Effectiveness of psychoeducation intervention on post-traumatic stress disorder and coping styles of earthquake survivors

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Aims and objectives. The aim of the study was to examine the effectiveness of a psychoeducation intervention based on Peplau's approach, including problem-solving compared with intervention with medication on post-traumatic stress disorder (PTSD) symptoms and coping of earthquake survivors.

Background. Post-traumatic reactions and recovery are the result of complex interactions among biological, personal, cultural and environmental factors. Both psychosocial and psychopharmacological methods have been advised to treat PTSD. The general goal of treatment is to decrease the anxiety and to support these patients in regaining normal daily functions.

Design. The study used a pretest to posttest quasi-experimental design with three comparison groups.

Methods. The sample of the study included 51 survivors of the Marmara Earthquake who met diagnostic criteria for PTSD. Comparison groups were made up as psychoeducation only, medication only and psychoeducation with medication (PEM). Six semi-structured psychoeducation sessions were conducted individually. Patients in the ‘medication only’ group did not participate in these sessions. The Clinician Administered PTSD Scale, Hamilton Depression Scale and Coping Strategies Scale were used for the measurements.

Results. There was a significant difference between the ‘PEM’ group and the ‘medication only’ group with the first group showing greater relief of symptoms. Generally, there were no differences between the ‘medication only’ and ‘psychoeducation only’ groups. Avoidance as a coping strategy had significant positive correlations with PTSD and depression outcomes.
Conclusions. Patients with PTSD seem to take more advantage from the combined treatment model. Nurses can help the patients with PTSD by teaching them to cope with the symptoms.

Relevance to clinical practice. The number and variety of catastrophic events in the world are increasing. Psychiatric nurses should therefore take responsibility regarding the effects of trauma and investigate the ways of working with people who experienced trauma in more detail and develop interventions based on scientific evidence.

Key words: coping, nurses, nursing, psychiatric nursing, traumatic stress.

Introduction
Disasters are large-scale events that affect significant number of people at the same time and are beyond individual control. Among the natural disasters, earthquakes are very common and one of the most devastating. Unlike other catastrophic events, prediction of or preparation for earthquakes is not possible and the adverse effects are widespread and long term. Besides the general environmental devastation, a high risk of psychological morbidity has been observed among survivors.

Earthquakes have been faced frequently in Turkey and the most devastating earthquakes, measuring 7.4 and 7.2 on the Richter scale, occurred in 1999. These earthquakes hit the most densely populated district in Turkey within three months. In addition to the people who were affected directly, thousands of people either got involved in rescue efforts or witnessed painful experiences during and after these earthquakes. Related to these earthquakes, Başoğlu et al. (2002) reported that the estimated rate of post-traumatic stress disorder (PTSD) among the earthquake victims was 43% just after the event. In another survey, Livanou et al. (2002a,b) found that the rate of PTSD among the survivors was 63% 14 months after the event and Şalıçoğlu et al. (2003) reported that the prevalence of PTSD was 39% among victims that had not sought treatment 20 months after the earthquake in Turkey.

Despite the emphasis on recognizing the magnitude of physical, emotional, social and spiritual components of traumatic experiences and numerous studies about the symptomatology and intervention approaches in the literature, there are very few studies about the psychological and social consequences of disasters in Turkey. The lack of knowledge and an intervention model to deal with persons with PTSD are challenges in daily clinical practice, particularly in nursing. As there is an urgent need to be prepared for large-scale disasters and deal with the extensive psychopathology, an increased understanding of the responses of survivors and cost-effective intervention models are still needed.

Background
Various studies on disaster victims indicate that PTSD and major depression are the most common psychological problems resulting from earthquake (Briere & Elliot 2000, Wang et al. 2000, Chen et al. 2001, Armenian et al. 2002, Bourque et al. 2002, Livanou et al. 2002a,b, Kuo et al. 2003). PTSD is a chronic and disabling disorder associated with increased substance abuse, suicidal ideations, comorbid psychiatric disorders and physical health problems in the long term. These adverse effects of the disorder create an increased economic burden for all healthcare systems and the society (Kessler 2000, Marsella et al. 2001, Katz et al. 2002, Chan et al. 2003). Despite the studies that investigate the treatment models, there are still no studies convincingly defining long-term effects of the treatment. To date, little is known about the factors related to the treatment results and how to help individuals with PTSD is a challenge for mental health professionals.

