

# Symptoms of Posttraumatic Stress Disorder and Mental Health in Women Who Escaped Prostitution and Helping Activists in Shelters

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**Purpose:** This study compared the mental symptoms, especially symptoms of posttraumatic stress disorder (PTSD), of women who escaped prostitution, helping activists at shelters, and matched control subjects. **Materials and Methods:** We assessed 113 female ex-prostitutes who had been living at a shelter, 81 helping activists, and 65 control subjects using self-reporting questionnaires on demographic data, symptoms related to trauma and PTSD, stress-related reactions, and other mental health factors. **Results:** Female ex-prostitutes had significantly higher stress response, somatization, depression, fatigue, frustration, sleep, smoking and alcohol problems, and more frequent and serious PTSD symptoms than the other 2 groups. Helping activists also had significantly higher tension, sleep and smoking problems, and more frequent and serious PTSD symptoms than control subjects. **Conclusion:** These findings show that engagement in prostitution may increase the risks of exposure to violence, which may psychologically traumatize not only the prostitutes themselves but also the people who help them, and that the effects of the trauma last for a long time. Future research is needed to develop a method to assess specific factors that may contribute to vicarious trauma of prostitution, and protect field workers of prostitute victims from vicarious trauma.

**Key Words:** Posttraumatic stress disorder, prostitution, mental health

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## INTRODUCTION

Prostitution is the practice of engaging in sexual activities with an individual other than a spouse or friend in exchange for payment. Although prostitution is a global and deeply rooted social phenomenon, substantial disparity exists in its perception, depending on different social and cultural factors.<sup>1</sup> One view is to consider prostitution as a crime that induces violence; such as human trafficking, sexual abuse, rape, physical or verbal abuse, and racial discrimination, including serious violations of human rights.<sup>2,3</sup> The other extreme is to consider prostitution as a type of occupation in which the people involved are known as special workers, or "sex workers".<sup>4</sup> Despite the different points of view, a general consensus shows that women engaging in prostitution may be exposed to serious health risks,<sup>5-7</sup> such as sexually transmitted diseases and HIV.<sup>8-10</sup> In addition, studies on mental health problems suggest that depressive symptoms, anxiety, and psychological distress are higher in women in prostitution.<sup>5,11,12</sup>

To examine the mental health of women who are engaged in prostitution, the characteristics of the process of prostitution must be understood. According to previous studies, prostitution is essentially a multi-traumatic phenomenon.<sup>13</sup> First, women in prostitution may occasionally be involved in violence.<sup>3</sup> A recent study of 854 women in prostitution in 9 countries reported that 70 - 95% of the women experience physical assault, among which 60 - 75% had been raped.<sup>2</sup> Similarly in Korea, where prostitution is illegal, prostitutes experience sexual and physical violence.

In a study of 100 Korean women in prostitution, 96% of respondents answered that they experienced physical danger from weapons, physical violence, and injury from rape.<sup>14</sup>

Direct or indirect exposure to traumatic events in the course of prostitution is associated with psychological problems, including PTSD.<sup>15</sup> PTSD can result from extremely traumatic experiences that are direct, personal, and involve actual or threatened death or serious injury; threat to one's personal integrity, witnessing an event that involves death, injury, or threat to the physical integrity of another person, or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or close associate.<sup>16</sup> Several factors have been associated with an increased risk of developing PTSD following trauma exposure. These include background variables such as childhood trauma, comorbid mental health problems, family instability, and substance abuse.<sup>17,18</sup>

PTSD is a chronically disabling disorder associated with a large degree of morbidity. It rarely exists as a pure disorder and psychiatric comorbidities such as depression, alcohol abuse, substance abuse, other anxiety disorders, and suicidal tendencies worsen the burden of this disorder.<sup>19</sup> PTSD may be especially severe or long lasting when the stressor is planned and implemented by humans such as war, rape, incest, battery, or prostitution rather than natural catastrophes.<sup>3</sup>

Previous studies on prostitution have shown that prostitutes have a high prevalence of PTSD. Sixty-eight percent of 827 prostitutes in 9 countries met the criteria for lifetime diagnosis of PTSD.<sup>3</sup> The severity of PTSD symptoms in the participants in the above study was in the same range as treatment-seeking combat veterans,<sup>20,21</sup> battered women in protective shelters,<sup>22,23</sup> rape survivors,<sup>24</sup> and refugees.<sup>25</sup> A study performed in Korea found that 81% of women with a history of prostitution had symptoms of PTSD,<sup>14</sup> and research has suggested that prostitutes might have many risk factors for developing PTSD. Experiences of child sexual abuse are commonly reported among prostitutes. Additionally, violence related to prostitution and adult sexual assaults are prevalent.<sup>5,26</sup>

