western populations was studied, the samples often consisted of refugees living in the United States and western Europe. Consequently, for example, originating from Cambodia or Iraq, these samples were highly selective and not representative for the refugees' countries of origin.⁴ Few studies have been conducted in non-Western countries, for example, Asian countries. The results of intercultural research indicate that the construct of PTSD is replicable across cultures.^{5,6} However, cultural differences regarding prevalence rates and predictors of the development and maintenance of the disorder have rarely been investigated in PTSD research.

While studies indicate lifetime PTSD rates between 20% and 27% in German crime victims,⁷ no prevalence data are available for Chinese crime victims. Nevertheless, studies with Chinese samples suggest that PTSD prevalence rates are comparable with Western countries (for example, 24% nine months postearthquake,⁸ 13% four months postfatal construction accident,⁹ 9% one to 2 years postflood¹⁰).

Recent research identified interpersonal variables, such as lacking social support, as predictors of PTSD, explaining incremental variance in PTSD after taking into account the effects of situational and intrapersonal predictors.^{11,12} Two specific processes of social support have emerged as relevant in German trauma survivors: disclosure of trauma attitudes^{13,14} and social acknowledgement as a victim.^{15,16} Disclosure of stressful life events and traumatic experiences (oral or written) has long been assumed to have positive effects on recovery.¹⁷ In contrast to experimental research on disclosure with nonclinical samples¹⁸ that indicates that expressing oneself about upsetting experiences is related to better well-being, in PTSD research the need to talk about an aversive experience is not associated with better health and is sometimes associated with even more severe symptoms.¹⁹⁻²² These ambiguous results of recent research in PTSD patients led to further conceptual differentiation of disclosure. For example, we found that both the urge to disclose and the reluctance to disclose are correlated with higher PTSD levels.^{13,23,24} Social acknowledgement describes victims' perception of receiving positive individual or societal reactions that recognize their traumatic experiences and current difficult

situation.¹⁵ In Western societies, negative social reactions have been found to be linked to higher PTSD symptom severity.^{15,25-29} For example, negative homecoming reception after military service was found to be an important predictor of trauma recovery in Israeli and American soldiers.^{30,31} Comparably, previous research in Western societies showed that lack of social support operates as a risk factor for PTSD, while existing social support is not protective.^{11,12} Both concepts, disclosure and social acknowledgement, are explained in detail in a previous issue of this journal.²³

Cultural Aspects

Neither Asian nor Western culture is homogeneous. Both cultures consist of people with various ethnic, religious, economic, and educational backgrounds. Nevertheless, while acknowledging individual differences, cultures shape the interpersonal processes of their members. In Western cultures, individualistic-independent worldviews prevail, while Asian cultures are characterized by collectivistic-interdependent worldviews.³²⁻³⁴ Within collective social networks, members' identities are deeply embedded in the groups to which they belong (for example, family, school, or country). In collectivistic cultures, people not only experience more (interdependent) socially engaging emotions³⁵ but also—in contrast to Westerners—their perception of positive emotional support predicts subjective well-being.³⁶ However, while in individualized Western societies, being with others and sharing one's misery and psychological wounds is believed to be health-promoting in times of stress, this differs in collectivistic-interdependent societies, where the principle of high self-control is regarded as mature³⁷ and the expression of personal experiences might be seen as inappropriate; further, individual needs may be ignored to protect the family from shame when problems, such as traumatization and (or) mental illness, arise. This in turn may contribute to low disclosure and reporting rates as found in studies on child sexual abuse.^{38,39} As yet, the available evidence is inconsistent. While a study of Pakistani women found that social norms prevented disclosure of sexual violence that led to low social support,⁴⁰ another study found no differences in abuse disclosure rates for women living in Singapore and the United States.⁴¹ Consequently, cultural differences may influence the disclosure-related interpersonal processes of trauma recovery.

Our study compares PTSD symptom severity and the importance of interpersonal PTSD predictors—specifically, disclosure attitudes and social acknowledgement—in 2 samples of German and Chinese crime victims. We chose samples from Germany and China because these 2 countries represent relatively typical individualistic-independent (Western) and

Abbreviations used in this article

DTQ	Disclosure of Trauma Questionnaire
IES-R	Impact of Event Scale—Revised
PTSD	posttraumatic stress disorder
WR	Weisser Ring

collectivistic-interdependent (Eastern) societies, respectively.

First, given the evidence reviewed above, we hypothesized that PTSD symptom severity would be at a similar level in both samples. Secondly, we hypothesized that German crime victims would show more expressive disclosure attitudes, but experience less social acknowledgement than Chinese crime victims; notwithstanding, we expected that both variables predicted PTSD symptom severity with similar strength in the German and Chinese sample.

