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Association between PTSD and Depression during Prolonged Exposure Therapy for Intimate -Partner Violence and a Single Incident of Interpersonal Violence of Female Victims

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Introduction: We investigated the relationship between changes in posttraumatic stress disorder (PTSD) and depressive symptoms during prolonged exposure therapy (PE) and examined differences in this relationship between victims of intimate -partner -violence (IPV) and non-intimate -partner -violence (NIPV). **Method:** Subjects were 26 female victims (15 victims of IPV) with PTSD. Simple regression analyses were performed between time and depressive symptoms to identify the association between PTSD and depression in all patients and the IPV and NIPV groups. Using time as a predictor and PTSD symptoms as a mediator, path coefficients were estimated for the associations with depressive symptoms. **Results:** We found that depressive symptoms decreased over time and that this decrease was more prominent in the NIPV group. Furthermore, the obtained estimated path coefficients suggested a strong association between decreases in PTSD symptoms and changes in depressive symptoms in the NIPV group, but that they did not change over time in the IPV group. **Conclusions:** Although PE can relieve PTSD symptoms in adult female IPV victims, a decrease in PTSD symptoms does not always reduce depressive symptoms. If IPV victims present with comorbid depression before PE begins, then treatment for depression may remain an issue even after PE is completed.

Key Words: posttraumatic stress disorder, prolonged exposure therapy, depression, intimate partner violence

Introduction

Previous studies have indicated frequent comorbidity of depressive symptoms in patients with posttraumatic stress disorder[1)~5)]. However, no consensus has been reached on the causal relationship between PTSD (post traumatic stress disorder) and depressive symptoms.

In Europe and the United States, many studies on PTSD treatment have suggested that exposure therapy is effective[6)7)]. In Japan, one randomized controlled trial[8)9)] suggested that prolonged exposure therapy (PE), a type of exposure therapy for PTSD, alleviates PTSD and depressive symptoms, and that these effects persist for a long period.

Although several studies have suggested that therapy focusing on trauma for PTSD patients relieves not only PTSD symptoms but also comorbid depressive symptoms[8)10)], only a few studies have

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suggested an association between changes in the two types of symptoms during treatment. For example, Aderka and Foa[11] investigated the association between changes in PTSD and depressive symptoms during a course of PE in children and adolescents. Their results suggested that PTSD and depressive symptoms influence each other, decreasing as treatment progresses, and that decreases in PTSD symptoms more strongly induce a decrease in depressive symptoms, rather than the other way around. This study provided an important perspective for determining the structure of psychotherapy for patients with PTSD and comorbid depressive symptoms, however, no similar study has yet been conducted in adults.

Thus, in the present study, we targeted adult female victims of interpersonal violence who were receiving PE for PTSD symptoms and analyzed the association between changes in PTSD and depressive symptoms during the course of treatment. Then, in order to assess whether differences in this association can be attributed to type of violence, subjects were divided into two groups: victims of intimate-partner violence (IPV) and victims of a single incident of interpersonal violence other than IPV (NIPV). IPV is the most frequent type of interpersonal violence against women and is often discussed in the context of public health[12]. The prevalence of PTSD is high in IPV victims[13], who are also likely to develop depressive symptoms[14)~16]. A meta-analysis has shown that PTSD and depression are the two most-frequently observed psychiatric disorders in IPV victims[17]. Ever since the concept of the "battered woman" was presented[18)19], the depressive symptoms of IPV victims have been characteristically arranged in terms of cognition and treatment strategies, and it has been pointed out that the symptoms are often refractory. However, these points have not always been reflected in evidence-based therapeutic interventions. Thus, further studies on the effects of PE on PTSD and depressive symptoms among female IPV victims would be particularly helpful in developing perspectives for the future treatment of such victims.

Methods

1. Participants

The participants in this clinical intervention study were 26 female patients who had developed PTSD. The study was conducted at the Institute of Women's Health, Tokyo Women's Medical University, the National Center of Neurology and Psychiatry, and Musashino University Clinical Psychology Center. The subjects were chosen using the inclusion criteria mentioned below and had a total score of at least 40 on the Clinician-Administered PTSD Scale[20] (CAPS) of the Diagnostic and Statistical Manual for Mental Disorders (DSM)-IV, assessed separately by two examiners in the pretreatment assessment. The subjects gave written informed consent prior to participation. The CAPS was administered by examiners who had participated in a CAPS assessment workshop and received appropriate training. The key inclusion criteria were as follows: (1) diagnosed as having PTSD by the CAPS, with a score greater than 40; (2) have had PTSD for at least the past six months; (3) the PTSD was caused by human violence, such as rape, intimate partner violence, or assault; (4) being at least 15 years old when the assault happened; (5) living in the catchment area of the participating centers. (6) able to spend two hours a day for the homework; and (7) native Japanese speaker. The key exclusion criteria were as follows: (1) comorbidity of schizophrenia, bipolar disorder, alcohol or drug dependence, or group A personality disorder; (2) presence of psychopathology that required acute treatment, such as severe depression, self-harm, or severe suicidal attempt. etc; (3) having a physical disease that might interfere with psychological treatment; (4) have a history of epilepsy and non-normalized Electroencephalogram (EEG); (5) being pregnant; (6) have difficulty in understanding the procedure of the study or treatment protocol, e.g., due to illiteracy or intellectual problems; (7) have already received psychological treatment due to exposure to trauma, including Eye Movement Desensitization and Reprocessing (EMDR); (8) having an ongoing or scheduled court litigation for which PTSD works favorably (excluding arbitration or litigation for di-