Exposure to violence through engagement in

prostitution may contribute to persistent and severe psychological problems in not only direct victims but also people in close proximity who can suffer from a range of emotional symptoms in spite of not being directly exposed to the traumatic events. This phenomenon has been described by a number of terms, including indirect traumatization, and has been documented among children of Holocaust survivors,<sup>27</sup> wives of combat soldiers,<sup>28</sup> and therapists who treat trauma victims.<sup>29</sup> A number of terms describe the negative impacts that result from working with traumatized victims, including "burnout", "compassion fatigue", "secondary traumatic stress", and more recently "vicarious traumatization".<sup>30</sup>

The term "vicarious trauma" was first used by McCann and Pearlman to describe pervasive changes occurring within clinicians or counselors over time from working with victims who experienced sexual trauma.<sup>31</sup> In our study, the term was used to describe secondary trauma and/or traumatic stress. The unique features of counseling for sexual violence that contribute to the development of vicarious traumatization result from empathically listening to victims as they share graphic details of their traumatic experiences and psychological pain. Compared to other fields, sexual violence counselors have a higher risk of experiencing vicarious trauma.<sup>31,32</sup> In a qualitative study of female counselors working with sexual assault victims, approximately 2/3 of participants reported intrusive imagery, dreams, and thoughts, including increased vigilance related to their safety, which decreases the level of trust in social interactions.<sup>33</sup> Counselors and researchers who experience these negative effects may stop working with traumatized individuals,<sup>34</sup> and the activists helping women exposed to trauma may experience more vicarious traumatic effects than workers in other fields. Therefore, recognizing and resolving vicarious traumatization may be crucial to the well-being of victims as well as counselors.<sup>35</sup>

Only a few studies examined PTSD symptoms or its associations in the mental health of prostitutes and control groups. In particular, a controlled comparison of vicarious traumatic effects among field workers who help female prostitutes has not yet been performed.

The present study compared the mental health status of former female prostitutes who live in shelters, field workers helping prostitutes in shelters, and a normal control group. In keeping with the literature, we examined the specific PTSD symptoms and other manifestations of distress and mental health among the 3 groups.

## MATERIALS AND METHODS

### Participants

We collected cross-sectional data using self-reporting questionnaires for 2 mos. Participants were former female prostitutes in shelters (ex-prostitutes), activists helping the ex-prostitutes in shelters (activists), and a control group. Ex-prostitutes and activists were recruited from 18 shelters with the support of the Bombit Women's Foundation that aids female prostitutes and workers who help prostitutes in Korea.

Female subjects age-matched to the ex-prostitutes were recruited from the surrounding community of each shelter as the control group. Data were collected from all 3 groups during the same period, and the subjects were notified orally and also in writing on the first page of the questionnaire that their answers would be used only for research purposes. Informed consent was obtained from all participants.

### Measures

The questionnaire consisted of demographic data, symptoms related to trauma and PTSD, stress-related reactions, and other mental health factors. Participants' PTSD symptoms were assessed using the Davidson Trauma Scale (DTS)<sup>36</sup> and the modified Impact of Event Scale-Revised (IES-R).<sup>37</sup> DTS is a self-rating scale that assesses the frequency and severity of 17 symptoms related to PTSD on a scale from 0 to 4. IES-R includes 22 items scored on a 5-point scale that is designed to determine the impact of traumatic events. Scale validation studies conducted in Korea have shown that the measures are all high in reliability and validity.<sup>38,39</sup> Stress reactions were assessed using the Stress Response Inventory

(SRI),<sup>40</sup> a 39-item self-rating instrument developed to assess the severity of stress responses, specifically on emotional, somatic, cognitive, and behavioral responses that occurred in the previous week. Stress reactions were rated on a Likert scale ranging from "not at all" (0), to "absolutely" (4). The rated items were factor-analyzed using 7 subscales: tension, aggression, somatization, anger, depression, fatigue, and frustration.

