Assault-related Factors and Trauma-related Cognitions Associated with Post-traumatic Stress Symptoms in High-distress and Low-distress Korean Female Victims of Sexual Assault

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ABSTRACT

Background: Information about the factors involved in the progress of both high distressed and low distressed victims in the early days after a sexual assault are needed to provide effective intervention for victims of sexual assault. In this study, we examined the relationship among posttraumatic stress disorder (PTSD) symptoms, assault-related factors and trauma-related cognition in Korean female victims of sexual assault.

Methods: For this study, we retrospectively investigated the records of 94 female victims from the Sunflower Center for Women and Children Victims of Violence at the Ajou University Hospital in Korea. Demographic characteristics and the features of the sexual assault, post-traumatic stress symptoms, and trauma-related cognition were obtained from data recorded at the initial assessment. One month after the initial assessment, victims were contacted by telephone and their PTSD symptom severity was re-evaluated. The sample of 94 participants were divided into two groups depending on the PTSD symptom scale scores at initial assessment: High-distress group and Low-distress group.

Results: Repeated-measured analyses of variance revealed that the high-distress group showed a decrease in PTSD symptom severity over the month, while the low-distress group did not show significant change of PTSD symptom severity. In correlation analysis, negative thoughts and beliefs about the assault were strongly correlated with PTSD symptom severity one month later in both the low-distress and high-distress groups.

Conclusion: Our results suggest that trauma-related cognitions seem to play an important role in the maintenance of PTSD both of high-distress and low-distress groups, and that effective intervention will need to address these cognitive factors.

Keywords: Sexual Assault; Posttraumatic Stress Disorder; Cognitions; Assault Characteristic; Progress
INTRODUCTION

Posttraumatic stress disorder (PTSD) is one of the most common consequences of sexual assault with one-third of raped women meeting the diagnostic criteria.\(^1\) Rape and sexual assault are reported as two of the three traumas accounting for the highest proportions of PTSD worldwide.\(^2\) In a prospective study with rape victims, PTSD characterized 94% of victims within 2 weeks postassault and 47% of victims within 3 months postassault.\(^3\) In a pilot study in Korea, 68% of female victims of sexual assault met diagnostic criteria for PTSD after 1 to 2 months following the trauma.\(^4\) A number of studies have examined correlates of the PTSD symptomatology in sexual assault victims to identify those survivors most likely to develop PTSD after the traumatic event. These studies have presented that various factors including demographic background, traumatic event characteristics, and postassault victims’ responses may be predictive of PTSD. The ultimate goal of these numerous studies is to provide effective initial intervention for victims of sexual assaults by detecting the threat early.

Recent research has reported individual differences in how people respond to trauma.\(^5,6\) Some people after trauma experience minimal emotional distress and transient disruptions in their ability to function, while others suffer more intense pain that lasts longer.\(^5\) Researchers have suggested that the ability to buffer and avoid the negative effects of sexual assault, termed resilience, may lie in specific social and cognitive protective factors.\(^7,8\) Longitudinal studies generally focused on people highly distressed by sexual assault,\(^3,4\) while most researchers have not shown interest in prognosis for the low distressed people. Victims of sexual assault need suitable intervention even if they don’t seem to be suffering from the trauma. Therefore, information about the factors involved in the progress for both high distressed and low distressed victims in the early days from the trauma is requested to provide appropriate intervention for victims of sexual assault.