Table 1 Demographic Data on Subjects' Trauma: Pre-treatment (n = 26)

Measure	All (n=26)	IPV (n=15)	NIPV (n=11)
Age (yrs)	38 (9.7)*	39.7 (7.5)*	35.6 (11.7)*
Type of trauma n (%)			
Intimate partner violence	15 (57.7)	–	–
Sexual assault	7 (7)	–	–
Robbery	2 (27.7)	–	–
Physical violence with sexual harassment	1 (3.8)	–	–
Attempted murder-suicide	1 (3.8)	–	–
Additional AXIS 1 disorder			
Major depressive disorder	17 (65.4)	10 (66.7)	7 (63.6)
Anxiety disorder	13 (50.0)	7 (46.7)	6 (54.5)
Eating disorder	3 (11.5)	0 (0)	3 (27.3)

*: M (SD)
IPV: Victims of intimate -partner violence
NIPV: Victims of a single incident of interpersonal violence other than IPV

vorce); (9) suicidal attempts of serious self-harm within the past six months (e.g., self-mutilation that required suture, overdose of drugs that caused loss of consciousness, or manipulative self-harm in order to threaten others); (10) participating in another clinical trial; and (11) judged by screening doctors to be unable to conduct PE due to disturbed consciousness, poor treatment compliance, or unstable family environment such as ongoing trauma; there were 2 screening doctors, so the judgment standard was stable during the research period. Selection bias cannot be completely excluded, but as the patients were randomly assigned after the screening, this bias occurred uninformative to the treatment outcome, so it would have hardly affected the research results. Patients who met all of the inclusion criteria and none of the exclusion criteria were considered eligible.

With regard to the trauma that triggered PTSD, 15 of the 26 female patients were victims of IPV. The remaining were victims of NIPV (two victims of robbery offences, one of sexual harassment, one of attempted murder-suicide, and seven of sexual assault). The demographic data of the subjects are shown in Table 1.

2. Treatment and therapists

PE was performed according to the manual prepared by Foa, Hembree, and Rothbaum[21], who developed this therapy. For this study, we used the Japanese version of the manual, translated by Kim and Konishi (2009). This therapy program consists of an approximately 90-min individual interview session 1-2 times a week for a total of 10-15 sessions. Session 1 includes the trauma interview, an explanation of the therapeutic principles of PE, and practice of the respiratory retraining method; afterwards, the patient is required to read over the handout on the therapeutic principles again and perform the respiratory retraining exercise daily at home (Table 2). In Session 2, responses to trauma and its influences are discussed, the therapeutic principles of *in vivo* exposure therapy explained, and an anxiety hierarchy is constructed. *In vivo* exposure therapy involves constructing, with the therapist, a hierarchical list of anxiety-provoking situations, activities, and places that the patient is avoiding in real life, and subsequently facing those situations. The homework for Session 2 is for patients to expose themselves to certain situations on the anxiety hierarchy, listen to the recorded session, and read the handout on "common responses to trauma" daily. In Session 3, the first imaginal exposure therapy session is performed. Imaginal exposure therapy is a technique that promotes habituation to the memory of a trauma through reliving and specifically describing the traumatic experience, so that patients can face it in their imaginations. Patients describe a traumatic event in detail for 45-60 min and then discuss it with the therapist, processing their thoughts and emotions associated

Table 2 Aim and procedure of psychological therapy in vivo exposure and imaginal exposure in PE

Psychological therapy: Psychological education, psychological support

Session	Procedure
1	Trauma interview, explanation of the therapeutic principles of PE, practice of the respiratory retraining method
2	Explanation of the in vivo exposure therapy*
3	Make a list of an anxiety hierarchy
	Explanation of the imaginal exposure therapy**
4-9	Psychological support and discussion of trauma
Last	Consultation of progress and changes of the patient during treatment

In vivo exposure*: Promotes habituation to the anxiety-provoking situations, activities, and places from a trauma in real life

Session	Procedure
1	Homework (listen to the recorded session, and read the handout on the therapeutic principles daily)
2	Homework (expose to certain situations on the anxiety hierarchy, listen to the recorded session, and read the handout on "common responses to trauma" daily)
3-9	Homework (expose to certain situations on the anxiety hierarchy, listen to the recorded session daily)