Other factors related to mental health were included in the questionnaires, such as sleep, personal past history, family history varying from psychiatric illness to physical illness, and smoking or alcohol drinking history. Questions on sleep involved the frequency of awakening, whether alcohol or drugs were used for the induction of sleep, quality of sleep, early morning awakening, and the restoration level of sleep.

### Analysis

The statistical significance of differences among the results of the demographic data of the 3 groups was assessed by chi-square test and one-way ANOVA analysis. One-way ANOVA was also performed to analyze the differences in the total score, subscale score of the DTS, IES-R and SRI, and the sleep-, drinking-, and smoking-related scores of the 3 groups. Duncan's multiple comparisons were then applied as post-hoc analysis to determine where the differences existed among the 3 groups. Pearson's correlation analysis was applied to determine which variables correlated significantly with symptoms of PTSD and mental health problems. The significance level was determined as  $p < 0.05$ .

## RESULTS

### Demographic characteristics

The demographic characteristics of the participants are presented in Table 1. A total of 113 ex-prostitutes (mean age,  $25.58 \pm 3.22$  yr), 81 activists (mean age,  $34.78 \pm 8.00$  yr), and 65 control subjects (mean age,  $24.81 \pm 5.22$  yr) participated. The ages of the ex-prostitute group and the control group were not significantly different. None-

**Table 1.** Demographic Data of Ex-Prostitutes, Activists, and Controls

Variable		Controls (n = 111)	Activists (n = 81)	Ex-prostitutes (n = 113)	p value
Age (yrs)*		25.58 ± 3.22	34.78 ± 8.00	24.81 ± 5.22	< 0.001
Marital status <sup>†</sup>	Single	60	49	102	< 0.001
	Married	5	25	0	
	Divorced	0	5	6	
	Separated	0	1	3	
	Widowed	0	0	1	
	Unanswered	0	1	1	
Education status <sup>†</sup>	Over college	45	60	8	< 0.001
	High school	20	14	53	
	Middle school	0	4	38	
	Primary school	0	0	13	
	Unanswered	0	3	1	
Socioeconomic status <sup>†</sup>	High	0	0	2	< 0.001
	Middle	56	38	20	
	Low	8	37	77	
	Unanswered	1	6	14	

\*One-way ANOVA with post-hoc analysis.

<sup>†</sup>Chi-square test.

theless, there was a significant age difference between the activists and the other 2 groups ( $p < 0.001$ ). In addition, there were significant differences in marital status, education level, and financial status among the 3 groups. Specifically, educational level and economic level were higher in the activists and the control group than in the ex-prostitute group.

The duration of prostitution of the ex-prostitutes was 5.8 yr on average and the initial age when they first engaged in prostitution ranged from 14 to 39 yr. The longer duration the women engaged in prostitution, the more diverse types of prostitution were reported. The primary type of prostitution was bar-associated (50%;  $N = 57$ ) followed by "ticket coffee shops" (selling tea with sexual activities), business of prostitution by employing women to visit customers for sex (38%;  $N = 43$ ), brothels (18%;  $N = 21$ ), massage parlors, and "Wonjo Kyojae" in Korean (The meaning is a date

helping each other. It usually happens between people not close in age, with a middle-aged man giving money to a young girl for sexual intercourse). The mean duration of residence in shelters for those who participated in the questionnaire was 8.7 mos.

### Symptoms related to PTSD

There was a significant difference in the frequency and severity of PTSD symptoms among the ex-prostitutes, activists, and control group. Ex-prostitutes showed more of the PTSD symptoms than the activists. The activists also showed higher scores than the control group (DTS frequency,  $F = 22.97$ ,  $p < 0.001$ ; DTS severity,  $F = 24.54$ ,  $p < 0.001$ ) (Table 2). Specifically, the subscales of the 3 cardinal symptoms (re-experience, avoidance, and hyperarousal) were significantly greater amongst the ex-prostitutes than the other 2 groups.

Between the 2 groups, the activists group showed greater scores in DTS than the control group. The mean scores of the IES-R among the ex-prostitutes and activists were significantly greater than the control group, but there were no statistically significant differences between the ex-prostitutes and activists.