Assault characteristics associated with PTSD symptoms include perceived life threat, substantial use of verbal and physical force and completed rapes.\(^9-11\) The literature of assault related risk factors shows highly discrepant results.\(^12\) It has been found that rape victims of a stranger have an increased risk of PTSD compared with victims of other offenders,\(^13,14\) whereas others have found that rape victims of current partners have the highest risk of developing PTSD.\(^15\)

Post-traumatic negative cognition plays an important role in the development and persistence of PTSD in the traumatized victims.\(^16\) Ehlers and Clark\(^17\) also proposed that negative appraisals of traumatic events increase the fear, which makes PTSD symptoms and anxiety persist. Thoughts about one’s perceived weaknesses and the dangers of the world affect the development of PTSD in rape victims.\(^18\) Similarly, negative thoughts about the world and one’s incompetence mediate the development of PTSD after sexual assault.\(^19,20\) Foa’s and Ehlers-Clark’s groups have demonstrated the importance of post-traumatic cognitions related to persistence and reduction of PTSD symptomatology.\(^16,21,22\) However, how post-traumatic cognition contributes to the PTSD according to the initial response to trauma remains unclear.

The purpose of the current study was to examine the short-term progress of PTSD symptoms in female victims of sexual trauma. We hypothesized that initially low-distressed victims would show a different course of PTSD symptomatology from initially high-distressed victims. Moreover, the study aimed to investigate the relationships between assault-related factors, trauma-related cognitions, and PTSD severity.
METHODS

Participants and procedure
Data were obtained from the Sunflower Center of Southern Gyeonggi for Women and Children Victims of Violence at the Ajou University Hospital in Korea. The Sunflower Center is a government-sponsored center that provides victims of violence with medical care, social service, psychological support and criminal investigative services. At registration, victims signed consent forms for assessment. For this study, we investigated the records of 94 female victims who visited the Sunflower Center of Southern Gyeonggi for Women and Children Victims of Violence to receive services following sexual violence between December 2014 and November 2016.

Demographic characteristics and the features of the sexual violence were obtained from data recorded at the initial assessment. At the initial assessment, victims completed a self-report questionnaire to examine the severity of post-traumatic stress symptoms, and trauma-related cognition. One month after the initial assessment, victims were contacted by telephone and re-evaluated for the severity of post-traumatic stress symptoms.

Measures
Background characteristics of participants and the sexual violence were obtained at the initial assessment. Assault-related factors including type of sexual assault, relationship with the perpetrator, repetitions of sexual assault, violence in the assault and photographs taken during the assault were investigated.

At the initial assessment, victims completed the post-traumatic cognitions inventory (PTCI) to assess trauma-related thoughts and beliefs. The PTCI consists of 33 items and uses. The PTCI produces three subscores based on the mean of items for each subscale: negative cognitions about the self (negative-self, 21 items), negative cognitions about the world (negative-world, 7 items), and self-blame for trauma (self-blame, 5 items). The PTCI subscales have good test-retest reliability (0.75–0.89), good internal consistency (Cronbach’s α = 0.86–0.97), and moderate-to-high correlations with post-traumatic stress symptom severity (Foa et al.20). The PTCI items were translated into Korean by the first author, and subsequently reviewed by a fluent bilingual psychiatrist with a PhD in psychiatry.23 Cronbach’s α in this study was 0.96.

The PTSD symptoms scale, self-report version (PSS-SR), was administered at the initial assessment and 1 month later to assess the severity of post-traumatic stress symptoms. The 17 items of PSS-SR correspond to the Post-traumatic stress disorder symptoms listed in the Criteria B items in Diagnostic and Statistical Manual of Mental Disorder 4th edition.24 The PSS-SR has an acceptable-to-good reliability and validity.19 Participants defined as belonging to the high-distress group were those participants having a high score on the PSS-SR at the initial assessment, i.e., scores higher than 20, cut-off score of PSS-SR.25 Participants having a score lower than 20 on the PSS-SR at the initial assessment were assigned to the low-distress group.