Post-traumatic psychopathology and recovery are the result of complex interactions among biological, personal, cultural and environmental factors and the type of event (Davidson & Connor 1999, Chen et al. 2001, Livanou et al. 2002a,b). Both psychosocial and psychopharmacological approaches have been used to help persons with PTSD and these combined therapies are most frequently recommended. In general, the goal of treatment is to decrease the anxiety and to support these patients in regaining normal daily functions (Foa et al. 1999, Aker 2000, Brunello et al. 2001, Başoğlu et al. 2003).

Taken in this context, we believe that Peplau’s developmental theory will be helpful to psychiatric nurses in interviewing individuals and constructing interventions. Peplau defines nursing as a therapeutic and interpersonal process and the theory is suitable for short-term individual therapy (Ryles 1998, Birol 2000).

According to Peplau, the patient’s health depends on the reduction of anxiety. In other words, good health depends
primarily on diminishing anxiety and what diminishes anxiety is communication. The patient–nurse relationship should be directed towards decreasing the severity of anxiety. The core of Peplau’s model is an interpersonal process and in this relationship the nurse directs the purpose and the process itself. In the process of patient–nurse interaction, the nurse plays a role as an advisor, source, instructor, technical expert, leader and representative.

According to Peplau, tension appears when individuals face stressful situations and this tension creates energy. This energy is used either in a positive or negative way and health is inter-related with the use of this energy caused by stress in a positive way. The response to stress depends on the intensity of the event and the capacity of the individual to respond. The first aim of nursing is to sustain the vitality of the organism and then help the patient understand what the health problem is. The nurses help the patient use the stressful situation as a learning experience to gain new behavioural patterns. Nurses help individuals understand their own reactions and coping mechanisms and therefore protect them from illness and future recurrences (Pearson et al. 1996, Birol 2000). In this context, the concepts and principles explained in Peplau’s patient–nurse relationship overlaps PTSD treatment and psychosocial theories that enable patients to overcome trauma. Peplau’s interaction process is materialized in four phases (Pearson et al. 1996, Birol 2000).

**Orientation phase**

Both the patient and the nurse understand the complex nature of the illness that the patient has gone through. At this stage, the necessary information to define the problem is collected. The nurse has an advisory role. The nurse redefines the problem and directs the patient’s energy away from anxiety, aiming to handle the actual problem in a more constructive way.

**Identification phase**

This phase begins after the patient accepts that a certain relationship developed with the nurse and the nurse plans appropriate action. This is the stage where patients express their feelings and share the problem.

**Exploitation phase**

In this phase, the patient defines the service provided by the nurse and experiences reactions directed towards this service. Both the patient and the nurse work towards mutually defined targets. According to the circumstances, the nurse may play an advisory, source, technical expert or other roles.

**Resolution phase**

After the resolution of the health problem, the patient does not demand the assistance provided by the nurse. The patient shows independent behaviours and is hopeful and open to development. This phase is where the interaction between individuals ends.

Peplau proposed the idea that during the orientation stage it is more important to focus on the person’s individual development rather than the disease process and therefore give the patient an opportunity to learn from this experience. The nurse assists the patient throughout the interaction to transform the energy depending on the symptoms to problem-solving energy (Pearson et al. 1996, Birol 2000).

Coping strategies of individuals have been found to be related to the symptoms and the course of the disorder. When a traumatic event happens, pre-event coping strategies of individuals may no longer be adequate and new skills need to be gained. That is why it is important to help individuals to cope with the disorder and environmental adversity. In fact, the factors affecting coping strategies also affect PTSD symptomatology (Solomon et al. 1988, Spurrell & McFarlane 1993). The first step is to help individuals with PTSD to describe the symptoms and to reduce the adverse effects of trauma while building trust by means of therapeutic communication. Lazarus (1993) suggested that those who use a problem-solving approach have a lower risk of psychopathology, less depression, less anxiety and have an internal locus of control. He also added that problem solving can be counterproductive and cause chronic stress when it fails. However, Spurrell and McFarlane (1993) indicated that using coping strategies was associated with various kinds of psychopathology but not PTSD; they found different coping modalities were being used in acute and chronic PTSD. In addition, Arata et al. (2000) found that PTSD was associated with avoidance as a coping strategy. In conclusion, there is a requirement for discovering and defining ways to overcome trauma for individuals still facing this disorder. In this study, we aimed to show the effectiveness of the nursing approach in assisting patients.