### Mental health-related symptoms

As shown in Table 3, the 3 groups significantly differ in SRI scores. Activists showed greater scores in somatization, fatigue, depression, and frustration than the other 2 groups. Compared to the control group, the activists group also had a

**Table 2.** Symptoms Related to PTSD Among Ex-Prostitutes, Activists, and Controls

Variable*	mean $\pm$ SD			F	p value	
	Controls <sup>a</sup> (n = 65)	Activists <sup>b</sup> (n = 81)	Ex-prostitutes <sup>c</sup> (n = 113)			
DTS total	19.58 $\pm$ 14.92	35.04 $\pm$ 27.16	47.50 $\pm$ 27.58	25.20	< 0.001	a < b < c
DTS Severity	9.58 $\pm$ 8.30	17.34 $\pm$ 13.65	24.19 $\pm$ 14.90	24.54	< 0.001	a < b < c
Re-experience	2.46 $\pm$ 2.97	4.72 $\pm$ 4.87	7.70 $\pm$ 5.33	25.48	< 0.001	a < b < c
Avoidance	3.25 $\pm$ 2.97	5.85 $\pm$ 5.06	7.84 $\pm$ 6.19	15.47	< 0.001	a < b < c
Hyperarousal	3.88 $\pm$ 3.75	6.75 $\pm$ 5.29	9.01 $\pm$ 5.56	20.18	< 0.001	a < b < c
DTS Frequency	10.00 $\pm$ 7.02	17.90 $\pm$ 14.16	23.33 $\pm$ 13.92	22.97	< 0.001	a < b < c
Re-experience	2.48 $\pm$ 2.53	4.47 $\pm$ 4.81	6.33 $\pm$ 4.38	18.02	< 0.001	a < b < c
Avoidance	3.38 $\pm$ 2.64	6.25 $\pm$ 5.08	8.05 $\pm$ 6.11	16.94	< 0.001	a < b < c
Hyperarousal	4.14 $\pm$ 3.47	7.20 $\pm$ 5.14	9.15 $\pm$ 5.06	22.88	< 0.001	a < b < c
IES-R total	13.97 $\pm$ 11.63	24.85 $\pm$ 20.26	26.14 $\pm$ 17.16	11.43	< 0.001	a < b, c

PTSD, posttraumatic stress disorder; DTS, Davidson Trauma Scale; IES-R, modified Impact of Event Scale-Revised.

\*ANOVA with post-hoc analysis.

**Table 3.** Mental Health-Related Symptoms Among Ex-Prostitutes, Activists, and Controls

Variable*	mean $\pm$ SD			F	p value	
	Controls <sup>a</sup> (n = 65)	Activists <sup>b</sup> (n = 81)	Ex-prostitutes <sup>c</sup> (n = 113)			
SRI total	37.43 $\pm$ 26.31	44.14 $\pm$ 28.98	51.74 $\pm$ 32.68	4.78	0.009	a < b < c
Tension	5.17 $\pm$ 4.34	7.14 $\pm$ 4.59	7.10 $\pm$ 5.33	3.86	0.022	a < b, c
Aggression	4.34 $\pm$ 3.55	5.44 $\pm$ 3.40	5.73 $\pm$ 4.06	2.70	0.069	NS
Somatization	2.31 $\pm$ 2.16	2.67 $\pm$ 2.47	3.82 $\pm$ 2.92	8.41	0.001	a, b < c
Anger	6.72 $\pm$ 5.50	7.69 $\pm$ 5.14	8.50 $\pm$ 6.13	2.03	0.133	NS
Depression	7.91 $\pm$ 6.21	9.25 $\pm$ 6.45	10.70 $\pm$ 6.98	3.75	0.025	a < b < c
Fatigue	5.08 $\pm$ 3.55	5.71 $\pm$ 4.13	7.11 $\pm$ 4.48	5.58	0.004	a, b < c
Frustration	5.91 $\pm$ 3.83	6.61 $\pm$ 4.67	8.71 $\pm$ 5.99	7.35	0.001	a, b < c
Sleep	6.59 $\pm$ 4.27	15.76 $\pm$ 5.28	18.30 $\pm$ 4.93	118.57	0.001	a < b < c
Smoking	0.55 $\pm$ 2.10	8.00 $\pm$ 15.33	25.58 $\pm$ 14.56	89.16	0.001	a < b < c
Alcohol drinking	4.09 $\pm$ 4.25	5.84 $\pm$ 6.89	11.42 $\pm$ 8.73	25.52	0.001	a, b < c

SRI, Stress Response Inventory; NS, not significant.

\*ANOVA with post-hoc analysis.

higher mean total score of SRI and, particularly in the scales of depression and tension. Ex-prostitutes scored higher on tension than the control group, but were not significantly different from those of the activists.