Data analysis strategy
In this study, the sample of 94 participants were divided into two groups depending on the PSS-SR scores at initial assessment: High-distress group and Low-distress group. Categorical variables were compared with the χ² test, and continuous variables were
compared with the independent t-test. Repeated-measures analyses of variance (ANOVA) was used to determine changes across time points. Correlations between trauma-related cognition and PTSD symptom severity were calculated using Pearson’s statistic. Stepwise multiple regression analysis was used to examine assault-related factors and trauma-related cognitions predicting PTSD symptom severity after 1 month. Both of the correlation and regression analyses were conducted separately for each group. All statistical tests were two-sided. Statistical analysis PASW statistics software version 18.0 (SPSS Inc., Chicago, IL, USA) was used for statistical analyses.

Ethics statement
All procedures of the present study were reviewed by the Institutional Review Board (IRB) of Ajou University Medical Center (IRB No. AJIRB-SBR-SUR-15-081). Individual informed consent was waived due to retrospective design of the study.

RESULTS
A total of 510 females reporting sexual victimization visited the Center between December 2014 and November 2016. Among these victim records, 94 women had completed the psychological measures (PTCI, PSS-SR, and follow-up PSS-SR by telephone interview) and recorded assault characteristics (type of sexual assault, type of perpetuator, repeated sexual assaults, violence and taken photographs during the assault) without missing data.

The background characteristics of the participants are shown in Table 1. The mean age of the participants was 24.78 ± 6.89 years at the time of the initial assessment. Among the 94 female victims included in the analysis, 71 (71.5%) were rape victims and 59 (62.8%) were victimized by acquaintances. Twenty-two (23.4%) victims experienced violence during the assault and photographs were taken during the assault in 7 cases (7.5%). Eighteen (19.2%) have experienced sexual assaults more than once. Comparisons revealed that the type of sexual assault, experiencing violence during the assault, having photographs taken during the assault, and repeated sexual assaults were not significantly different between the low-distress and high-distress groups. Only type of perpetuator showed a significant difference between the groups, i.e., the high-distress group victims were more likely to have been victimized by acquaintances.

The mean PSS-SR scores at each time point are presented in Table 2. Repeated-measures ANOVAs were conducted with time (initial vs. 1 month follow-up) as the within-group factor and

| Table 1. Background characteristics of the participants |
|-------------------------------------------------------|
| Characteristics                                      | Total (n = 94) | Low-distress (n = 26) | High-distress (n = 68) | P value |
| Age, yr                                               | 24.78 ± 6.89   | 24.69 ± 8.74          | 24.81 ± 6.11           | 0.942   |
| Type of sexual assault                                |               |                       |                         | 0.465   |
| Rape                                                  | 71 (71.53)    | 21 (80.77)            | 50 (73.53)             |        |
| Other than rape                                       | 23 (24.47)    | 5 (19.23)             | 18 (26.47)             |        |
| Type of perpetrator                                   |               |                       |                         | 0.011   |
| Stranger                                              | 35 (37.23)    | 15 (57.69)            | 20 (29.41)             |        |
| Acquaintance                                          | 59 (62.77)    | 11 (42.31)            | 48 (70.59)             |        |
| Experienced violence during the assault               | 22 (23.40)    | 6 (23.08)             | 16 (23.53)             | 0.963   |
| Photographs taken during the assault                  | 7 (7.45)      | 3 (11.54)             | 4 (5.88)               | 0.350   |
| Repeated sexual assaults                              | 18 (19.15)    | 4 (15.38)             | 14 (20.59)             | 0.566   |

Data are presented as mean ± standard deviation or number (%).
group (Low-distress vs. High-distress) as the between-group factor. A main effect for time was observed with PSS-SR reexperience scores ($F_{[1, 92]} = 4.112$, $P = 0.045$). A significant interaction between time and group was observed with PSS-SR total ($F_{[1, 92]} = 10.062$, $P = 0.002$), reexperience ($F_{[1, 92]} = 5.767$, $P = 0.018$), avoidance ($F_{[1, 92]} = 8.530$, $P = 0.004$), and arousal scores ($F_{[1, 92]} = 4.675$, $P = 0.033$).