Materials and Method

Design

The study was conducted in Germany and China. The German participants were recruited anonymously by the only nationwide nonprofit victim aid organization, the WR. The WR has a strict data-protection policy and mailed our questionnaires to potential participants all over Germany. The Chinese data were collected with the help of orthopedic hospitals in Beijing and Sinkiang ($n = 81$), police stations in GuangZhou City and ShanXi province ($n = 50$), universities ($n = 75$), and the Internet ($n = 6$). All questionnaires enclosed a letter that described the aim of the study, the strictly anonymous procedure, and the voluntary participation. Participants were informed that they would receive a summary of the survey's results after completion of the study. Participants had the possibility to return the questionnaire to the organizations that helped in recruiting or directly to the German or Chinese study coordinators. Informed consent was assumed by people who were willing to take part in the study by sending the completed questionnaires back. The study was approved by the WR, the psychological department at the Technical University Dresden, and the psychological department of the Beijing Normal University.

For the German sample, the response rate was 35.5% ($n = 175$ of 492), whereas it was 80.0% ($n = 144$ of 180) for the Chinese sample. This variation can be explained by the differing recruitment method. While the German participants were recruited indirectly by mail sent by the WR, the Chinese crime victims were contacted by the researchers in person, who then handed out the questionnaires. Because of the strictly anonymous procedure, it is not possible to evaluate the representativeness of the samples. Regarding the German sample, the response rate was at a similar level as in other victim surveys that were conducted by mail, for example, 32%.⁴²

Inclusion criteria were: having experienced an interpersonal trauma (for example, a robbery or a physical attack) at least 1 month prior to the assessment, speaking fluent German or Chinese, and having answered at least 2 out of 3 of each scale of the questionnaire set. In the German sample, 151

respondents fulfilled the inclusion criteria, while all of the Chinese respondents could be included in the study.

Participants

A total of 295 crime victims participated in the study: German ($n = 151$) and Chinese ($n = 144$), aged between 15 and 90 years (mean 37.8, SD 15.8). About one-half of the sample was female (51.9%), nearly one-half (45.1%) were married or cohabiting, 32.3% had completed junior high school, and 67.7% had at least a high school diploma. About two-thirds (70.0%) of the participants had experienced bodily injury inflicted by strangers, and 30.0% experienced armed robbery with or without bodily injury. Weapons were used in 53.4% of the cases. Owing to the event, 77.6% of the participants reported severe injuries and 78.2% needed immediate medical care.

Measures

The IES-R⁴³ (German version⁴⁴ and Chinese version⁴⁵) is a frequently used 22-item self-report scale assessing the frequency of PTSD symptoms experienced during the week prior to the assessment. The scale yields a total score and 3 subscales measuring the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, PTSD symptom clusters of intrusion (7 items), avoidance (8 items), and hyperarousal (7 items). Responses were measured on a 4-point Likert scale using a nonequidistant scoring scheme (0 = not at all, 1 = seldom, 3 = sometimes, 5 = often). The scale showed strong internal consistency and test-retest reliability across various trauma populations⁴³; the German and Chinese validations showed satisfactory psychometric properties.^{44,46} In our study, Cronbach's alphas for the German sample were $\alpha_{\text{Intrusion}} = 0.88$; $\alpha_{\text{Avoidance}} = 0.73$; $\alpha_{\text{Hyperarousal}} = 0.86$, and for the Chinese sample $\alpha_{\text{Intrusion}} = 0.81$; $\alpha_{\text{Avoidance}} = 0.75$; $\alpha_{\text{Hyperarousal}} = 0.81$, respectively.

The Trauma Exposure Index is a procedure developed and tested in previous research.⁴⁷ The sum score of the 4 items: degree of physical violence, use of weapons, severity of injury, and subsequent need of medical assistance indicates the degree of trauma exposure (4-point Likert scale, range 1 to 4). In our study, Cronbach's alpha was 0.78.

The DTQ⁴⁸ (we carried out the translation from English to Chinese and then the back translation) measures aspects of a person's intention to disclose traumatic events. The 34 items are rated on a 6-point scale from 0 (not at all) to 5 (completely) and are assigned to the following 3 subscales: reluctance to talk (13 items) assesses resistance to tell others about the trauma, urge to talk (11 items) assesses the victims' need to disclose the traumatic experiences, and emotional reactions during disclosure (10 items) assesses affective states while disclosing the trauma. In studies with German samples,

Table 1 Demographic characteristics for German and Chinese samples

Demographic characteristics	Sample		χ^2 (df) and F (df)
	German ($n = 151$)	Chinese ($n = 144$)	
Sex, %			$\chi^2 = 7.4$, $df = 1^a$
Men	40.4	56.3	
Women	59.6	43.8	
Age, years			$F = 58.2$, $df = 1,292^b$
Mean (SD)	44.2 (17.6)	31.3 (10.1)	
Range	15–90	17–68	
Relationship status, %			$\chi^2 = 26.9$, $df = 1^b$
Single	60.0	29.9	
Married or cohabitating	40.0	70.1	
Living situation, %			$\chi^2 = 23.9$, $df = 1^b$
Alone	49.7	22.2	
With others	50.3	77.8	
Highest education, %			$\chi^2 = 13.14$, $df = 1^b$
Junior high school	42.0	22.2	
High school or university	58.0	77.8	

^a $P < 0.01$; ^b $P < 0.001$

the first 2 subscales were independent of each other, whereas the third subscale was moderately positively correlated with the other scales^{13,48}; previous studies indicated good reliability and validity, Cronbach's alpha was 0.88.⁴⁸ The Chinese translation had a Cronbach's alpha of 0.86.