Similarly, the total mean scores of the scales related to sleep were significantly different among the 3 groups. The total mean scores of drinking- and smoking-related scales also showed significant differences. In comparison with the activists group and the control group, sleep troubles and smoking problems were noticeable in the ex-prostitute group whereas the activists exhibited more sleep and smoking problems than the control group. The ex-prostitutes group had the most drinking problems compared to the activists and the control group.

#### Factors affecting PTSD symptoms of ex-prostitutes

The duration of prostitution ( $r = 0.22$ ,  $p = 0.047$ ) and age ( $r = 0.21$ ,  $p = 0.05$ ) of subjects showed significant positive correlations to the severity of PTSD symptoms, measured by DTS (Fig. 1). The severity of PTSD symptoms measured by DTS was also significantly positively correlated to smoking ( $r = 0.32$ ,  $p = 0.002$ ) and drinking problems ( $r = 0.27$ ,  $p = 0.01$ ). Similarly, the frequency of PTSD symptoms had significantly positive correlations to smoking ( $r = 0.20$ ,  $p = 0.047$ ) and drinking problems ( $r = 0.22$ ,  $p = 0.032$ ; Fig. 2). Sleep troubles had a positive correlation with the frequency ( $r = 0.45$ ,  $p < 0.001$ ) along with the severity of the PTSD symptoms, measured by DTS ( $r = 0.52$ ,  $p < 0.001$ ; Fig. 3).

#### Factors affecting the mental health problems of ex-prostitutes

Age was significantly correlated with smoking problems ( $r = 0.30$ ,  $p = 0.002$ ) whereas duration of prostitution showed significantly positive correlations with smoking ( $r = 0.45$ ,  $p < 0.001$ ) and drinking problems ( $r = 0.30$ ,  $p = 0.003$ ). Sleep troubles were positively correlated to smoking ( $r = 0.25$ ,  $p = 0.011$ ) and drinking problems ( $r = 0.26$ ,  $p = 0.007$ ). Sleep troubles were also positively correlated to the total mean scores of SRI ( $r = 0.60$ ,  $p < 0.001$ ), and to the subscale scores of SRI, such as tension ( $r = 0.55$ ,  $p < 0.001$ ), aggression ( $r = 0.57$ ,  $p < 0.001$ ), somatization ( $r = 0.50$ ,  $p < 0.001$ ), anger ( $r = 0.51$ ,  $p < 0.001$ ), depression ( $r = 0.58$ ,  $p < 0.001$ ), fatigue ( $r = 0.52$ ,  $p < 0.001$ ), and frustration ( $r = 0.53$ ,  $p < 0.001$ ). IES-R scores also showed a significantly positive correlation to sleep problems ( $r = 0.50$ ,  $p < 0.001$ ).

The duration of residence in shelters was negatively correlated to the frequency ( $r = -0.33$ ,  $p = 0.003$ ) and severity of PTSD symptoms ( $r = -0.38$ ,  $p = 0.001$ ) whereas it was inversely correlated to IES-R ( $r = -0.27$ ,  $p = 0.014$ ) and SRI ( $r = -0.21$ ,  $p = 0.049$ ) with subscales of SRI, including tension ( $r = -0.26$ ,  $p = 0.012$ ), somatization ( $r = -0.21$ ,  $p = 0.05$ ), and frustration ( $r = -0.22$ ,  $p = 0.039$ ), along with problems with smoking ( $r = -0.27$ ,  $p = 0.01$ ) and drinking ( $r = -0.26$ ,  $p = 0.014$ ).

#### DISCUSSION

We investigated PTSD symptoms of ex-prostitutes, activists helping prostitutes, and control