**Method**

**Aim**

The primary purpose of this study was to compare the effectiveness of different intervention models including psychoeducation with medication (PEM), psychoeducation only (P) and medication only (M) in reducing symptom severity and enhancing adaptive coping strategies for persons with PTSD.
Design and procedure

The study was conducted between 1 January and 31 November, 2000 at the Psychiatric Outpatient Clinic of the Gülhane Military Medical Academy in Ankara. Patients were recruited for the study five months after the earthquake. Patients came to this clinic on a daily basis as walk-ins, with scheduled appointments, or on official sick calls.

All participants of this study were patients who voluntarily presented at the psychiatric outpatient service either because of PTSD symptoms or other mental health concerns. They were the persons who had experienced the earthquake. Within the study process, those patients who had experienced the earthquake were assessed for PTSD by a psychiatrist and those who met PTSD criteria were referred to the researcher. Primary physician determined the diagnosis of PTSD and whether they needed medication or not. The researcher informed all of the patients diagnosed with PTSD, about the study and assessed each patient’s eligibility for enrolment. All patients, whether prescribed medication or not, were asked if they were willing to participate in the psychoeducation sessions and those willing were scheduled for psychoeducation. There were thus three comparison groups for the study (Fig. 1) as PEM, medication only and psychoeducation only. ‘Psychoeducation only’ group was formed by the patients who were not prescribed medication but willing to participate to psychoeducation. Following the eligibility assessment and obtaining informed consent, patients were asked to complete pretest questionnaires and were given a follow-up appointment. The posttest questionnaires were given one week after the last psychoeducation session. The average time for completing the questionnaires was 45 minutes.

Participants

It was aimed to reach all the patients diagnosed with PTSD within the first year following the earthquake. Therefore, during the study, 169 patients were diagnosed with PTSD at the psychiatric outpatient clinic at Gülhane Military Medical Academy and 68 of these fitted the study sample criteria for inclusion: (1) diagnosed as earthquake-related PTSD; (ii) older than 18 years of age; (iii) literate in Turkish; (iv) willing to participate in the study; (v) no other diagnosed psychotic disorder; (vi) no recent psychological treatment (including medication and psychotherapy); (vii) no brain injury. Excluded patients were: those who had experienced other traumatic events such as combat, sudden loss of a loved one, or traffic accidents; those with co-morbid psychiatric disorders (except depression); and those who did not fit the inclusion criteria. Of the eligible 68 patients, 17 (25%) patients were not willing to receive any treatment or psychoeducation.

Signed informed consent was obtained from each participant. Patients who participated in the study were military personnel and their family members who were diagnosed as having earthquake-related PTSD, with 78.4% (n = 40) of the participants living in the epicentre of the earthquake area (Izmit, Gölçük, Yalova, Bolu) when the earthquake occurred. After the first introduction interview, 21 patients (41.2%) were assigned to the psychoeducation and medication group, 16 (31.3%) patients were assigned to the medication-only group and 14 (27.5%) patients to the psychoeducation group.

Structure of psychoeducation intervention

Six sessions were conducted, each approximately one week apart. The content of the psychoeducation was based on problem-solving stages and the progress was achieved by interviews based on Peplau’s interpersonal relationship model (Molloy 1999). The sessions were usually 60–90 minutes in length. Posttests were administered one week after the sixth session.

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![Figure 1 Protocol for assignment to the intervention groups.](image-url)
The interviews were planned and executed in the following way:

First interview
Patients were interviewed on their opinions, feelings and beliefs on the traumatic experience and what it signifies to him/her. The interviews were documented by the investigator as short notes. During the interviews, questions about the subject matter were directed to patients and the accumulated information was evaluated by the investigator and categorized under the headings of data collection forms.

