Chapter 7: Discussion

The aim of the present control-trial study was to evaluate and compare the effectiveness of cognitive behavioral therapy (CBT) and eye movement desensitization and reprocessing (EMDR) in the treatment of child victims of domestic violence in Iran. The study aimed to find out the effectiveness of each treatment method and whether any difference occurred between CBT and EMDR in the treatment of the psychological sequelae of domestic violence. Another objective was to find out gender differences regarding the impact of domestic violence and effectiveness of both CBT and EMDR methods after treatment implementation. So gender differences on psychological variables were taken before and after each treatment. As this study was control-trial, so comparing three treatments condition was another purpose of the analysis. Another aim was to evaluate clinical significant changes. Evaluating the effect size of each treatment, frequency of participants who move from clinical picture to normal situation, and reliable significant changes were other aims of this study.

In this study, 422 students from four primary schools, were screened for victims of domestic violence in a low socio-economic area of Kermanshah (city of Iran). Ultimately 102 students (51 girls and 51 boys), aged 8-12 years old, who fulfilled inclusion criteria were randomly assigned to one of the three groups viz. abuse focused CBT (25 subjects), abuse centered EMDR (24 subjects) or control group (53 subjects) conditions. Subjects were equally distributed regarding gender, age and grade within treatment groups. Demographic characteristics showed that dual exposure (both physical abuse and inter parental violence) was almost equally distributed within the groups viz. CBT, EMDR and control.
Statistical analyses included t-test for pair and independent groups and ANOVA to study significance of differences. Cohen’s d, effect size and Reliable Change Index (RCI) were applied to determine clinical significance on the measured variables respectively. Pearson chi-square was used to examine both statistical and clinical significance on measured variables viz. CROPS and PROPS and their factors, Rutter and also average, dictation and math marks.

Pair t-ratio was applied to examine significance of differences between pre and post assessment of CBT, EMDR and control groups on the measured variables viz. CROPS and PROPS and their factors, Rutter scale and also average, dictation and math marks. Independent t-ratio was used to find out the significance of differences between CBT and control, EMDR and control and CBT and EMDR on the measured variables viz. CROPS and PROPS and their factors, Rutter and average, dictation and math. It was also used to compare boys and girls of each group on the measured variables viz. CROPS and PROPS and their factors, Rutter and average, dictation and math marks.

One way ANOVA was used to examine three treatment condition included CBT, EMDR and control to find out significance of differences between them on the measured variables viz. CROPS, PROPS and their factors, Rutter test and average, math and dictation marks.

Pearson chi-square was used to find out significance of differences between out and under the cut off point scores of PROPS, CROPS and Rutter by subjects (case or control), treatment (CBT, EMDR or control), age, gender, grade and kind of violence.
before and after treatment. It was also used to find out significance of differences of
normality rate and suggest clinical significance of reliable change index (RCI).

In this study, both Cohen’s d indicator of effect size correlation (between CBT or
EMDR and control) and incremental indicator of effect size correlation (between CBT
and EMDR or boys and girls) were examined to find clinical significance on the
measured variables viz. CROPS and PROPS and their factors, Rutter and average,
dictation and math.

Reliable change index (RCI) was applied to find out clinical significance on the
measured variables viz. CROPS, PROPS and Rutter.

Pre - Treatment Condition

Pre - treatment condition was examined by applying t-ratio, ANOVA and Pearson chi-
square on the measured variables viz. CROPS, PROPS and Rutter and academic
performance. In fact, these analyses revealed parallel results on the mentioned
measured variables. Overall, comparing CBT, EMDR and control groups suggested that
although all of them clinically got out of cut off point of means scores on CROPS,
PROPS or Rutter, but CBT group got the worst clinical features on parent reports of
intrinsic symptoms in comparison with control group. This might be due to highest
frequency of child physical abuse in CBT group. The result is in accordance to Finzi,
Ram, Shnit and Har-Even (2001) study which found that, school age victims of physical
abuse may exhibit feeling of internalizing symptoms such as hopelessness, depressive
symptoms, suicidality and feeling of low self worth. Hence, it could be concluded that
groups’ psychological features were clinically severe, thereby, requiring psychological
intervention.
The groups did not differ significantly at pre-treatment on age, grade, sex, socioeconomic status, type, severity, amount of child physical abuse and inter parental violence. Besides, all three groups did not have significant differences regarding participants’ frequency with out of cut off point scores on measured variables. Yet, three groups were very similar regarding psychological outcomes of domestic violence on measured variables viz. CROPS, PROPS and Rutter and academic performance, so they did not differ significantly at pre-treatment on scores of any outcome measures.