The Social Acknowledgement as Victim Questionnaire¹⁵ (Chinese translation proceeded as with DTQ) measures a traumatized person's perception of recognition as victim or survivor and perceived support from family, friends, acquaintances, and local authorities. The 16 items of this self-report scale are rated on a 6-point scale from 0 (not at all) to 5 (completely), and are assigned to the following 3 subscales: recognition as victim and (or) survivor (6 items), general disapproval (5 items), and family disapproval (5 items). Moderate negative intercorrelations exist between both first scales ($r = -0.38$) and the first and third scale ($r = -0.49$), whereas the second and third scale correlate moderately positively ($r = 0.42$). Psychometric properties in German samples are satisfactory Cronbach's alpha of 0.78 to 0.87, retest reliability at 0.74 to 0.85.¹⁵ For the Chinese version, Cronbach's alpha was 0.76.

Results

Table 1 presents an overview of the demographic characteristics of the samples. German and Chinese participants differed in all demographic characteristics. Unlike the Chinese

sample, the German sample consisted of more women, with nearly two-thirds being single or living alone. In addition, while junior high school and high school diplomas were the most common diplomas in the German sample, nearly one-half of the Chinese participants had a university degree.

Table 2 presents the characteristics of the traumatic events. The samples showed no differences regarding time since the crime, duration of the assault, violence experienced, or number of injured victims owing to the crime. However, significant differences existed in the crime experienced. Chinese crime victims experienced more physical assault in relationships than the German victims. Further, the German crime victims reported significantly more severe traumatic experiences, with a higher percentage of them being threatened by a weapon and needing immediate medical assistance following the crime. Given these differences, demographic variables and all differing event characteristics were statistically controlled for in the remaining analyses.

PTSD Symptom Severity in German and Chinese Crime Victims

While the German participants suffered from high PTSD symptom severity on all 3 IES-R subscales, the Chinese responses indicated milder symptom severity that was comparable with the symptom level reported in a previous study for German crime victims (Table 3).⁴⁴ The differences were significant for each subscale, even after controlling for

Table 2 Traumatic event characteristics for German and Chinese samples			
Event characteristics	Samples		χ^2 (df) and F (df)
	German (n = 151)	Chinese (n = 144)	
Crime, %			$\chi^2 = 3.3, df = 1^a$
Bodily injury	63.4	75.0	
Armed robbery	35.7	25.0	
Months since crime			$F = 2.7, df = 1,293$
Mean (SD)	5.3 (1.7)	7.5 (16.3)	
Range	2–14	1–100	
Duration of assault, minutes			$F = 3.4, df = 1,264$
Mean (SD)	23.7 (79.4)	11.0 (19.1)	
Range	1–780	1–180	
Violence, ^b %	81.8	73.8	$\chi^2 = 2.7, df = 1$
Use of weapon, ^b %	63.9	44.4	$\chi^2 = 10.1, df = 1^c$
Injury, ^b %	79.9	75.4	$\chi^2 = 0.8, df = 1$
Need of medical assistance, ^b %	87.3	69.0	$\chi^2 = 13.9, df = 1^d$
Trauma Exposure Index			$F = 138.4, df = 1,290^d$
Mean (SD)	11.8 (3.9)	6.8 (3.4)	
^a $P < 0.05$			
^b Variables used to calculate trauma severity (Trauma Exposure Index)			
^c $P < 0.01$; ^d $P < 0.001$			

demographic and event characteristics. Likewise, the univariate analyses of covariance for the 3 disclosure subscales, recognition, and general disapproval were all statistically significant (Table 3). However, no significant group differences emerged for familiar disapproval.

Interpersonal Variables as PTSD Predictors

Finally, using a hierarchical regression analyses, we tested country, disclosure attitudes, and social acknowledgement as predictors of PTSD symptom severity (Table 4). To control for demographic and event characteristics, these covariates were entered in Step 1. In addition, we used the variable time since the event as a covariate, because many traumatized people recover within the first months after traumatization thus the variable is an important predictor of PTSD symptom severity.² In Step 2, the variable country was entered in the regression equation. Finally, Step 3 tested the incremental variance explained by the interpersonal variables. The DTQ subscale emotional reaction was excluded from all regression analyses owing to its close connection to PTSD symptomatology and the strong correlations with both of the other DTQ subscales. The variables trauma severity and country both accounted for significant variance in PTSD symptom

severity. In Step 3, the interpersonal variables reluctance to talk, urge to talk, and general disapproval explained an additional 14% of the variance. The directions of all regression coefficients were as expected. The results were very similar when the analyses were repeated for the individual IES-R subscales.