PTCI total score ($r = 0.626$, $P = 0.001$), scores of negative-self subscale ($r = 0.667$, $P < 0.000$), negative-world subscale ($r = 0.400$, $P = 0.043$), and self-blame subscale ($r = 0.464$, $P = 0.017$) showed a statistically significant correlation with follow-up PSS-SR score in the low-distress group. In the high-distress group, PTCI total score ($r = 0.411$, $P < 0.000$), negative-self ($r = 0.380$, $P = 0.001$), and negative-world ($r = 0.509$, $P < 0.000$) showed a statistically significant correlation with follow-up PSS-SR score ($Table 3$).

The PSS-SR score at the initial assessment, PTCI subscale scores and characteristics of sexual assault were included as independent variables in stepwise multiple regression. Stepwise multiple regression analysis showed that PSS-SR score at the initial assessment ($\beta = 0.318$, $P = 0.009$), negative-world score of PTCI ($\beta = 0.307$, $P = 0.013$) and type of sexual assault ($\beta = 0.217$, $P = 0.037$) predicted PTSD symptoms severity one month later in the high-distress group. The regression model, factoring in PSS-SR score at the initial assessment, negative-world, and type of sexual assault, showed a 36.1% explanatory power regarding the PSS-SR score at the 1 month follow-up. In the low-distress group, only negative-self score of PTCI ($\beta = 0.667$, $P < 0.000$) predicted PTSD symptoms severity at the 1 month follow-up with 44.6% explanatory power ($Table 4$).

**Table 2.** Severity of post-traumatic stress symptoms at each time point

| Symptom scales | Total (n = 94) | Low-distress (n = 26) | High-distress (n = 68) | Statistics | F |
|----------------|----------------|----------------------|------------------------|------------|---|
| PSS-SR total   |                |                      |                        |            |   |
| Initial assessment | 27.94 (12.52) | 11.50 (5.71)        | 34.22 (7.78)          | Group      | 116.943* |
| 1 month follow-up | 24.53 (12.67) | 13.23 (10.15)       | 28.85 (10.77)         | Time × group | 10.062* |
| PSS-SR reexperience |            |                      |                        |            |   |
| Initial assessment | 8.29 (3.85)  | 3.85 (2.11)         | 9.99 (2.88)           | Group      | 74.701*  |
| 1 month follow-up | 7.01 (3.98)  | 4.00 (3.46)        | 8.16 (3.56)           | Time × group | 5.767*  |
| PSS-SR avoidance |                |                      |                        |            |   |
| Initial assessment | 10.87 (5.76) | 3.88 (2.66)        | 13.54 (4.15)          | Group      | 102.336* |
| 1 month follow-up | 9.39 (5.40)  | 4.81 (3.91)        | 11.15 (4.85)          | Time × group | 8.530*  |
| PSS-SR arousal   |                |                      |                        |            |   |
| Initial assessment | 8.78 (4.27)  | 3.77 (2.27)        | 10.69 (3.15)          | Group      | 73.981*  |
| 1 month follow-up | 8.13 (4.63)  | 4.42 (3.98)        | 9.54 (4.07)           | Time × group | 4.675*  |

Values are presented as number (%).
PSS-SR = posttraumatic stress disorder symptoms scale, self-report version.

*P < 0.01; **P < 0.05.

| PTCI | PSS-SR score at the 1 month follow-up |
|------|--------------------------------------|
|      | Low-distress (n = 26) | High-distress (n = 68) |
| Negative-self | 0.667* | 0.380* |
| Negative-world | 0.400* | 0.509* |
| Self-blame | 0.464* | 0.084 |
| Total score | 0.626* | 0.411* |

PSS-SR = posttraumatic stress disorder symptoms scale, self-report version, PTCI = post-traumatic cognitions inventory.