Imaginal exposure**: Promotes habituation to the memory of a trauma through reliving

Session	Procedure
3	Describe the traumatic experience (45-90 min)
	Homework (listen to the recorded imaginal exposure therapy session daily)
4-9	Describe the "hot spot," or the most difficult aspect of the trauma (45 min)
	Homework (listen to the recorded imaginal exposure therapy session daily)
Last	Describe the whole traumatic experience (45 min)

with the trauma. The homework for this session is to listen to the recorded imaginal exposure therapy session daily, to listen to the entire recorded Session 3 once, and to continue the *in vivo* exposure practice. In the interim sessions, Sessions 4-9, imaginal exposure therapy is performed for at most 45 min, after which the *in vivo* exposure practice is reviewed and adjusted. As treatment progresses through these interim sessions, the patient begins to focus on and specifically describe the "hot spot," or the most difficult aspect of the trauma. The number of interim sessions may be increased depending on the treatment progress. The homework for the interim sessions is the same as that for Session 3. In the final session, the progress and changes of the patient during treatment, ways to prevent future recurrence of the symptoms, etc., are discussed by reviewing the treatment performed in the previous sessions.

PE in the present study was performed by psychiatrists and clinical psychologists who had participated in a workshop held in Japan and had received appropriate training.

3. Measures and statistical analysis

Before each session, in order to measure changes in the severity of anxiety and depressive symptoms, patients were administered assessments for each type of symptom: the Impact of Event Scale-Revised Version[22] (IES-R), which is consistent with PTSD diagnostic criteria, and the Beck Depression Inventory II[23)24)] (BDI-II), or the self-administered Center for Epidemiologic Studies Depression Scale[25] (CES-D). CAPS assessments[26] were performed before and after treatment.

The data used for our analyses were the number of PE sessions (time) and the results obtained from the assessment of PTSD symptoms (IES-R) and depressive symptoms (BDI-II and CES-D) at each session. Two scales (BDI-II and CES-D) were used to assess depressive symptoms; the standard speed of the scales was converted to a mean of 0 and a standard deviation of 1 to normalize the data. Two scales evidenced satisfactory levels of specificity and positive predictive value[27]. In order to analyze the association between PTSD and depressive symptoms, we selected as a variable PE session (time), PTSD symptoms (IES-R) and depressive symptoms (BDI-II and CES-D). The path coefficients estimated from these variables (time, PTSD symptoms, and depressive symptoms) were ana-

Table 3 Results of an ANOVA on Pre- and Post-treatment Data on PTSD Symptoms, Depressive Symptoms, and PTSD Clinical Diagnosis

Symptoms	Pre				Post			
	IPV	NIPV	p	η^2	IPV	NIPV	p	η^2
PTSD 1 (IES-R)	51.53	50.55	0.9	0.0	31.07	23.46	0.3	0.5
Depression	32.87	28.64	0.33	0.4	24.87	18.0	0.12	0.1
PTSD 2 (CAPS)	85.58	77.91	0.43	0.3	51.25	42.5	0.43	0.3

IPV: Victims of intimate -partner violence
NIPV: Victims of a single incident of interpersonal violence other than IPV
IES-R (PTSD 1): The Impact of Event Scale-Revised Version (IES-R); PTSD diagnostic criteria
CAPS (PTSD 2): The Clinician-Administered PTSD Scale (CAPS) of the Diagnostic and Statistical Manual for Mental Disorders (DSM)-IV
Pre: Pre-treatment
Post: Post-treatment

lyzed using the Covariance Analysis and Linear Structural equations (CALIS procedure in SAS version 9.13). The path coefficients were normalized the data a standard partial regression coefficient from -1 to $+1$. Subjects were divided into the IPV and NIPV groups to determine whether there were significant differences in pre- and post-treatment data for PTSD symptoms, depressive symptoms, and PTSD clinical diagnosis. Then, an analysis of variance (ANOVA) was performed separately by using the pre- and post-treatment scores of the CAPS, IES-R, BDI-II, and CES-D. The significance level was analyzed using JMP Version 9.0. There were no missing values in these analyses.

4. Ethical considerations

The present study was approved by the ethics committees of all the institutions where the aforementioned PE was performed. The objectives of the study were explained to the participating subjects in writing, and the therapy was conducted with only those who provided written informed consent. Subjects were assured that those who did not provide or withdrew their informed consent would not suffer any disadvantage in regular treatment.

Results

After the data on PTSD symptoms (IES-R), depressive symptoms, and PTSD clinical diagnosis (CAPS) in the IPV and NIPV groups had been divided into pre- and post-treatment data, ANOVAs were performed. We found no significant difference in either pre- or post-treatment data between the IPV and NIPV groups (Table 3).