We tested for cultural differences in the strength of interpersonal variables as predictors of PTSD by multiple regression analyses done separately for the 2 samples (Table 5). The results for the 2 samples showed similarities and differences. In both samples, sex and trauma severity were significant predictors in Step 1 (as in the analysis for the full sample, Table 4). Moreover, in both samples, interpersonal variables explained similar amounts of incremental variance (22% in the German sample; 23% in the Chinese sample). However, in the Chinese sample, urge to talk was a much stronger predictor than in the German sample, whereas reluctance to talk was significant in the German but not the Chinese sample. General disapproval, which was a significant predictor in the analysis of the full sample, had smaller regression coefficients and became nonsignificant in the separate analyses for the German and Chinese samples.

Table 3 Mean, SD, and group differences of outcome and predictor variables between German and Chinese crime victims

Variable (range)	Sample			Group differences, ^a <i>F</i> (<i>df</i>)
	German (<i>n</i> = 151), Mean (SD)	Chinese (<i>n</i> = 144), Mean (SD)	Total (<i>n</i> = 295), Mean (SD)	
PTSD				
Intrusion (0–35)	25.50 (7.33)	16.11 (5.31)	20.92 (7.95)	23.79 (8,242) ^b
Avoidance (0–40)	24.84 (6.53)	18.70 (5.58)	21.85 (6.81)	7.64 (8,242) ^b
Hyperarousal (0–35)	25.83 (7.62)	15.25 (5.54)	20.66 (8.52)	25.50 (8,242) ^b
Sum score (0–110)	76.17 (18.31)	50.06 (14.26)	63.43 (21.00)	23.67 (8,242) ^b
Disclosure attitudes				
Reluctance to talk (0–55)	20.22 (12.34)	25.51 (10.21)	22.80 (11.63)	3.35 (8,241) ^b
Urge to talk (0–65)	22.25 (11.33)	18.02 (8.65)	20.19 (10.31)	3.56 (8,241) ^b
Emotional reaction (0–50)	25.57 (12.47)	18.32 (10.41)	22.03 (12.05)	7.72 (8,241) ^b
Social acknowledgement				
Recognition (0–30)	12.89 (6.25)	14.06 (7.21)	13.46 (6.75)	3.71 (8,241) ^b
General disapproval (0–25)	10.61 (7.03)	8.00 (4.89)	9.34 (6.21)	3.19 (8,241) ^c
Family disapproval (0–25)	8.44 (6.05)	8.96 (4.34)	8.70 (5.27)	1.34 (8,238)

^a Covariates were sex, age, living situation, education, crime, months since crime, and the Trauma Exposure Index.
^b $P < 0.001$; ^c $P < 0.01$

Discussion

In our study, PTSD symptom severity was higher in the German sample, compared with the Chinese sample. This difference held when relevant demographic and event characteristics (for example, sex and severity of the traumatic events) were statistically controlled. Given that our German sample shows especially high symptom severity, compared with previous studies with German crime victims,^{44,49} and that in China PTSD is as prevalent and persistent as elsewhere following different types of traumatization,^{8,9,50–52} we do not believe that this result indicates a general difference between Chinese and German crime victims.

The finding that the German crime victims reported more expressive disclosure attitudes (urge to talk and emotional reactions while disclosing) whereas the Chinese reported more reluctance to talk about the trauma is in line with previous cross-cultural theories and findings explaining low disclosure rates.^{37–39} Accordingly, consistent with the hypothesis that people in interdependent societies experience more socially engaging emotions,³⁵ the Chinese participants experienced significantly more social recognition as well as significantly less general disapproval.

In previous studies of our group, disclosure attitudes and social acknowledgement were important predictors of

PTSD symptom severity.^{15,16,48} But how are these interpersonal processes related to intrapersonal trauma recovery in interdependent societies such as the Chinese in which emotional aspects are strongly regulated? The results of our study are in line with previous findings. Disclosure attitudes as well as general social disapproval explained significant amounts of PTSD variance in the cross-cultural sample, even when controlling for other important predictors. Country-wise regression-analyses showed amounts of explained variance but also showed a pattern of results that was relatively similar in both cultures. In both samples, urge to talk predicted PTSD symptom severity; however, it was a stronger predictor in the Chinese, compared with the German, sample. The urge to disclose traumatic experiences seems to be a ubiquitous need for people suffering from PTSD symptoms. However, reluctance to talk was a significant PTSD predictor in the German sample only—although the Chinese indicated significantly more reluctance to disclose their traumatic experiences. We interpret this finding as a result of cultural differences: the reluctance to talk about one's trauma in China may be seen as a result of one's own cultural values and therefore would not be stressful, whereas in Germany reluctance to talk about the trauma would more often be seen as a deficiency. Correspondingly, the predictive effect of reluctance to disclose traumatic experiences was larger in the German sample.