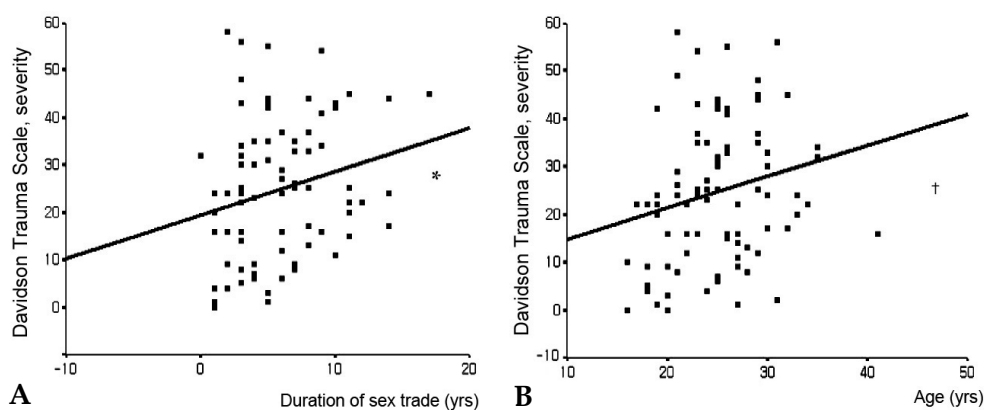
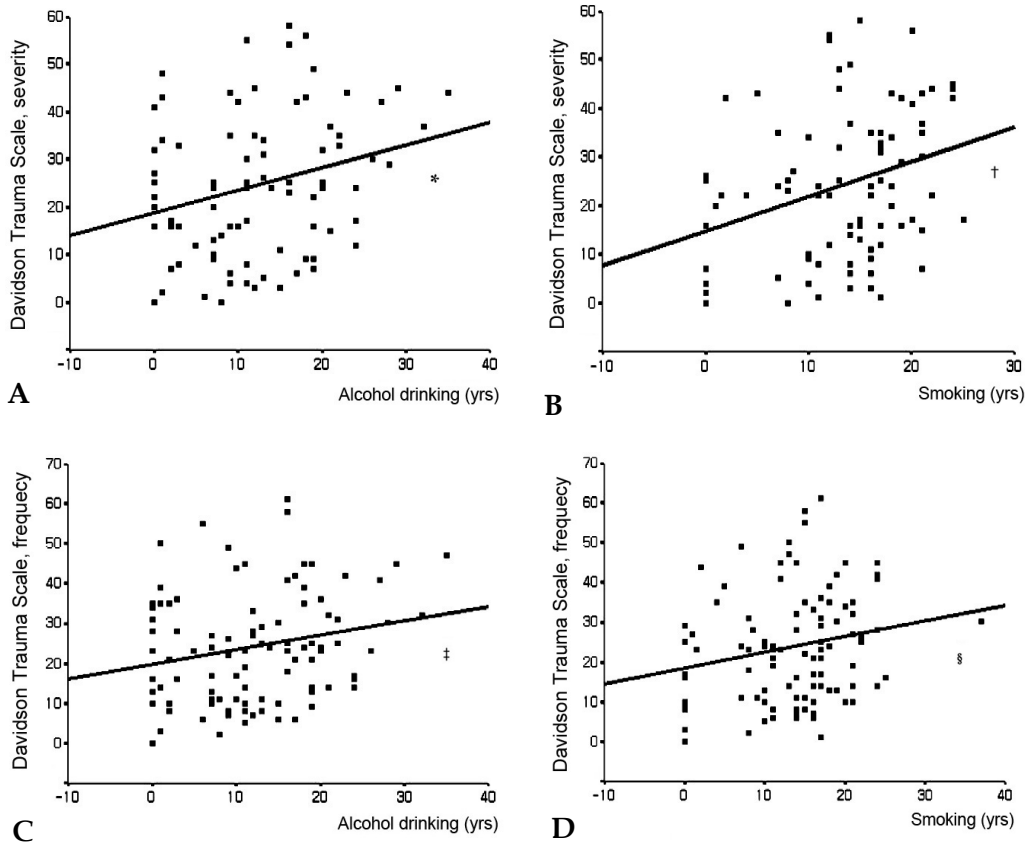
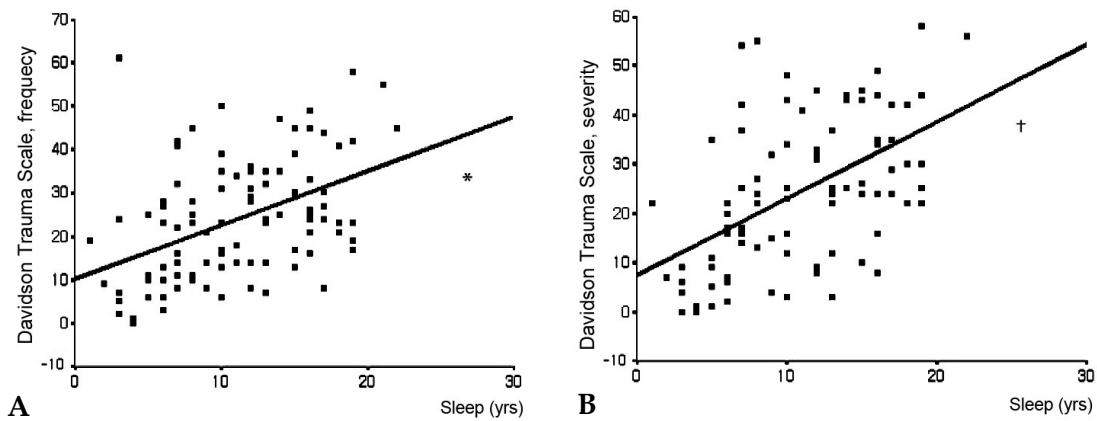