*P < 0.01; **P < 0.05.
DISCUSSION

In consistency with prior studies, we found a high prevalence of posttraumatic symptomatology in the sample. At the initial assessment, 68 (72.3%) victims reported significant posttraumatic stress symptoms, higher than the cut-off score of PSS-SR. This study investigated the assault-related risk factors of PTSD symptoms in initially high-distress and low-distress female victims of sexual trauma. Comparison analysis revealed that most of the assault-related factors including type of sexual assault, experiencing violence during the assault, having photographs taken during the assault, and repeated sexual assaults were not significantly different between the high-distress and low-distress groups depending on the PSS-SR scores at initial assessment. These results were different from the findings of previous studies which reported that completed rape, physical injury, and life threat related to PTSD in female crime victims. These discrepancies may be due to the small sample size of “other than rape” victims (23%), violence (22%), taken photographs (7%), and repeated sexual assaults (18%) in this sample and a less powerful single-item, dichotomous measuring. Only victims of acquaintance rapes showed higher PTSD symptoms compared with victims of strangers in this study. Similarly, Temple et al. reported victims of partners have the highest risk of developing PTSD. However, some studies have not found any association between differences in victim-offender relationships and PTSD, while others reported stranger rapes as a risk factor of PTSD. Although quite a few studies have been conducted trying to clarify the relationship between assault related factors and the PTSD symptom severity after rape, the results have been highly discrepant. Thus, future studies should be designed with comprehensive information about traumatic events to fully understand the effects of assault characteristics to post assault sequelae.

We compared the process of PTSD symptoms between the low-distress and high-distress group. Repeated-measures ANOVA revealed significant interaction between time and group was observed with PTSD symptoms. Concretely, the high-distress group showed that PTSD symptom severity decreased over the month. The low-distress group did not show significant change in PTSD symptom severity, but rather PTSD symptom severity was slightly increased over the month even though not statistically significant. Recent theories have proposed distinct trajectories of psychological health following traumatic stress: resilience, recovery, chronic impairment, and resistance trajectories. Several studies have supported these

Table 4. Stepwise multiple regression analysis on PTSD symptom severity at 1 month follow-up

| Variables                      | PSS-SR at the 1 month follow-up | PSS-SR at the initial assessment | Type of sexual assault | Type of perpetrator | Experienced violence during the assault | Photographs taken during the assault | Repetition of sexual assault |
|--------------------------------|---------------------------------|----------------------------------|------------------------|---------------------|----------------------------------------|------------------------------------|-----------------------------|
|                                | Low-distress (n = 26) | High-distress (n = 68)               | Low-distress (n = 26) | High-distress (n = 68) | Low-distress (n = 26) | High-distress (n = 68) | Low-distress (n = 26) | High-distress (n = 68) |
|                                | Beta  | P | R² | Adjusted R² | Beta  | P | R² | Adjusted R² | Beta  | P | R² | Adjusted R² |
| PSS-SR at the initial assessment | 0.165 | 19.282a | 0.446 | 0.422 | 0.318a | 12.076a | 0.361 | 0.332 |
| Negative self                  | 0.667a | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| Negative world                 | -0.067 | 0.307b | 0.307b | 0.307b | 0.307b | 0.307b | 0.307b | 0.307b |
| Self-blame                     | -0.219 | -0.142 | -0.142 | -0.142 | -0.142 | -0.142 | -0.142 | -0.142 |
| Type of sexual assault         | 0.007 | 0.217a | 0.217a | 0.217a | 0.217a | 0.217a | 0.217a | 0.217a |
| Rape                           | 0.009 | -0.042 | -0.042 | -0.042 | -0.042 | -0.042 | -0.042 | -0.042 |
| Experienced violence during the assault | 0.043 | 0.038 | 0.038 | 0.038 | 0.038 | 0.038 | 0.038 | 0.038 |
| Photographs taken during the assault | 0.151 | 0.174 | 0.174 | 0.174 | 0.174 | 0.174 | 0.174 | 0.174 |
| Repetition of sexual assault   | 0.253 | -0.112 | -0.112 | -0.112 | -0.112 | -0.112 | -0.112 | -0.112 |

PSS-SR = posttraumatic stress disorder symptoms scale, self-report version, PTCI = post-traumatic cognitions inventory; PTSD = posttraumatic stress disorder.