Table 4 Hierarchical regression analysis predicting PTSD symptom severity (IES-R sum score) for the whole sample ($n = 295$)

	Predictors	R^2	Adj R^2	ΔR^2	β^a
Step 1	Demographic and trauma variables	0.42 ^b	0.40 ^b	0.42 ^b	
	Sex ^c				-0.17 ^b
	Age				0.01
	Relationship status ^d				-0.07
	Living situation ^e				-0.04
	Education ^f				-0.02
	Crime ^g				-0.05
	Months since crime				0.00
	Trauma severity (TEI) ^h				0.25 ^b
Step 2	Country ⁱ	0.45 ^b	0.43 ^b	0.03 ^j	-0.35 ^b
Step 3	Interpersonal variables	0.59 ^b	0.56 ^b	0.14 ^b	
	DTQ				
	Reluctance to talk				0.17 ^b
	Urge to talk				0.22 ^b
	SAQ				
	Recognition				0.00
	General disapproval				0.16 ^j
	Family disapproval				0.00

Adj = adjusted; SAQ = Social Acknowledgement as Victim Questionnaire; TEI = Trauma Exposure Index

^a Final results

^b $P < 0.001$

^c 0 = female, 1 = male

^d 0 = alone, 1 = partner

^e 0 = alone, 1 = with others

^f 1 = junior high school, 2 = high school or university

^g 1 = bodily injury, 2 = armed robbery

^h The TEI includes the 2 crime-related variables significantly differing in both samples (use of weapon and need of medical assistance after the crime); therefore, those variables were not entered separately into the analysis.

ⁱ 0 = Germany, 1 = China

^j $P < 0.01$.

Several limitations warrant discussion. First, the different recruitment strategies used for the Chinese and German samples resulted in a lack of matching between the samples and discrepant response rates. The 2 samples differed for sociodemographic variables as well as trauma characteristics. In comparison with the German sample, the Chinese sample had a greater proportion of men, the participants were somewhat younger, lived more frequently in partnerships, and were better educated. The differences in the sociodemographic variables might result from the differing recruitment processes which led to the inclusion of rural participants in the German but not the Chinese sample. However, 2 additional sex-controlled regression analyses did result in the same predictor patterns for both samples. Although we used statistical strategies to rule out these differences, the results remain

difficult to interpret and matched samples should be used in future studies. Second, compared with the high response rate among Chinese participants, the German sample response rate was relatively low. This low response rate may compromise the representativeness of the German sample and, therefore, bias the results. It may be that victims who felt in need of talking about their experience and who did not feel acknowledged as victims were more likely to volunteer in this investigation—this could explain the high PTSD symptom severity in the German sample, compared with the Chinese sample, and also compared with previous studies with German crime victims.⁷ In future studies, the broader processes of trauma recovery should be investigated in representative samples. The second limitation of our study is that while we focused on broader processes of recovery,

Table 5 Hierarchical regression analyses for disclosure attitudes and social acknowledgement predicting PTSD symptom severity (IES-R sum score), separately for the German and Chinese Samples

Predictors		Sample							
		German (<i>n</i> = 151)				Chinese (<i>n</i> = 144)			
		<i>R</i> ²	Adj <i>R</i> ²	ΔR^2	β^a	<i>R</i> ²	Adj <i>R</i> ²	ΔR^2	β^a
Step 1	Demographic and trauma variables	0.18 ^b	0.11 ^b	0.18 ^b		0.13 ^b	0.07 ^b	0.13 ^b	
	Sex ^c				-0.23 ^b				-0.20 ^b
	Age				-0.04				0.08
	Relationship status ^d				-0.08				-0.15
	Living situation ^e				-0.11				-0.04
	Education ^f				-0.08				0.05
	Crime ^g				-0.05				-0.09
	Months since crime				0.09				0.02
	Trauma severity (TEI) ^h				0.27 ^b				0.29 ⁱ
Step 2	Interpersonal variables	0.40 ^j	0.31 ^j	0.22 ^j		0.36 ^j	0.29 ^j	0.23 ^j	
	DTQ								
	Reluctance to talk				0.26 ^b				
	Urge to talk				0.23 ^b				
	SAQ								
	Recognition				-0.03				-0.01
	General disapproval				0.23 ^k				0.10
	Family disapproval				-0.03				0.01

Adj = adjusted; SAQ = Social Acknowledgement as Victim Questionnaire; TEI = Trauma Exposure Index

^a Final results

^b *P* < 0.05

^c 0 = female, 1 = male

^d 0 = alone, 1 = partner

^e 0 = alone, 1 = with others

^f 1 = junior high school, 2 = high school or university

^g 1 = bodily injury, 2 = armed robbery

^h The TEI includes the 2 crime-related variables significantly differing in both samples (use of weapon and need of medical assistance after the crime); therefore, those variables were not entered separately into the analyses.