Effectiveness of CBT
Comparing pre and post treatment. It was expected that CBT as compared to the pre-treatment condition, would be effective in the treatment of the psychological Sequelae of domestic violence (H1). Comparing before and after treatment in CBT group has shown that in comparison with pre-treatment evaluation, children not only significantly improved on CROPS and PROPS and related factors, but also their scores after treatment averagely got less than cut off point on the CROPS and PROPS. This result is in line with Swenson, Schaeffer, Henggeler, Faldowski, and Mayhew (2010) and Kolko, Iselin and Gully (2011) which suggested that physically abused children significantly improved after abuse focused CBT. Also it was in accordance to Gillies, Taylor, Gray, O’Brien and D’Abrew (2012) meta-analysis, wherein they concluded that there was evidence for the effectiveness of psychological therapies, particularly CBT, for treating PTSD in children and adolescents. However, comparing pre and post treatment scores of CROPS showed that after treatment, most of children significantly moved from clinical to normal situation but on the PROPS although after treatment more children moved to normal situation yet as in pre treatment, most of them were in out of
cut off point situation. So, comparing pre and post treatment effects of CBT showed that although subjects significantly ameliorated and also most of them reached the normal state on children reports of posttraumatic symptoms, but moving from clinical to normal situation did not happened in most of them from the parents' points of view. Moreover, this less remission rate on the PROPS, at least in part, depended on the nature of the study population, as CBT effectiveness was inversely related to severity of overall pretreatment measures which was suggested on PROPS in this group. In addition, analyses suggested that all of CBT participants had been physically abused by their parents which may explain the above result. Because parents who believe in the appropriateness of strict physical discipline and who also have high expectations of their children's behavior are more likely to engage in harsh parenting. Indeed, in suggesting the presence of negative child perceptions, these constructs imply that parents may view their children with limited acceptance or positivity, which, in turn, may influence their actual management practices at home (Kolko, 1996a).

There was no significant effect of CBT on teachers' reports of students' problems ratings. In fact, after treatment, Rutter's mean score of classroom behavior rating decreased but still was out of cut off point. However, using pair t-test did not show any significant differences. Using Pearson chi-square suggested that in post treatment like pre treatment, most of the subjects were non-significantly under the cut off point and CBT could not affect teachers' view on children classroom behavior. This result might be due to teachers' deficit observation of children that happened due to schools summer vacation which started in the middle of the treatment and caused gap in relationship between teachers and students. It could be also related to healing speed of
CBT which is slow and absolutely depends on more therapy sessions requiring collaboration of both child and parents. This result is in accordance to Heskett (1990) and Kolko (1996a) which suggested that abusive parents may exhibit limited attention to their children, as reflected by low levels of positive affect and social behavior, poor problem solving, and less attention-directing verbal and physical strategies.

Interestingly, CBT affected subjects’ marks as their math and also average marks significantly improved after treatment. So, it might be said that CBT was totally effective on children academic performance which was the main concern of the parents and teachers in this study. However, this result contradicted the results of Stein et al. (2003) study that suggested no significant effect of CBT on academic performance of subjects.

Yet, the hypothesis (H1) is supported. CBT in comparison with pre treatment was effective in the treatment of the psychological sequelae of domestic violence on the measured variables viz. CROPS and PROPS and their factors and also math and average scores significantly. However, it was non significant in case of Rutter and dictation.