Second interview
Information was provided to the patients on the reason, nature, symptoms and treatment methods of PTSD and their questions were answered. The first step in helping these patients is to define key symptoms. The changes in the lifestyle of patients, feelings, opinion and behavioural reactions caused by the illness were discussed in this session.

Third interview
Information about stress and coping with stress were provided by summarizing the previous interview. The coping methods used by the patients before the trauma, the current coping methods and how they perceived them were discussed.

Fourth interview
The previous interview was summarized with the patient and information about problem-solving concept and stages provided. The opinion and beliefs of the patient about the subject matter were asked for afterwards. By asking the patient to rank the currently perceived problematic situations (due to disorder or other), the problems were redefined as resolvable or concrete problems. Information about target determination and choosing attainable and realistic targets and alternatives was then given.

Fifth interview
The goals and alternatives chosen with the patient were studied. What to pay attention to when determining targets and alternatives was emphasized. The time to reach the target was stressed and the patient asked to work on putting these into practice.

Sixth interview
Information about evaluating results was provided and the problems faced during the application and their reasons and the developments were discussed. The process during the programme in general was reviewed and the opinion of the patient was taken. At the end of the interview, the tests were applied again. The scales were reapplied to the individuals present in the comparison group and not receiving any treatment 6–8 weeks after the first test was applied.

The framework of the interviews was developed and defined according to Peplau’s developmental nursing model. The tests applied are equivalent to ‘orientation’ for the first meeting, ‘definition’ for the second and third interviews, ‘benefiting’ for the fourth and fifth interviews and ‘resolution’ for the sixth interview. The interviews were documented according to the recommended SOAP format. In this format (S) stands for the subjective life explained by patient, (O) stands for the objective observation of the nurse, (A) stands for assessment or in other words data accumulation and analysis and (P) stands for the action plan decided upon (Pearson et al. 1996, Ryles 1998, Birol 2000). The content of the sessions is summarised in Fig. 2.

Measures
Post-traumatic stress disorder symptom severity, depression level and coping strategies were the outcome measures of this study. To measure these outcomes, the Clinician Administered PTSD Scale (CAPS), Hamilton Depression Scale (HDS) and Coping Strategies Scale (CSS) were used. As depression is the most common co-morbid disorder with PTSD, it was measured to control for the confounding effect.

The patients were first assessed through the CAPS to obtain a symptom severity score. The CAPS contains 17 items for PTSD symptoms and the total score is obtained by adding frequency scores to severity scores (Blake et al. 1995, Aker et al. 1999). The HDS was then administered to identify the co-morbidity of depression. The HDS is a 17-item scale and measures severity and rates of depressive symptoms (Williams 1978, Akdemir et al. 1996). The CSS was next administered to evaluate the coping strategies of the participants. The CSS is a 33-item Likert scale consisting of three subscales: social support seeking, avoidance and problem solving. The reliability and validity studies of all scales have been conducted and published by Turkish researchers (Amirkhan 1994, Aysan 1994).

The data regarding factors that were addressed as contributing to PTSD symptom severity such as demographics (age, gender, marital status, economic status, psychiatric morbidity history), characteristics of traumatic experience (loss, having been trapped, physical injury) and life changes after the earthquake (relocation, resources of social support) were obtained by using a questionnaire.
Data analysis

The sample size for the analysis was 51 and this number was used for all analyses presented. The frequencies of demographics were first obtained and compared by intervention groups using the chi-squared test to evaluate the homogeneity of the groups; correlation analysis was then performed to evaluate the relationships between the PTSD symptoms and coping strategies; paired samples t-test was used following the intervention to evaluate the difference between pretests and post-tests in each intervention group; the effectiveness of the intervention approaches was evaluated with the univariate analysis of covariance (ANCOVA) by controlling pretests and multiple linear regression analysis was used to explain the effect of coping strategies on PTSD and depression scores.

Results

Characteristics of the patients and the traumatic experience

The mean age of the participants was 32.7 (SD = 12.7); none of participants was using any treatment when they participated in the study. The demographic characteristics of the participants are presented in Table 1.