In order to understand the association between PTSD and depressive symptoms in all patients receiving PE, simple regression analysis was first performed between time and depressive symptoms. In addition, by setting time as a predictor variable and PTSD symptoms as a mediator, path coefficients were estimated for the association with depressive symptoms. The simple regression analysis revealed that depressive symptoms tended to decrease over time (Fig. 1a, coefficient C). On the other hand, the mediation analysis yielded estimated path coefficients, suggesting that a decrease in PTSD symptoms was strongly associated with changes in depressive symptoms (Fig. 1b, coefficient B). In this analysis, however, no change in depressive symptoms was observed over time (Fig. 1b, coefficient C').

Similar analyses were performed separately for the IPV and NIPV groups. Simple regression analysis revealed a decrease in depressive symptoms over time in the NIPV group (Fig. 3a, coefficient C). While the mediation analysis yielded estimated path coefficients suggesting that a decrease in PTSD symptoms was associated with changes in depressive symptoms in both groups, the results suggested more prominent associations in the NIPV group than in the IPV group (Fig. 2b), coefficient B, and Fig. 3b, coefficient B).

Next, in the reverse model, simple regression analysis was performed between time and PTSD symptoms, and path coefficients were estimated for the association with PTSD symptoms by using the

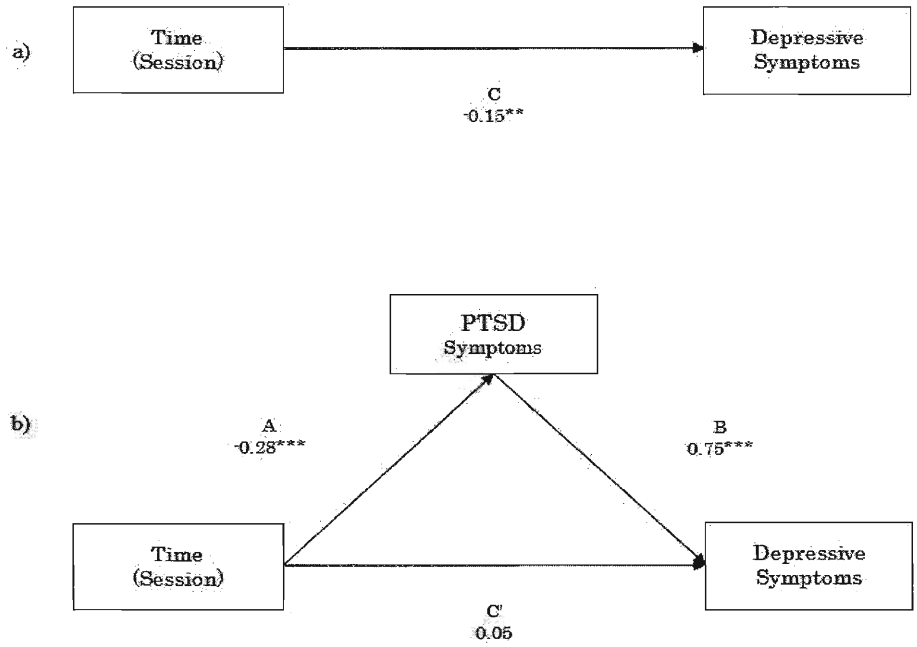

Fig. 1 Simple regression analysis and Path analysis for all patients
a) Simple regression analysis between time and depressive symptoms, b) estimation of path coefficients with PTSD symptoms as a mediator for all patients. Estimate to Effect Size: $R^2 = 0.08$ (PTSD = Time + e_2), 0.55 (Dep = PTSD + Time + e_1) ***p = <0.0001 **p = <0.001