*P < 0.01; **P < 0.001.
trajectories following various traumas including serious illness or severe injury, deployment to a peacekeeping mission, and mass disaster.\textsuperscript{29-32} We also need to consider delayed-onset PTSD. Delayed-onset PTSD, diagnosed more than 6 months after the traumatic event, were observed in 25\% of all PTSD cases, but few developed the disorder without early sub-threshold PTSD symptoms.\textsuperscript{33} However, Steenkamp et al.\textsuperscript{32} identified distinct trajectories of PTSD symptomatology during the early aftermath of sexual assault and suggested trajectories of mental health in victims of sexual assault are different from other traumas. Because sexual assaults are severe interpersonal trauma involving marked initial emotional chaos, further studies about trajectories following sexual trauma are needed.

This study also investigated if assault-related factors and trauma-related cognitions were associated with later PTSD symptoms in female sexual assault victims in a relatively short-term follow-up period. In correlation analysis, negative cognitions about the assault were strongly correlated with PTSD symptom severity one month later in both of low-distress and high-distress groups. In particular, negative cognitions about the self at the initial assessment predicted the PTSD symptoms one month later with a high explanatory power (42.2\%) in the low-distress group. In the high-distress group, PTSD symptoms at the initial assessment, negative cognitions about the world, and type of sexual assault, i.e., rape, predicted the PTSD symptoms one month later with a 33.2\% explanatory power. These results were comparable to those of a prospective study that reported that dysfunctional cognitions concerning sexual assault seem to strongly affect the maintenance and severity of PTSD symptoms.\textsuperscript{4,16,34} This study confirmed the role of negative appraisals of trauma in maintaining PTSD symptomatology. Dunmore et al.\textsuperscript{35} have proposed that the role of cognitive factors in the maintenance of PTSD has been a particularly robust finding with victims of assault. The predictive power of these trauma-related cognitions suggests the effectiveness of cognitive therapeutic intervention for victims of sexual assault both of high-distressed and low-distressed people. Specifically, sense of psychological autonomy seems to play an important role in the low-distress group, and confidence in the world is significant in the high-distress group for recovery from the trauma sequelae.

Our findings should be interpreted with some caveats. First, only 18.4\% of the victimized women were eligible to be included in the analysis, so these results must be viewed very cautiously. This limitation suggests that systematic data gaining is needed to yield comprehensive and representative results. Second, current results may have limited generalizability because they reflect responses of sexually traumatized female subjects, which are likely to differ from other trauma subjects or male subjects. However, homogeneity of the trauma sample in this study is a strength that distinguished it from previous studies. Second, the findings on posttraumatic cognition and PTSD symptom severity relied on self-report questionnaires. Thus, person-to-person interviews with structured formats should be featured in a future study.

Despite these limitations, strengths of this study are that we investigated the relationship among assault-related factors, trauma-related cognitions in high-distress and low-distress female victims of sexual violence at the early stage of trauma, and PTSD symptoms one month later after the initial assessment. In this study, the results show that the low-distress group and high-distress group show different progresses of PTSD symptoms at short-term follow-up, and that trauma-related cognitions are more important predictors of PTSD severity one month later rather than assault-related factors. Our results suggest that cognitive appraisal regarding the dangerousness of the world is crucial in the maintenance of PTSD in high-distressed victims at the early trauma phase, while cognitive appraisal concerning psychological autonomy seems to play an important role in initially low-distressed victims. In
conclusion, our results highlight the importance of research into PTSD risk factors as well as evidence-based treatment for victims of sexual assault.