The factors related to trauma severity and contributing to the symptomatology following the earthquake were as follows: 29.4% (n = 15) of the participants had been trapped under rubble, 31.4% (n = 16) had a physical injury, 70.6% (n = 36) had experienced loss of at least one acquaintance because of the earthquake and 45.1% (n = 23) reported ongoing financial difficulties after the earthquake. Thirty-eight of the participants (74.5%) reported that they had received insufficient social support after the earthquake. These answers were based on the participant's view.

There was no statistically significant difference among the three intervention groups when compared for participant characteristics except for education levels, having experienced loss and perceived economic distress. In addition, there was no difference among the groups regarding coping strategies. However, there was significant difference between the ‘medication only’ (M) group and ‘psychoeducation only’

![Figure 2](image-url) The content of psychoeducation sessions.

| Table 1: Characteristics of participants |
|---|---|
| | n | % |
| Gender | | |
| Male | 19 | 37.3 |
| Female | 32 | 62.7 |
| Education | | |
| < 8 years | 11 | 21.6 |
| 8–11 years | 25 | 49.0 |
| > 11 years | 15 | 29.4 |
| Marital status | | |
| Married | 23 | 43.1 |
| Single | 20 | 39.2 |
| Other | 8 | 15.7 |
| Location | | |
| Epicentre | 40 | 78.4 |
| Out of the epicentre | 11 | 21.6 |
| Psychiatric disorder history | | |
| Yes | 19 | 37.3 |
| No | 32 | 62.7 |
(PE) group when the post-traumatic stress scores (Bonferroni test \( F = -13.49, \) d.f. = 2, \( p = 0.045 \)) were compared and between the PE and PEM groups for depression scores \( (F = 7.66, \) d.f. = 2, \( p = 0.018) \). The participants in the PE group had lower mean scores. Hence, ANCOVA test was used to control that difference among the groups for the analysis of measurements in post-tests.

Pretest to post-test comparison of intervention groups

Table 2 displays the means and SD of the scores on the symptom and coping strategies scales. The paired samples \( t \)-test was used to compare the pretests and posttests despite the small sample size as the variances were homogeneous within the groups. Posttest scores of post-traumatic stress and depression were significantly lower compared with the pretests in all intervention groups, while problem-solving scores were higher in those participating in the PEM intervention. Social support-seeking scores increased in the M group and avoidance decreased in the PEM and M groups. There was no difference between pretests and posttests for coping strategies in the PE group (Table 2).

The univariate ANCOVA test was used for all posttest outcomes to evaluate the effectiveness of intervention. Table 3 shows the adjusted means of post-test scores by controlling for pretest scores. There were significant differences among the intervention groups in post-traumatic stress, depression and problem-solving approach scores.

There were significant differences between the PEM and M intervention groups in post-tests for PTSD, depression and problem-solving scores. The post-traumatic stress scores of the M group were significantly higher than the other two groups after the intervention and the PEM group differed significantly from the M group for depression and problem-solving scores. The depression scores were decreased and problem-solving scores were increased significantly in the PEM group. In general, there was no difference in outcome scores of the PE group compared with the other two intervention groups.

Correlation between the symptoms and coping strategies

In evaluating of pretests and post-tests, there was a statistically significant positive correlation between PTSD scores and depression scores (pretest, \( r = 0.618, p < 0.001 \); posttest, \( r = 0.676, p < 0.001 \)). Those who had lower avoidance tended to have higher social support-seeking scores \( (r = -0.391, \) \( p = 0.005) \), lower depression \( (r = 0.359, \) \( p = 0.010) \) and lower PTSD scores \( (r = 0.504, p < 0.001) \) on posttests. In addition, social support-seeking was also negatively correlated with PTSD scores \( (r = -0.363, \) \( p = 0.009) \), while those who had lower PTSD scores tended to have higher social support-seeking scores.