ⁱ *P* < 0.01; ^j *P* < 0.001; ^k *P* < 0.07

including social processes, the key measures were assessed exclusively by self-report. The use of self-reports has the advantage of being economically and easily administered in cross-cultural settings. However, the disadvantage is that self-report measures may fail to capture the full complexity of social and interpersonal processes because they only depict the subjective side of social processes. A third limitation is that we could not control for pretraumatic individual differences regarding communication and the perception of social acknowledgement, which may be useful because participants with high PTSD symptom severity may be biased in their perception of how others react toward them. Because of the

limitations of questionnaires, with hindsight we cannot tell why the Chinese sample were reluctant to disclose their traumatic experiences: are they bound to their norms or is it a personal wish not to talk about the trauma? Finally, the restriction to only one type of trauma victims, namely, crime victims, indicates the need for cross-validation of the results by analyzing samples with other types of traumatic events. To summarize, our study suggests that the interpersonal variables—disclosure attitudes and social acknowledgement—have similar predictive effects on PTSD severity in German and Chinese crime victims. Despite the differing

interpersonal contexts, the examined interpersonal variables were significant PTSD predictors in both cultures.

Conclusions

In conclusion, the findings of our study contribute to a broader understanding of interpersonal processes following traumatic events. The results suggest that the integration of interpersonal variables in future models of PTSD is useful, as the interpersonal predictors showed cultural sensitivity, even in cultures with highly differing social interaction. If these interpersonal processes predict the course of PTSD symptoms, targeting them directly may be useful in prevention and treatment strategies for traumatized people and their social networks. Future research should try to identify variables that moderate social processes of PTSD development as well as the course of PTSD across different trauma types and cultures.

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Other (nonoverlapping) analyses using parts of the German sample ($n = 86$) have been reported in a previous issue of this journal.²³ Further, nonoverlapping analyses investigating the influence of value orientation on mental health using the German sample and parts of the Chinese sample ($n = 130$) has been published in *Psychology and Psychotherapy: Theory, Research and Practice*.⁵³