REFERENCES

1. Kilpatrick DG, Edmunds CN, Seymour AK. Rape in America: a Report to the Nation. Arlington, VA: National Victim Center and Medical University of South Carolina; 1992.

2. Kessler RC, Rose S, Koenen KC, Karam EG, Stang PE, Stein DJ, et al. How well can post-traumatic stress disorder be predicted from pre-trauma risk factors? An exploratory study in the WHO world mental health surveys. World Psychiatry 2014;13(3):265-74.

3. Rothbaum BO, Foa EB, Riggs DS, Murdock T, Walsh W. A prospective examination of post-traumatic stress disorder in rape victims. J Trauma Stress 1992;5(3):455-75.

4. Shin KM, Cho SM, Lee SH, Chung YK. A pilot prospective study of the relationship among cognitive factors, shame, and guilt proneness on posttraumatic stress disorder symptoms in female victims of sexual violence. J Korean Med Sci 2014;29(6):831-6.

5. Bonanno GA. Loss, trauma, and human resilience: have we underestimated the human capacity to thrive after extremely aversive events? Am Psychol 2004;59(1):20-8.

6. Layne CM, Warren JS, Watson PJ, Shalev AY. Risk, vulnerability, resistance, and resilience: toward an integrative conceptualization of post-traumatic adaptation. In: Friedman MJ, Keane TM, Resick PA, editors. Handbook of PTSD: Science and Practice. New York, NY: Guilford Press; 2007, 497-520.

7. Kia-Keating M, Grossman FK, Sorsoli L, Epstein M. Containing and resisting masculinity: narratives of renegotiation among resilient male survivors of childhood sexual abuse. Psychol Men Masc 2005;6(3):169-85.

8. Reich JW, Zautra AJ, Hall J. Handbook of Adult Resilience. New York, NY: Guilford Press; 2010.

9. Resnick HS, Kilpatrick DG, Dansky BS, Saunders BE, Best CL. Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. J Consult Clin Psychol 1993;61(6):984-91.

10. Bennice JA, Resick PA, Mechanic M, Astin M. The relative effects of intimate partner physical and sexual violence on post-traumatic stress disorder symptomatology. Violence Vict 2003;18(1):87-94.

11. Ullman SE, Filipas HH, Townsend SM, Starzynski LL. Psychosocial correlates of PTSD symptom severity in sexual assault survivors. J Trauma Stress 2007;20(5):821-31.

12. Tiilhonen Möller A, Bäckström T, Söndergaard HP, Helström L. Identifying risk factors for PTSD in women seeking medical help after rape. PLoS One 2014;9(10):e111136.

13. Bownes IT, O’Gorman EC, Sayers A. Assault characteristics and posttraumatic stress disorder in rape victims. Acta Psychiatr Scand 1991;83(1):27-30.

14. Ullman SE, Filipas HH, Townsend SM, Starzynski LL. The role of victim-offender relationship in women’s sexual assault experiences. J Interpers Violence 2006;21(6):798-819.

15. Temple JR, Weston R, Rodriguez BF, Marshall LL. Differing effects of partner and nonpartner sexual assault on women’s mental health. Violence Against Women 2007;13(3):285-97.

16. Dunmore E, Clark DM, Ehlers A. A prospective investigation of the role of cognitive factors in persistent posttraumatic stress disorder (PTSD) after physical or sexual assault. Behav Res Ther 2001;39(9):1063-84.

17. Ehlers A, Clark DM. A cognitive model of posttraumatic stress disorder. Behav Res Ther 2000;38(4):319-45.

18. Resick PA, Schnicke M. Cognitive Processing Therapy for Rape Victims: a Treatment Manual. 4th ed. Thousand Oaks, CA: Sage; 1993.

https://jkms.org
https://doi.org/10.3346/jkms.2020.35.e144
19. Foa EB, Riggs DS, Dancu CV, Rothbaum BO. Reliability and validity of a brief instrument for assessing post-traumatic stress disorder. *J Trauma Stress* 1993;6(4):459-73.