Comparing CBT and control group. It was expected that CBT as compared to the no treatment group (control group), would be effective in the treatment of the psychological sequelae of domestic violence (H2). Using t-test for independent groups showed that in comparison with control group, children who were assigned to CBT treatment improved considerably. Parents and children’s reports of post traumatic symptoms showed that CBT effectively reduced children’s psychological symptoms viz. psychosomatic, avoidance thoughts, intrinsic and extrinsic symptoms significantly. Depression and guilt
feeling improved significantly. Whilst in pre-treatment assessing, CBT group’s subjects and their parents almost reported worse but non significant influences in psychological symptoms. Hence, it may be concluded that, in comparison with control group, although children in CBT group had more severe post traumatic symptoms but significantly ameliorated after treatment implementation. The results suggested the effectiveness of trauma (abuse) focused CBT on victims of domestic violence. Hence, this study is in line with findings of Kolko (1996b), Nemeroff et al. (2003), Stein et al. (2003), Silverman et al. (2008), Carrion sand Hull (2009) studies and Hetzel-Riggin, Brausch and Montgomery’s (2007) meta-analysis which revealed that in all of them, children and adolescent victims of domestic violence curved significantly from psychological symptoms after been treated by CBT. This is also in line with James, Soler and Weatherall (2005) meta-analysis and Kar’s (2011) study, which indicated that traumatized children improved after trauma focused CBT as compared to control group. In addition, results suggested that CBT participants as compared to control group, significantly had higher remission rate on the effect of CROPS and PROPS. This result is in accordance to Cohen, Mannarino and Iyengar (2011) and Jansen et al. (2012) studies which concluded that the trauma focused CBT completers experienced significantly greater IPV related-PTDS diagnostic remission.

In order to examine clinical changes, effect size was used to quantifying the size of the difference between two groups. Cohen’s d effect size measures efficiency of treatment once it compares CBT with control group. CBT group in comparison with control group, revealed that effect size was moderate to high for both parents and children reports of posttraumatic symptoms. In other words, PROPS revealed moderate
to high effect size on the all its triple factors which included intrinsic, extrinsic and psychosomatic symptoms. However, children reports of posttraumatic symptoms showed moderate to high effect size in avoidance thought, and small to moderate effect size in depression and psychosomatic symptoms. Hence, in overall parents and children reports showed moderate to high effect size which meant that children greatly benefited from CBT in comparison with the control group. This result is in line with some previous randomized controlled studies like Kowalik, Weller, Venter and Drachman (2011) which had found CBT with moderate to high effect size as a gold (clinical) standard treatment for childhood posttraumatic stress disorder (PTSD). This result also comparable with Smith et al. (2012) who in their review found that a small number of dissemination studies indicate that trauma focused CBT can be effective when delivered in school and community settings.

Using independent t-test showed that there was no significant difference between CBT and control group on the Rutter. In CBT group, Rutter’s mean was out of cut off point in baseline and post assessment, but in control group it was under the cut off point in both pre and post assessment. On the other hand, in both CBT and control, on both pre and post-treatment assessment, most percentage of subjects were under the cut off point of Rutter (even after treatment two boys moved to out of cut off point situation). However, using Pearson chi-square suggested no significant differences between both groups. Even, using Cohens ‘d suggested that teachers reports of problematic behavior in classroom and academic performance did not show effect of CBT in comparison with control group and had low practical significance.
This result could be associated to teachers’ deficit observation of children due to summer holidays in the middle of treatment phases. Another reason might be related to the nature of population who had higher than control group scores which adversely effected the treatment results. However, this result is comparable with Stein et al. (2003), in which subjects did not show significant differences for teacher-reported classroom problems (includes learning problems, acting out behaviors and shyness/anxious). Besides, as CBT group had more victims of CPA than control, so another explanation may associate with these children general behavior. In accordance to finding of Sterne, Poole, Chadwick, Lawler, and Dodd (2010), teachers often remark how difficult it is to identify any particular trigger to a behavior outburst of these children; an innocuous comment may touch a raw nerve; a seemingly minor incident may provoke stress or panic. For example, a child might not have heard the teacher’s instructions so cannot start his/her work; might be stuck; over- react to a negative comment from a peer; or be thrown by a change of routine. Some children may respond to threatening or stressful situations by going into ‘fight’ mode and become aggressive and hostile; others may take flight and run out of a lesson or out of school. These children may be particularly sensitive to shouting, angry adult interactions and to physical contact. They are more likely than other children to interpret their teachers and peers as having hostile intent.