Fig. 1. Correlation between severity subscale of Davidson Trauma Scale, duration of engagement in the sex trade, and age in ex-prostitutes. Pearson correlation coefficient. \* $p = 0.047$ ; † $p = 0.05$ .



**Fig. 2.** Correlation between severity subscale of Davidson Trauma Scale and smoking and alcohol drinking degree in ex-prostitutes. Pearson correlation coefficient. \* $p = 0.01$ ; † $p = 0.002$ ; ‡ $p = 0.032$ ; § $p = 0.047$ .



**Fig. 3.** Correlation between severity subscale of Davidson Trauma Scale and degree of sleep problems in ex-prostitutes. Pearson correlation coefficient. \* $p < 0.001$ ; † $p < 0.001$ .

subjects in the community. We also examined the association between PTSD symptoms and other mental health problems, such as stress reactions, sleep, smoking and alcohol problems. There are 3

implications in this research. This is the first study dealing with PTSD symptoms of not only the women engaged in prostitution, but also the vicarious traumatic effects and mental health of

field workers helping the prostitutes. Second, contrary to previous studies conducted on prostitutes, this study focused on ex-prostitutes who had escaped prostitution and were rehabilitating in shelters. Third, while previous studies on female prostitutes were single-group studies, this study was a controlled and compared study among 3 female groups.

We found that field workers helping prostitutes experienced PTSD symptoms more frequently and more severely than control group. These workers also reported higher rates of tension, sleep troubles, and smoking problems than the control group. These findings support our hypothesis that traumatic experience related to prostitution would have influence on mental health, such as PTSD, not only among the ex-prostitutes but also among the activists traumatized indirectly.

To our best knowledge, there has been no previous controlled study that examined the level of vicarious trauma among field workers helping prostitutes. The present findings are consistent with previous non-controlled studies on vicarious trauma. Vicarious traumatization in sex violence counselors showed a pattern similar to that of previous studies despite its insignificant influence. Specifically, the influences include intrusion of traumatic images,<sup>32,33,41,42</sup> avoidance,<sup>41</sup> depression and frustration with an increase of drug use,<sup>42</sup> disordered sleep, reduction of energy,<sup>33,43</sup> damage to self-confidence and values<sup>32</sup> with a change in cognitive schema.<sup>43</sup> According to previous findings, variables that moderate the development of vicarious trauma include personal characteristics, such as gender,<sup>41</sup> age<sup>44</sup> and counselors' own trauma or abuse history.<sup>45,46</sup> However, in regard to counselors' own trauma, Schauben and Franzier<sup>29</sup> did not find that past trauma history significantly interacted with caseload characteristics in producing symptoms in counselors. It was also reported that there was no notable difference in vicarious trauma symptoms between those with and without personal abuse history.<sup>47</sup> We found that vicarious trauma symptoms correlated significantly with the amount of exposure to trauma and the work characteristics such as the percentage of sexual violence cases within the caseload<sup>29</sup> and the number of working hours spent with traumatized victims.<sup>41,48-50</sup> Therefore, generalization of the

results is difficult, and it may be necessary to consider individual characteristics of counselors whereas other variables that may be associated with the development of vicarious trauma are negative coping strategies, level of personal stress, and training for new and experienced counselors.<sup>51</sup>