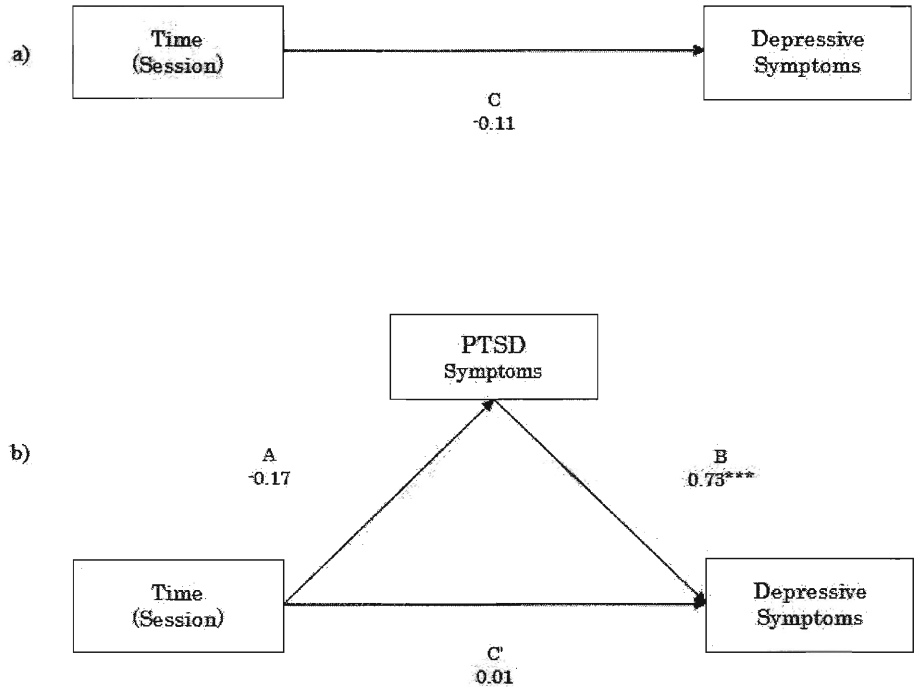

Fig. 2 Simple regression analysis and Path analysis for IPV
a) Simple regression analysis between time and depressive symptoms, b) estimation of path coefficients with PTSD symptoms as a mediator for the IPV group. Estimate to Effect Size: $R^2 = 0.03$ (PTSD = Time + e_2), 0.53 (Dep = PTSD + Time + e_1) ***p = <0.0001

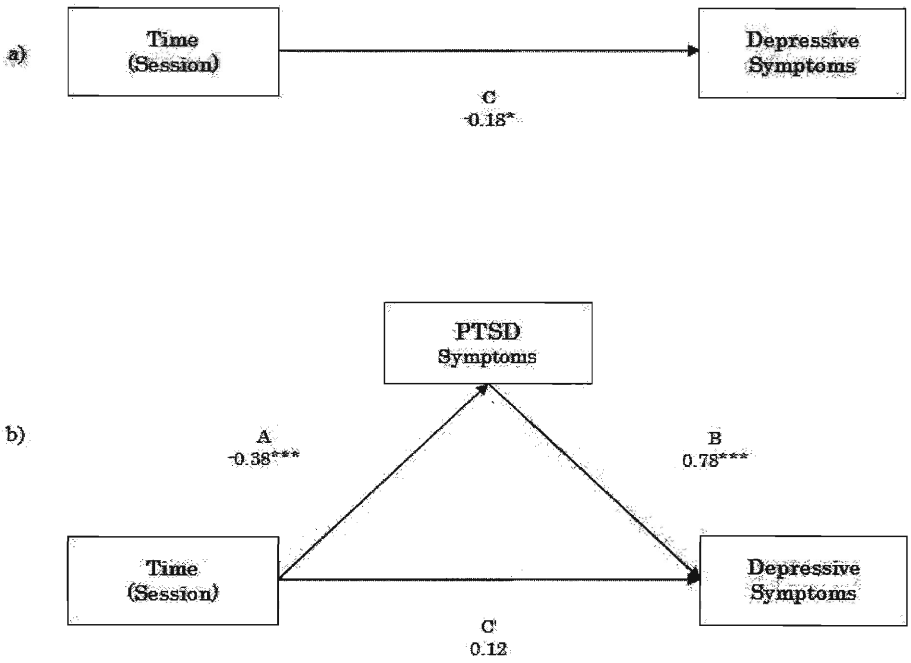

Fig. 3 Simple regression analysis and Path analysis for NIPV
a) Simple regression analysis between time and depressive symptoms, b) estimation of path coefficients with PTSD symptoms as a mediator for the NIPV group. Estimate to Effect Size: $R^2 = 0.15$ (PTSD = Time + e_2), 0.56 (Dep = PTSD + Time + e_1) ***p = <0.0001 *p = <0.01