Although subjects’ marks such as math and average, significantly improved in comparison with before the treatment condition, however using t-test for independent groups showed that in comparison with control group there was higher but non-significant changes in exams results. So, it could be said that CBT could improve
academic performance that probably was related to parents’ participation in treatment sessions which were held in schools, and caused more relationship and collaboration with concerned teachers. However, this non-significant priority regarding the academic performance in CBT group may be related to higher CPA frequency in comparison to control group. Because it could be difficult for children to concentrate in school, when they were living in fear. According to Kolko (1996a) academic performance is another area of substantiated difficulty in physically abused children. Thereby, they display poor school achievement and adjustment, score lower on reading and math tests, exhibit more learning disabilities. Besides, the likelihood of child physical maltreatment is totally associated with other psychological or contextual factors like parents’ general aggressiveness, maternal depression, poverty, poor parenting practices, low social support/competence, and stress (Straus and Smith, 1990). This could also explain the above results of the present study.

Nevertheless, it may be concluded that greater improvement than what can be expected from natural recovery happened, and therefore, this hypothesis (H2) is supported and CBT in comparison with control group was found to be effective in the treatment of the psychological sequelae of domestic violence on the measured variables viz. CROPS and PROPS and their factors significantly. However, it was not significant in case of and Rutter, math, average and dictation. However, the novelty was that CBT effect size on domestically violent children was practically moderate to high.

Effectiveness of EMDR

Comparing pre and post treatment. It was expected that EMDR as compared to the pre-treatment condition, would be effective in the treatment of the psychological
sequelae of domestic violence (H3) Results showed that in comparison with baseline scores, children not only significantly improved on CROPS and PROPS but also their scores after treatment averagely got under the cut off point on the CROPS, PROPS and Rutter. These results are in line with Chemtob, Nakashima and Carlson (2002) study that found EMDR as effective treatment for children with disaster-related PTSD who had not responded to another intervention, and Jaberghaderi et al. (2004) which suggested the effectiveness of EMDR on children victims of sexual abuse in Iran, and also by studies of Vander Kolk et al. (2007), Ahmad and Sundelin-Wahlsten (2008), and Bae, Kim and Park (2008).

Results showed that children’s classroom behavior improved non-significantly after treatment. It was also suggested that, after the treatment, the subjects moved to normal situation non significantly. This result probably related to teachers deficit relationship with children due to summer vacation. It might also be related to teachers’ expectations of treatment that related to better academic performance (and affected Rutter test results). But, as the academic performance was evaluated through the final exams, thereby it could not affect the teachers’ view. Another reason may relate to the frequency of IPV which was in highest rate within EMDR group. In fact, living in abusive families, may expose the participants to experience numerous children and parents’ stressors and social disadvantages. Presence of violence in one’s family relationship increases the risk that there will be violence in others. For example, children in homes with violence between their parents are more likely to experience violence than children who grow up in homes where there is no such violence. Moreover, children who witness and experience violence are more likely to use violence toward their
siblings and peers than other children who do not experience or see violence in their homes (Chalk and King, 1998). Yet, it may have increased their maladjustment and violent behavior in classroom situation and affected teachers point of view.

After treatment EMDR group’s marks of math and average scored better but dictation got worse than baseline. By considering the importance of final exams, it may mean that, EMDR, at least in part, could improve subjects’ academic performance because except dictation other marks increased. This result might also happen due to the nature of treatment which does not need parents’ attendance in treatment sessions. Thus this takes them away from children’s’ academic condition. Besides, this result may be explained by interpersonal transaction theories, that the reciprocal nature of the parent-child relationship initiates and maintains abusive and neglectful patterns of behavior (Wolf, 1987) and cognitive behavioral model that posits the influence of parents’ cognitive and behavioral deficits in helping their children to negotiate developmental tasks (Kolko, 1996 a).