### Table 2 Pretest and post-test results

<table>
<thead>
<tr>
<th>Symptoms or Strategies</th>
<th>Pretest Mean (SD)</th>
<th>Post-test Mean (SD)</th>
<th>( t^* ) d.f.</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-traumatic stress</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoeducation + medication</td>
<td>61.61 (12.77)</td>
<td>40.52 (13.37)</td>
<td>9.29</td>
<td>20</td>
</tr>
<tr>
<td>Medication only</td>
<td>63.06 (15.03)</td>
<td>52.93 (16.24)</td>
<td>7.58</td>
<td>15</td>
</tr>
<tr>
<td>Psychoeducation only</td>
<td>49.57 (16.67)</td>
<td>31.14 (16.33)</td>
<td>4.45</td>
<td>13</td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoeducation + medication</td>
<td>21.09 (9.50)</td>
<td>10.19 (3.17)</td>
<td>7.51</td>
<td>20</td>
</tr>
<tr>
<td>Medication only</td>
<td>17.56 (7.08)</td>
<td>12.93 (5.07)</td>
<td>4.58</td>
<td>15</td>
</tr>
<tr>
<td>Psychoeducation only</td>
<td>13.42 (7.19)</td>
<td>8.92 (4.46)</td>
<td>3.42</td>
<td>13</td>
</tr>
<tr>
<td>Problem-solving approach</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoeducation + medication</td>
<td>24.47 (6.93)</td>
<td>26.80 (3.61)</td>
<td>2.10</td>
<td>20</td>
</tr>
<tr>
<td>Medication only</td>
<td>24.31 (4.40)</td>
<td>24.37 (3.50)</td>
<td>0.083</td>
<td>15</td>
</tr>
<tr>
<td>Psychoeducation only</td>
<td>25.57 (4.44)</td>
<td>26.78 (4.50)</td>
<td>1.66</td>
<td>13</td>
</tr>
<tr>
<td>Social support-seeking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoeducation + medication</td>
<td>24.04 (4.97)</td>
<td>25.14 (4.40)</td>
<td>1.79</td>
<td>20</td>
</tr>
<tr>
<td>Medication only</td>
<td>23.06 (4.75)</td>
<td>25.18 (4.75)</td>
<td>1.57</td>
<td>15</td>
</tr>
<tr>
<td>Psychoeducation only</td>
<td>25.55 (5.06)</td>
<td>26.35 (4.16)</td>
<td>0.47</td>
<td>13</td>
</tr>
<tr>
<td>Avoidance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoeducation + medication</td>
<td>22.33 (3.63)</td>
<td>21.33 (4.07)</td>
<td>2.35</td>
<td>20</td>
</tr>
<tr>
<td>Medication only</td>
<td>24.81 (3.60)</td>
<td>23.37 (2.65)</td>
<td>2.43</td>
<td>15</td>
</tr>
<tr>
<td>Psychoeducation only</td>
<td>21.78 (4.20)</td>
<td>21.35 (3.87)</td>
<td>0.777</td>
<td>13</td>
</tr>
</tbody>
</table>

*Paired samples \( t \)-test.
Multiple linear regression analysis was applied to analyse the effect of coping strategies on PTSD and depression scores. Problem-solving, social support-seeking and avoidance together showed significant correlation with PTSD ($R = 0.570$, $R^2 = 0.324$, $F = 7.52$, $p = 0.000$) and depression scores ($R = 0.396$, $R^2 = 0.157$, $p < 0.05$). Overall, coping strategies explained 32% of the total variance in the PTSD scores and 15% of the total variance in the depression scores. Avoidance scores shows positive and moderate correlation with the PTSD and depression scores (Table 4). Avoidance had a particularly important effect on PTSD symptom severity and depression scores ($p < 0.05$).

**Discussion**

Life-threatening and overwhelming situations can destroy the pre-existing coping skills of individuals and new coping strategies are needed to provide dramatic changes. Anxiety and hyperarousal lead to dependent behaviour and decreased autonomy and Başoğlu et al. (2003) and Livanou et al. (2002a,b) have recommended focusing on the individuals’ sense of control for treatment approaches for patients with PTSD. As Peplau indicated, the nurse’s role is to facilitate the transfer of energy made available by anxiety to adaptive help-seeking behaviours and coping strategies and an intervention model based on this nursing model and problem solving can be supportive for these patients (Molloy 1999). However, it is important to remember that this may not be sufficient if the symptoms are persistent and repetitive. As the nature of PTSD is persistent and long term, medical treatment combined with a psychosocial approach is considered more useful for these patients.