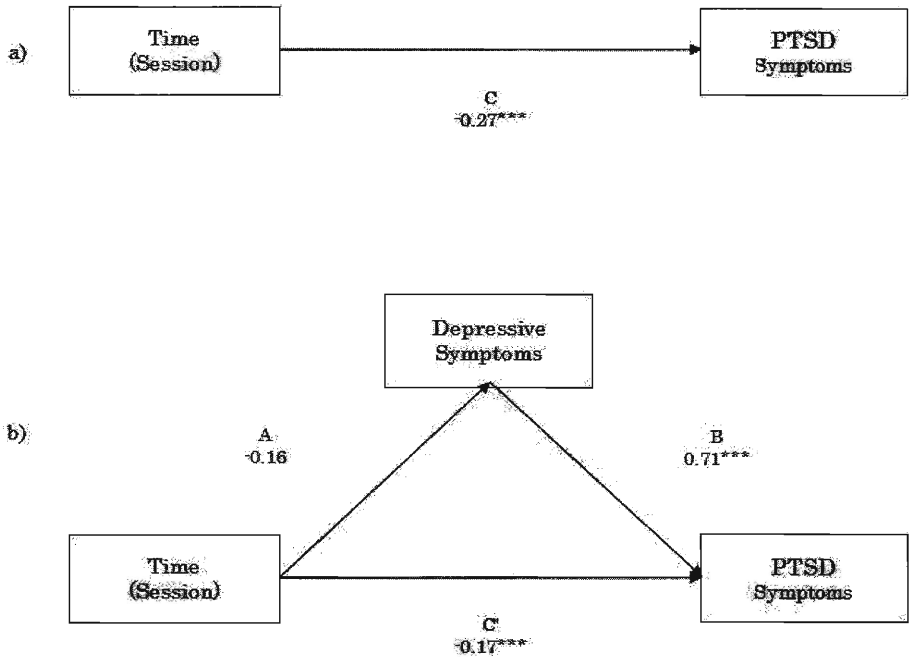

Fig. 4 Reverse model of Simple regression analysis and Path analysis for all patients
a) Simple regression analysis between time and PTSD symptoms, b) estimation of path coefficients with depressive symptoms as a mediator for all patients. Estimate to Effect Size: $R^2 = 0.03$ (Dep = Time + e_2), 0.57 (PTSD = Dep + Time + e_1) ***p = <0.0001

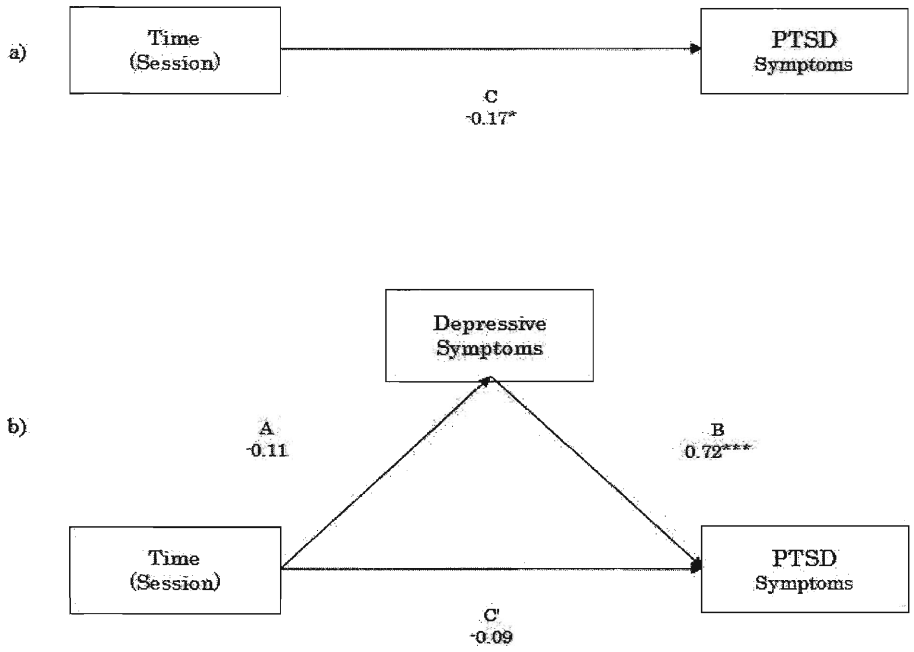

Fig. 5 Reverse model of Simple regression analysis and Path analysis for IPV
a) Simple regression analysis between time and PTSD symptoms, b) estimation of path coefficients with depressive symptoms as a mediator for the IPV group. Estimate to Effect Size: $R^2 = 0.01$ (Dep = Time + e_2), 0.54 (PTSD = Dep + Time + e_1) ***p = < 0.0001 *p = < 0.01