Nevertheless, this hypothesis (H3) is supported and EMDR in comparison with pre treatment was effective in the treatment of the psychological sequelae of domestic violence on the measured variables viz. CROPS and PROPS and their factors and was not significant in Rutter and academic performance.

Comparing EMDR and control group. It was expected that EMDR as compared to no treatment group (control group), would be effective in the treatment of the psychological sequelae of domestic violence (H4). Results showed that EMDR was considerably effective in comparison with control group. In other words, there was significant
difference between those who were assigned to EMDR versus those who were in no treatment condition. Applying t-ratio demonstrated that EMDR effectively curved children’s psychological symptoms as their avoidance thoughts, depression and guilty feeling, PTSD, intrinsic and extrinsic symptoms significantly and psychosomatic symptoms mostly improved. Pre treatment assessing revealed that in EMDR group although children in comparison with control group showed worst but non significant clinical features. However, after treatment, they not only significantly curved as compared to their control group but their scores also got under the cut off point. These results are in line with Ahmad, Larsson and Sundelin-Whalsten (2007), Hensel (2009) control-trial studies and Bae, Kim and Park (2008) case study which revealed that EMDR treatment could curve PTSD symptoms effectively and remise depression symptoms totally. It was comparable with Kemp, Drummond and McDermott (2009) study which showed that subjects (who were motor vehicles child’s victims) might be initially met two or more PTSD criteria. But, after EMDR treatment, these criteria decreased to 25% in the EMDR group but remained at 100% in the wait-list group.

Results, showed that EMDR remission rate was significantly higher than those of control. This finding is in line with some previous randomized controlled studies (Puffer, Greenwald and Elrod, 1997 and Jaberghaderi et al., 2004).

Effect size was used to quantify the clinical size of the difference between EMDR and control. In EMDR group, it has been demonstrated that in comparison with control group, effect size was high for both PROPS and CROPS. EMDR showed high practical significance on extrinsic symptoms, moderate to high in intrinsic and moderate to small in psycho-somatic symptoms of PROPS. Children reports of posttraumatic symptoms
showed moderate to high effect size in depression, guilty feeling and avoidance thoughts and small to moderate size effect in psychosomatic symptoms. So it was indicated that children who received EMDR appear to benefit highly from treatment which is comparable with several meta-analysis studies of EMDR in adult studies (Bradley, Greene, Russ, Dutra and Westen, 2005; Davidson and Parker, 2001; Van Etten and Taylor, 1998) and also Rodenburg, Benjamin, Roos, Meijer and Stams (2009) and Rolfsnes and Idsoe (2011) meta-analyses which suggested moderate size effect of EMDR in children studies. According to Rodenburg, Benjamin, Roos, Meijer and Stams (2009) studies which use parent and child combination reports of posttraumatic symptoms suggested moderate to high size effect that is also demonstrated in this study.

Results also suggested that, teachers’ reports of children’s problem did not change significantly after delivering the treatment, although both EMDR and control group had under the cut off point scores in pre and post assessment, however, both groups improved non significantly from the teachers’ point of view. Using Cohens’d also detected that teachers reports of problematic behavior in classroom did not improve by EMDR in comparison with control and had low practical significance. This result may be due to number of reasons. Firstly, teachers’ expectations of treatments, was absolutely related to academic performance. This result can probably be described by considering both the higher rate of IPV among this group and mothers’ important role (as the most responsible person) regarding children’s school achievement in Iran. This is, because, domestic violence could severely undermine a mother’s ability to parent (Sterne, Poole, Chadwick, Lawler, and Dodd, 2010). However, according to Chalk and King (1998),
children who witness and experience IPV are more likely to use violence towards their grownups, peers and sibling. In fact, they have difficulties containing their anger, including exclusion from lessons and fixed-term or permanent exclusion. Severe behavior outbursts are indicators of unbearable levels of tension. Another reason may, at least in part, concerned to Rutter’s scores level which was already under cut off point and, at least in part, did not need to change after EMDR implementation.