The present study showed that PTSD and depression scores decreased significantly in each intervention group following the interventions. The patients in the PEM group had the greatest decrease in symptom level and took advantage of psychoeducation; both measures of PTSD and depression were significantly decreased and avoidance scores decreased as problem-solving scores increased in this group. In the M group, social support-seeking scores increased in contrast to the other two groups, but no significant improvements were evident in the PE group, compared with the coping strategies...
in this study. As stated in several studies, persons with PTSD are most likely to benefit from combined therapies, as psychopharmacological treatment decreases anxiety levels quickly (Davidson & Connor 1999, Foa et al. 1999, Aker 2000). Despite the decrease in symptom levels, PE intervention by itself did not change the coping strategies of the patients in this group. Overall, there was no difference in the PE group compared with the M and PEM groups in the post-test scores.

It may be postulated that, when anxiety in patients handled with a combined approach is treated with medication, the patient will benefit from the counselling to the extent desired and the changes in this group’s scores support this notion. The result obtained is consistent with other articles stating that Peplau’s theory is appropriate for short-term individual treatment of individuals with anxiety and depression (Ryles 1998).

The needs of individuals who experienced trauma vary. It is important to find methods for patients to control their own life (Clark 1997). Medication treatment together with counselling focusing on the individual’s needs will enable achieving positive results in these patients. Although medicines may be helpful, they constitute only one part of the treatment and listening to patients and explaining their situation, as can be provided by the nurse, are very important in PTSD (Petit 1991).

Even if these patients consciously leave behind the trauma, the anxiety and intense stimulation will remain. Persons regress to earlier periods in coping with post-traumatic stress. This situation shows itself in adults with dependency and the inability to take autonomous decisions (Van der Kolk, Van der Hart & Burbridge 1995, Yehuda 1999). Problem-solving is a behaviour that can be learned and even if the medication treats symptoms it may not be sufficient to provide problem-solving skills which will enable the individual to have long-term good health. In this study, medication together with this short-term counselling has enabled the reduction of symptoms and provided an increase in the patients’ problem-solving skills.

In terms of coping strategies, PTSD severity seems to be related to avoidance scores. Maladaptive coping strategies may be related to psychopathology as indicated by Holahan and Moos (1987). Social support has always been an important factor when coping with difficulties. As patients with PTSD suffer from avoidance, this symptom can appear as a coping but prevent seeking social support and help. A finding supporting this notion from our study was the increasing social support-seeking scores while avoidance was decreasing and increased social support-seeking correlated with lower PTSD scores. As avoidance decreased, PTSD severity was also decreasing indicating that PTSD severity can be reduced and chronicity may be prevented if avoidance can somehow be managed. On the other hand, Rabin and Nardi (1991) indicate that higher PTSD severity causes higher avoidance. Teaching adaptive coping strategies can therefore be an effective approach for individuals with PTSD who live in societies that use avoidance as a common coping strategy, as in Turkey. Persons should be taught that avoidance is not an effective coping strategy and contributes to symptom severity.

Conclusions

Participants who had psychoeducation and medication together benefited more than those on medication or psychoeducation only in this study. Psychoeducation had some positive effects on participants, but anxiety and hyperarousal are expected to create obstacles to learning and using adaptive coping strategies. An additional supportive and educational approach can therefore be more useful for these patients to get the added benefit of a rapid decrease of anxiety with medication. Despite the decrease in symptoms with medication, individuals still need to learn how to deal with new life situations and PTSD symptoms after a traumatic experience. Avoidance as a coping strategy influences the results of the interventions and nursing staff should be aware of how the patients deal with their difficulties and symptoms. The long-term effectiveness of the treatment approaches should to be investigated by follow-up studies.

All rates of PTSD symptoms and traumatic experience were based on self-report and the study used a small sample size that may have caused results to be underestimated. However, sample sizes of the groups were small but there were no difference among the groups regard to sociodemographic characteristics and this homogeneity among the groups provides the reliability of the statistics. On the other hand, as randomization is usually a challenge in these studies, the results should be supported by future studies. Finally, this study may be considered as an important contribution to the development of a nursing care model to help persons with PTSD.

Contributions

Study design: FO, HA, SH; data collection and analysis: FO, HA; and manuscript preparation: FO, SH.

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