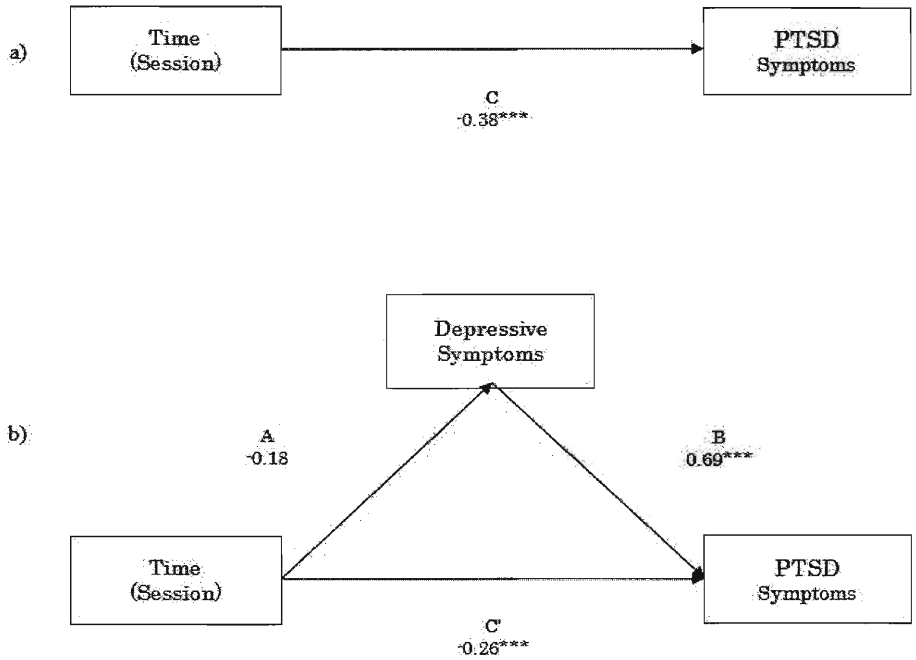

Fig. 6 Reverse model of Simple regression analysis and Path analysis for NIPV
a) Simple regression analysis between time and PTSD symptoms, b) estimation of path coefficients with depressive symptoms as a mediator for the NIPV group. Estimate to Effect Size: $R^2 = 0.03$ (Dep = Time + e_2), 0.61 (PTSD = Dep + Time + e_1) ***p = < 0.0001 *p = < 0.01

same predictor variable (time) and changing the mediator to depressive symptoms. While the simple regression analysis revealed a significant decrease in PTSD symptoms over time in all patients, the IPV group, and the NIPV group (coefficient C in Fig. 4a, 5a, 6a), the results showed a more pronounced decrease in PTSD symptoms in the NIPV group. The mediation analysis yielded estimated path coefficients that suggested a strong association between time and PTSD symptoms in the NIPV group (Fig. 6b, coefficient B, and Fig. 6b, coefficient C'). In addition, the path coefficients between time and depressive symptoms provided a weaker estimate than did the path coefficients between time and PTSD symptoms in all patients and the IPV group, which was contrary to the estimate obtained from the previous analysis with PTSD symptoms as a mediator Fig. 4b, coefficient A and C', Fig. 6b, coefficient A and C'). Meanwhile, in the IPV group, the estimated path coefficient between time and PTSD symptoms did not differ much from that between time and depressive symptoms (Fig. 5b), coefficient A and C').

Discussion

We examined the association between PTSD and depressive symptoms during PE in a sample of adult female patients who had developed PTSD due to interpersonal violence. The estimated path coefficients for time, PTSD symptoms, and depressive symptoms revealed that PE reduced both PTSD and depressive symptoms in all subjects—results similar to those obtained by Aderka and Foa[11] for adolescent patients. As both types of symptoms were associated, a decrease in PTSD symptoms appeared to induce a decrease in depressive symptoms (Fig. 1, 4). Thus, PE may simultaneously reduce PTSD and depressive symptoms in cases of adult female patients who present with a combination of those symptoms.

Meanwhile, the separate analyses for the IPV and NIPV groups suggested that while PTSD symptoms in IPV group deceased with time significantly on simple regression analysis between time and PTSD symptoms (Fig. 5a, coefficient C), the estimated value of effect size was smaller than that of the NIPV group. The simple regression analysis between time and depression symptoms did not find a significant correlation in the IPV group (Fig. 2a, coefficient C), but found a significant decrease of depression symptoms with time in the NIPV group. The obtained path coefficients suggested that a decrease in PTSD symptoms was strongly involved in reducing the symptoms of depression in the NIPV group (Fig. 3b), whereas no estimated path coefficient indicating such an association was obtained in the IPV group (Fig. 2b). Thus, although PE ameliorated both PTSD and depressive symptoms in female IPV victims, the amelioration of PTSD symptoms was not directly associated with the amelioration of depressive symptoms. On the other hand, the pretreatment demographic data (Table 1) showed no marked difference in the prevalence of major depressive disorder between the IPV and NIPV groups. In addition, there was no significant difference between the IPV and NIPV groups in terms of the pre- and post-treatment values for depressive symptoms (Table 3). Thus, the above result cannot be explained by a mere decrease in depressive symptoms from before to after treatment in the IPV and NIPV groups.

It should be noted that the small sample size was a limitation of the present study; thus, its findings are only preliminary. Although the findings did not suggest any difference between the IPV and NIPV groups in terms of the responsiveness of depressive symptoms to PE, the analysis of the course of depressive symptoms in comparison with that of PTSD symptoms revealed differences in characteristics that could not be identified solely by measuring depressive symptoms. This indicates that comorbid depressive conditions with PTSD differ with regard to the pathology of trauma symptoms. According to the course of treatment, and although the depressive symptoms of the NIPV group seemed to be directly connected to PTSD symptoms, the depressive symptoms of the IPV group appeared more independent from the PTSD symptoms compared with those of the NIPV group. The present study demonstrated that PE adequately relieves PTSD symptoms in adult female IPV victims