Although Roman et al.<sup>4</sup> reported that there was no difference in mental health between sex-workers and control groups, numerous studies have suggested that sex-workers experience diverse psychological symptoms; such as anxiety, depression, and personality disorders.<sup>5,11,12</sup> Similar results also found that women who engage in prostitution experience PTSD symptoms as a psychological consequence of violence associated with prostitution.<sup>10,13,52,53</sup> Compared to other groups, prostitute victims in the present study reported severe and frequent rates of PTSD and other distress symptoms, such as tension, aggression, somatization, anger, depression, fatigue, and frustration. Although ex-prostitutes who participated in this study had not engaged in prostitution for an average of 8.7 mos, they still experienced serious PTSD and other distress symptoms. The results were consistent with a Canadian study that compared women who were still in prostitution to those who were not. The study suggests that ex-prostitute respondents are only slightly less likely to experience depression but are more likely to experience anxiety attacks and emotional trauma than their counterparts who continually engage in prostitution.<sup>54</sup>

Recently, an Australian study showed that female street-based sex workers who reported current PTSD symptoms had experienced a significantly larger number of trauma than sex workers who did not report current PTSD symptoms.<sup>55</sup> In addition, the current study found that the reported PTSD symptoms increased proportionally to the length of the years that women engaged in prostitution. Multiple traumas related to engagement in prostitution for a long time are associated with the risk of developing PTSD and severity of symptoms. These results were consistent with previous research showing that the longer the exposure period to trauma, the more severe and persistent the PTSD symptoms.<sup>15,56</sup> Therefore, we believe that ex-prostitutes who engaged in prostitution for a long time are in need



of great help and support.

In our study, smoking and drinking problems among women who engaged in prostitution were serious compared to the control group and the measures were positively correlated to the severity and frequency of PTSD symptoms. Previous studies showed that the risk of developing drinking problems is higher among women with PTSD caused by sexual violence,<sup>57</sup> while drug abuse problems are higher among prostitutes.<sup>11,58</sup> The theory that alcohol and cigarettes play a role in self-medication to reduce psychological pain is widely known,<sup>59</sup> and 1 study reported that women use drugs to obtain a numbing effect during prostitution. Substance abuse enables PTSD patients to attain cognitive avoidance, while treating the concomitant substance abuse is difficult in cases with residual PTSD symptoms, due to their continuous avoidance.<sup>54,60</sup> Therefore, problems pertinent to substance abuse should be handled at the same time as the PTSD of female prostitutes.

There are several limitations to the present study. First, demographic data such as age, marital status, education, and social and economic status showed significant differences between ex-prostitutes, field workers, and controls. Younger age, lower socioeconomic status, and lack of education are associated with the development of PTSD, but neither increase the risk by more than 50%.<sup>61,62</sup> Therefore, the findings might have been influenced by demographic factors. Second, the questionnaires were all self-reports with no psychiatric diagnosis by an outside expert. Third, field workers' vicarious trauma symptoms were assessed using a modified version of a questionnaire that was developed to assess the direct victims of PTSD. Fourth, past trauma history such as child sexual abuse, rape, and family instability, which are considered risks of developing PTSD, were unfortunately not examined in this study. Since variables related to vicarious trauma were not examined in the field worker group, it is difficult to determine whether the trauma symptoms of field workers were caused indirectly by working with ex-prostitutes or directly by the field workers' own risk factors for PTSD.

Notwithstanding these limitations, this study contributes to our knowledge of the populations that are directly and indirectly traumatized by

adverse experiences related to prostitution. Even after escaping from prostitution, women show diverse psychological symptoms related to PTSD and distress; furthermore, the field workers helping prostitutes also report considerable vicarious traumatic symptoms. These findings show that engagement in prostitution may increase the risks of exposure to violence that may act as psychological trauma not only to the victims themselves but also to the people who help them, indicating that the influence of the trauma lasts for a long time. PTSD is a chronic condition that can be a social and economic burden to the victims, people around them, and society. Therefore, early diagnosis and treatment are extremely important.<sup>63</sup>

These findings raise several issues. In Korea, the act on the prevention of the sex trade and protection of its victims in 2004 criminalized human trafficking and stiffened penalties for brothel owners. A number of shelters, self-support centers, and legal, medical, and vocational assistance including secure housing and paying off debts have been provided. However, mental health support is relatively insufficient. The results of the present study suggest that psychiatric intervention for women engaged in prostitution are required and outreach services such as counseling centers and crisis hotlines are necessary to prevent mental health problems. Future research is needed to develop an assessment method for vicarious trauma of prostitution and specific factors that may contribute to vicarious trauma or protect field workers from vicarious trauma need to be evaluated. In this regard, longitudinal studies may be useful in understanding the processes involved in vicarious trauma and the temporal relationship between coping strategies and the traumatic effects of contact with victims.

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