References

- Breslau N, Davis GC. Posttraumatic stress disorder in an urban population of young adults: risk factors for chronicity. *Am J Psychiatry*. 1992;149(5):671–675.
- Kessler RC, Sonnega A, Bromet E, et al. Posttraumatic stress disorder in the National Comorbidity Survey. *Arch Gen Psychiatry*. 1995;52(12):1048–1060.
- Stein MB, Hofler M, Perkonig A, et al. Patterns of incidence and psychiatric risk factors for traumatic events. *Int J Methods Psychiatr Res*. 2002;11(4):143–153.
- Hollifield M, Warner TD, Lian N, et al. Measuring trauma and health status in refugees: a critical review. *JAMA*. 2002;288(5):611–621.
- Kinzie JD, Denney D, Riley C, et al. A cross-cultural study of reactivation of posttraumatic stress disorder symptoms: American and Cambodian psychophysiological response to viewing traumatic video scenes. *J Nerv Ment Dis*. 1998;186(11):670–676.
- Norris FH, Perilla JL, Murphy AD. Postdisaster stress in the United States and Mexico: a cross-cultural test of the multicriterion conceptual model of posttraumatic stress disorder. *J Abnorm Psychol*. 2001;110(4):553–563.
- Schützwohl M, Maercker A. Posttraumatische Belastungsreaktionen nach kriminellen Gewaltdelikten. *Z Klin Psychol Psychother*. 1997;26(4):258–268.
- Wang X, Gao L, Shinfuku N, et al. Longitudinal study of earthquake-related PTSD in a randomly selected community sample in north China. *Am J Psychiatry*. 2000;157(8):1260–1266.
- Hu BS, Liang YX, Hu XY, et al. Posttraumatic stress disorder in co-workers following exposure to a fatal construction accident in China. *Int J Occup Environ Health*. 2000;6(3):203–207.
- Liu A, Tan H, Zhou J, et al. An epidemiologic study of posttraumatic stress disorder in flood victims in Hunan China. *Can J Psychiatry*. 2006;51(6):350–354.
- Brewin CR, Andrews B, Valentine JD. Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *J Consult Clin Psychol*. 2000;68(5):748–766.
- Ozer EJ, Best SR, Lipsey TL, et al. Predictors of posttraumatic stress disorder and symptoms in adults: a meta-analysis. *Psychol Bull*. 2003;129(1):52–73.
- Müller J, Maercker A. Disclosure und wahrgenommene gesellschaftliche Wertschätzung als Opfer als Prädiktoren von PTBS bei Kriminalitätsoffern. *Z Klin Psychol Psychother*. 2006;35(1):49–58.
- Ullman SE. Social reactions to child sexual abuse disclosures: a critical review. *J Child Sex Abus*. 2003;12:89–112.
- Maercker A, Müller J. Social acknowledgment as a victim or survivor: a scale to measure a recovery factor of PTSD. *J Trauma Stress*. 2004;17(4):345–351.
- Jones B, Müller J, Maercker A. Trauma and posttraumatic reactions in German development aid workers: prevalences and relationship to social acknowledgment. *Int J Soc Psychiatry*. 2006;52(2):91–100.
- Pennebaker JW, Kiecolt-Glaser JK, Glaser R. Disclosure of traumas and immune function: health implications for psychotherapy. *J Consult Clin Psychol*. 1988;56(2):239–245.
- Pennebaker JW, Traue HC. Inhibition and psychosomatic processes. In: Traue HC, Pennebaker JW, editors. *Emotion, inhibition, and health*. Göttingen (DE): Hogrefe & Huber; 1993. p 146–163.
- Richards JM, Beal WE, Seagal JD, et al. Effects of disclosure of traumatic events on illness behavior among psychiatric prison inmates. *J Abnorm Psychol*. 2000;109(1):156–160.
- Brown EJ, Heimberg RG. Effects of writing about rape: evaluating Pennebaker's paradigm with a severe trauma. *J Trauma Stress*. 2001;14:781–790.
- Batten SV, Follette VM, Rasmussen Hall ML, et al. Physical and psychological consequences of written disclosure among sexual abuse survivors. *Behav Ther*. 2002;33:107–122.
- Gidron Y, Peri T, Connolly JF, et al. Written disclosure in posttraumatic stress disorder: is it beneficial for the patient? *J Nerv Ment Dis*. 1996;184(8):505–507.
- Müller J, Moergeli HP, Maercker A. Disclosure and social acknowledgment as predictors of recovery from posttraumatic stress: a longitudinal study in crime victims. *Can J Psychiatry*. 2008;53(3):160–168.
- Müller J, Maercker A. Kommunikationsverhalten nach Traumatisierung. Vergleich von Fragebogen- und Textanalysevariablen. *Handlung, Kultur, Interpretation*. 2002;11(2):308–333.
- Bennett-Herbert TL, Dunkel-Schetter C. Negative social reactions to victims: an overview of responses and their determinants. In: Montada L, Filip SH, Lerner MJ, editors. *Life crises and experiences of loss in adulthood*. Hillsdale (NJ): Lawrence Erlbaum Associates; 1992.
- Ullman SE, Filipas HH. Gender differences in social reactions to abuse disclosures, post-abuse coping and PTSD of child sexual abuse survivors. *Child Abuse Negl*. 2005;29(2005):767–782.
- Cordova MJ, Cunningham LL, Carlson CR, et al. Social constraints, cognitive processing, and adjustment to breast cancer. *J Consult Clin Psychol*. 2001;69(4):706–711.
- Ullman SE, Filipas HH. Predictors of PTSD symptom severity and social reactions in sexual assault victims. *J Trauma Stress*. 2001;14(2):369–389.
- Southwick SM, Morgan CA 3rd, Rosenberg R. Social sharing of Gulf War experiences: association with trauma-related psychological symptoms. *J Nerv Ment Dis*. 2000;188(10):695–700.
- Solomon Z. PTSD and social functioning. A three year prospective study. *Soc Psychiatry Psychiatr Epidemiol*. 1989;24(3):127–133.
- Fontana A, Rosenheck R. Traumatic war stressors and psychiatric symptoms among World War II, Korean, and Vietnam War veterans. *Psychol Aging*. 1994;9(1):27–33.
- Heine SJ, Lehman DR, Markus HR, et al. Is there a universal need for positive self-regard? *Psychol Rev*. 1999;106(4):766–794.
- Meston CM, Heiman JR, Trapnell PD, et al. Ethnicity, desirable responding, and self-reports of abuse: a comparison of European- and Asian-ancestry undergraduates. *J Consult Clin Psychol*. 1999;67(1):139–144.
- Triandis HC. *Individualism and collectivism*. Boulder (CO): Westview Press; 1995.
- Kitayama S, Mesquita B, Karasawa M. Cultural affordances and emotional experience: socially engaging and disengaging emotions in Japan and the United States. *J Pers Soc Psychol*. 2006;91(5):890–903.
- Uchida Y, Kitayama S, Mesquita B, et al. Is perceived emotional support beneficial? Well-being and health in independent and interdependent cultures. *Pers Soc Psychol Bull*. 2008;34(6):741–754.
- Jones EG, Farina A, Hastorf AH, et al. *Social stigma: the psychology of marked relationships*. New York (NY): Freeman; 1984.