20. Foa EB, Ehlers A, Clark DM, Tolin DF, Orsillo SM. The posttraumatic cognition inventory (PTCI): development and validation. *Psychother Assess* 1999;11(3):303-14.

21. Foa EB, Rothbaum BO. *Treating the Trauma of Rape: Cognitive Behavioral Therapy for PTSD*. New York, NY: Guilford Press; 2001

22. Foa EB, Rauch SA. Cognitive changes during prolonged exposure versus prolonged exposure plus cognitive restructuring in female assault survivors with posttraumatic stress disorder. *J Consult Clin Psychol* 2004;72(5):879-84.

23. Shin KM, Chung YK, Kim NH, Kim KA, Chang HY. Factor structure and reliability of the posttraumatic cognitions inventory in Korean female victims of sexual violence. *J Interpers Violence* 2017. DOI: 10.1177/0886260517696866.

24. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*. 4th ed. Washington, D.C.: American Psychiatric Association; 1994

25. Nam B, Kwon HI, Kwon JH. Psychometric qualities of the Korean version of the posttraumatic diagnosis scale. *Kor J Clin Psychol* 2010;29(1):147-67.

26. Kilpatrick DG, Saunders BE, Amick-McMullan A, Best CL, Veronen LJ, Resnick HS. Victim and crime factors associated with the development of crime-related post-traumatic stress disorder. *Behav Ther* 1989;20(2):199-214.

27. Zinzow HM, Resnick HS, McCauley JL, Amstadter AB, Ruggiero KJ, Kilpatrick DG. The role of rape tactics in risk for posttraumatic stress disorder and major depression: results from a national sample of college women. *Depress Anxiety* 2010;27(8):708-15.

28. Bownes IT, O’Gorman EC, Sayers A. Assault characteristics and posttraumatic stress disorder in rape victims. *Acta Psychiatr Scand* 1991;83(1):27-30.

29. Bonanno GA, Ho SM, Chan JC, Kwong RS, Cheung CK, Wong CP, et al. Psychological resilience and dysfunction among hospitalized survivors of the SARS epidemic in Hong Kong: a latent class approach. *Health Psychol* 2008;27(5):659-67.

30. deRoon-Cassini TA, Mancini AD, Rusch MD, Bonanno GA. Psychopathology and resilience following traumatic injury: a latent growth mixture model analysis. *Rehabil Psychol* 2010;55(1):1-11.

31. Norris FH, Tracy M, Galea S. Looking for resilience: understanding the longitudinal trajectories of responses to stress. *Soc Sci Med* 2009;68(12):2190-8.

32. Steenkamp MM, Dickstein BD, Salters-Pedneault K, Hofmann SG, Litz BT. Trajectories of PTSD symptoms following sexual assault: is resilience the modal outcome? *J Trauma Stress* 2012;25(4):469-74.

33. Smid GE, Mooreen TT, van der Mast RC, Gersons BP, Kleber RJ. Delayed posttraumatic stress disorder: systematic review, meta-analysis, and meta-regression analysis of prospective studies. *J Clin Psychiatry* 2009;70(11):1572-82.

34. Bennett SA, Beck JG, Clapp JD. Understanding the relationship between posttraumatic stress disorder and trauma cognitions: the impact of thought control strategies. *Behav Res Ther* 2009;47(12):1018-23.

35. Dunmore EC, Clark DM, Ehlers A. Cognitive factors in persistent versus recovered post-traumatic stress disorder after physical or sexual assault: a pilot study. *Behav Cogn Psychother* 1997;25(2):147-59.

36. Dunmore E, Clark DM, Ehlers A. Cognitive factors involved in the onset and maintenance of posttraumatic stress disorder (PTSD) after physical or sexual assault. *Behav Res Ther* 1999;37(9):809-29.