(Table 3). This is incredibly beneficial to female IPV victims suffering from PTSD symptoms. However, since the association between decrease in depressive symptoms and PTSD symptoms was not strong, depressive symptoms in the IPV group was not expected to decrease concurrently, When IPV victims present with comorbid depressive symptoms at the start of PE, the depressive symptoms may be purely coincidental to the PTSD symptoms. Therefore, especially for treatment of IPV, it is considered necessary to periodically evaluate both depressive and PTSD symptoms, as well as to provide additional treatments for conceivable remaining symptoms. This suggests that treatment for depression may remain an issue even after PTSD symptoms are relieved. Iverson et al[28] reported that treating both PTSD and depressive symptoms in female IPV victims can be a long-term preventive measure against further IPV incidents after treatment, which may improve the quality of life (QOL) of female IPV victims in the future. The present study offered support for these findings. However, it is not yet fully understood which treatment is most effective in alleviating the depressive symptoms of IPV victims. According to one existing study, the risks for developing depression in IPV victims include young age, lower social stratum, a history of childhood abuse, and lack of social support[29]. However, these risks cannot be specific to IPV victims because many of the risks overlap with underlying risks for developing depression. Meanwhile, ever since Walker[18] presented the concept of the Battered Women Syndrome, many studies have focused on the cognitive characteristics of IPV victims. Recently, regarding the components of IPV victimization and victims' coping styles, Calvete, Corral, and Estevez[30] indicated that the maladaptive cognitive schemas of IPV victims are associated with disengagement coping, which aggravates depressive symptoms. If cognitive schemas or coping styles specific to IPV victims exist and are closely associated with depressive symptoms, depression treatment specializing in reorganizing the schemas or styles may need to be developed.

There have been no previous articles analyzing PTSD and depressive symptoms that focused on IPV victims. Despite the present study's small sample size—only 26 victims—the results suggest that depressive symptoms should be treated during PE for female IPV victims. Therefore, this study may have raised a significant issue for the future.

Lastly, we suggest the following as possible topics for future study according to the present results: researchers must determine whether the same results can be achieved with a larger sample size, and at which point during the treatment course should PE be performed to maximize its effects on IPV victims presenting with PTSD and comorbid depressive symptoms. Moreover, important issues for future studies regarding independently coexisting depressive symptoms include the following: whether the addition of existing treatments for depression, such as cognitive behavioral therapy and pharmacotherapy, is sufficient treatment; whether a specialized therapeutic approach emphasizing the unique aspects of IPV victims is preferable; when such interventions should be performed; and whether QOL will be improved after therapeutic intervention.

Conclusion

PE can relieve PTSD symptoms in adult female IPV victims, a decrease in PTSD symptoms does not always reduce depressive symptoms. If IPV victims present with comorbid depression before PE begins, treatment for depression may remain an issue even after PE is completed.

Acknowledgments

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IPV 被害女性に対する持続エクスポージャー療法における PTSD 症状とうつ症状の関係

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〔緒言〕対人暴力被害によって外傷後ストレス障害（PTSD）を発症した成人女性に持続エクスポージャー療法（Prolonged Exposure therapy：PE）を実施し，治療経過における PTSD 症状とうつ症状の変化の関係性を検討し，またパートナーからの暴力被害者（group of victims of intimate partner violenc：IPV）とそれ以外の単回性対人暴力被害者（group of victims of not intimate partner violence：NIPV）で変化の関係性に相違があるのか検討した.〔対象と方法〕PTSD を発症した計 26 名の女性患者（DV 被害：15 名，その他の被害：11 名）を対象とした. 全対象，IPV 群，NIPV 群について PTSD 症状とうつ症状との関係性をとらえるため，単回帰分析と PATH 解析を行った.〔結果〕全患者を対象にした結果では，単回帰分析において治療経過によるうつ症状の減少が認められ，PATH 解析では PTSD 症状の減少がうつ症状の変化に関係していることを示唆する推定値が得られた. IPV 群と NIPV 群の二群に分けた分析において，単回帰分析では NIPV 群に時間経過によるうつ症状の減少が認められた. PATH 解析では，NIPV 群で PTSD 症状の減少がうつ症状の変化に関与しているという推定値が得られたが，特に IPV 群では得られなかった.〔結論〕IPV 群と NIPV 群における‘うつ’の状態は評価尺度上では把握しづらい相違が存在している可能性が示唆された. このことは，PTSD に併存するうつ状態に，被害内容に伴う異種性 Heterogenicity が存在することを示している. PE は成人女性 IPV 群において PTSD 症状を十分に改善するという結果が得られたが，PTSD 症状の減少は必ずしもうつ症状の減少をリードしない. IPV 群において PE 開始時に明らかなうつ症状が併存している場合，治療終結後もうつ病治療が課題として残る可能性については十分予測されるべきである.