38. Tang CS. Childhood experiences of sexual abuse among Hong Kong Chinese college students. *Child Abuse Negl.* 2002;26:23–37.
39. Futa KT, Hsu E, Hansen D. Child sexual abuse in Asian American families: an examination of cultural factors that influence prevalence, identification and treatment. *Clin Psychol.* 2001;8:189–209.
40. Hussain R, Khan A. Women's perceptions and experiences of sexual violence in marital relationships and its effect on reproductive health. *Health Care Women Int.* 2008;29(5):468–483.
41. Back SE, Jackson JL, Fitzgerald M, et al. Child sexual and physical abuse among college students in Singapore and the United States. *Child Abuse Negl.* 2003;27(11):1259–1275.
42. Orth U, Maercker A. Do trials of perpetrators retraumatize crime victims? *J Interpers Violence.* 2004;19(2):212–227.
43. Weiss DS, Marmar CR. The Impact of Event Scale—Revised. In: Wilson JP, Keane TM, editors. *Assessing psychological trauma and PTSD.* New York (NY): Guilford Press; 1997. p 399–411.
44. Maercker A, Schützwohl M. Erfassung von psychischen Belastungsfolgen: Die Impact of Event Skala—revidierte version (IES-R). *Diagnostica.* 1998;44(3):130–141.
45. Wu KK, Chan KS. The development of the Chinese version of Impact of Event Scale—Revised (CIES-R). *Soc Psychiatry Psychiatr Epidemiol.* 2003;38(2):94–98.
46. Wu JJ, Chan KS. The development of the Chinese version of Impact of Event Scale—Revised (CIES-R). *Soc Psychiatry Psychiatr Epidemiol.* 2003;38(2):94–98.
47. Maercker A, Beauducel A, Schützwohl M. Trauma severity and initial reactions as precipitating factors for posttraumatic stress symptoms and chronic dissociation in former political prisoners. *J Trauma Stress.* 2000;13(4):651–660.
48. Müller J, Beauducel A, Raschka J, et al. Kommunikationsverhalten nach politischer Haft in der DDR. Entwicklung eines Fragebogens zum Offenlegen der Traumaerfahrungen. *Z Polit Psychol.* 2000;4:413–427.
49. Richter D, Berger K. Post-traumatic stress disorder following patient assaults among staff members of mental health hospitals: a prospective longitudinal study. *BMC Psychiatry.* 2006;6(15):1–4.
50. Huang G, Zhang Y, Momartin S, et al. Prevalence and characteristics of trauma and posttraumatic stress disorder in female prisoners in China. *Compr Psychiatry.* 2006;47(1):20–29.
51. Liu A, Tan H, Zhou J, et al. An epidemiologic study of posttraumatic stress disorder in flood victims in Hunan China. *Can J Psychiatry.* 2006;51(6):350–354.
52. Galea S, Nandi A, Vlahov D. The epidemiology of post-traumatic stress disorder after disasters. *Epidemiol Rev.* 2005;27:78–91.
53. Maercker A, Mohiyeddini C, Müller M, et al. Traditional versus modern values, self-perceived interpersonal factors, and posttraumatic stress in Chinese and German crime victims. *Psychol Psychother.* 2009;82(Pt 2):219–232.

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Résumé : Les attitudes face à la divulgation et la reconnaissance sociale comme prédicteurs de la gravité des symptômes du trouble de stress post-traumatique chez les victimes de crime chinoises et allemandes

Objectif : Il n'existe que de rares données qui comparent les aspects transculturels de la traumatisation civile. Nous avons comparé les taux de prévalence du trouble de stress post-traumatique (TSPT) chez les victimes de crime allemandes et chinoises, et recherché l'effet transculturel de 2 prédicteurs interpersonnels.

Méthode : Les victimes de crime adultes allemandes ($n = 151$) et chinoises ($n = 144$) ont été évaluées plusieurs mois après le crime. Des questionnaires parallèles ont évalué la gravité des symptômes du TSPT, les attitudes face à la divulgation, la reconnaissance sociale, les caractéristiques démographiques et du crime.

Résultats : Les participants allemands et chinois différaient significativement dans la gravité de leurs symptômes de TSPT. Cependant, dans les deux échantillons, les attitudes face à la divulgation et la reconnaissance sociale prédisaient la gravité des symptômes de TSPT avec une force semblable, en plus des effets d'autres prédicteurs du TSPT.

Conclusions : Les résultats suggèrent que les variables interpersonnelles sont des prédicteurs de la gravité des symptômes de TSPT dans les deux cultures, et qu'elles devraient être incluses dans les modèles étiologiques du TSPT.