Results, showed that EMDR could not improve children marks significantly in comparison with control group and baseline marks. However, all the pre and post marks of EMDR group were higher than control, both group scores of math and average got better. But in EMDR group, even dictation got worse than baseline. Using Cohens’d suggested that academic performance had small to moderate effect size versus control group which means EMDR could, at least in part, improve children final marks. As treatment gains of EMDR were reached in fewer sessions and before final exams, so it might be suggested that EMDR could not applied to directly improve the children’s school marks. The psycho-social status of EMDR group could also be a contributed factor. In fact, despite of almost equal socio-economic status of all three groups, there were more separated mothers and addicted fathers that probably associated with higher rate of IPV in this group. On one hand, in such male dominant culture in any marital conflict, it is more likely that mother be a battered woman victim. On the other hand, in Iranian culture, in most of families, mothers are the most responsible persons who should care, read and face the situational problems of children. In the present research, mothers were also recognized as the most responsible persons in the family (who were present in therapy sessions and initial and post assessment), but were found to be more
aggressive toward their children than fathers. Battered mothers as dependent, having low esteem, and feeling inadequate and helpless and reported a high incidence of depression and anxiety among clinical samples (Hotaling and Sugarman, 1990). So, in this situation, being in abusive family and having few psycho-social and economical resources may overwhelm child care responsibilities for mothers. Another reason may relate to the treatment content that generally does not involve parents in the treatment sessions.

So, it may have concluded that EMDR lead to greater improvement than control group, therefore the hypothesis (H4) is supported. EMDR is effective in the treatment of the psychological sequelae of domestic violence on the measured variables viz. CROPS and PROPS significantly and Rutter, math, dictation and average non-significantly and also EMDR effect size was moderate to highly practical efficacious in treating psychological sequelae of victims of domestic violence on the measured variables.

**Comparison of CBT and EMDR**

CBT and EMDR were expected to show differential effects in the treatment of psychological sequelae of domestic violence in children (H5). Using independent t-test for comparing CBT and EMDR showed that there were not significant differences between two groups before and after applying the treatments. However, CBT group in pre and post assessments on the Impact of parent and children reports of posttraumatic symptoms (PROPS and CROPS) and Rutter’s test almost got higher scores and on academic performance lower marks than EMDR group. Hence, it could be concluded although the differences between two groups were not significant but EMDR group got
better non-significant clinical and academic state than CBT group before and after applying the treatments. Although this result is in line with Jaberghaderi et al. (2004) study in which a non significant trend on self reported posttraumatic stress symptoms favored EMDR over CBT. But one reason might be, at least in part, related to the nature of the study population that was inversely related to severity of overall pretreatment measures. Small number of participants may also have resulted in a lack of sufficient power and sensitivity to detect more differences between the groups. Nevertheless, the results bode well in the light of the large treatment needs among traumatized children worldwide and are consistent with data on adult studies on CBT and EMDR, in that both methods were efficacious (Bisson et al., 2007; Rodenberg et al., 2009).

In addition, finding that treatment gains of EMDR were reached in fewer sessions than those of CBT is in line with some previous randomized controlled studies comparing CBT and EMDR (Jaberghaderi et al., 2004, de Roos et al., 2011, Nijdam, et al., 2012).

Considering pre and post treatment scores in all three conditions viz. CBT, EMDR and control, revealed that in pre-assessment CBT and after that control had the worse clinical situation on measured variables viz. CROPS and PROPS. However, post-assessment demonstrated that EMDR group had the best clinical situation on CROPS and PROPS. All the treatment’s conditions, did not have significant differences in treating psychosomatic symptoms of CROPS. On the PROPS, using ANOVA confirmed that by implementing EMDR, participants significantly improved from intrinsic symptoms and by using CBT children significantly curved from psychosomatic symptoms. However, both treatments in comparison with control were significantly more effective in
remission of extrinsic symptoms. Hence by considering all three treatments conditions and using ANOVA it was revealed that although there was not significant differences between EMDR and CBT regarding CROPS and PROPS’s results but EMDR curved depression, guilty feeling and avoidance symptoms significantly better than control and both EMDR and CBT significantly acted better than control on the PROPS. On school performance viz. dictation, math and average’s marks, in both pre and post assessment, EMDR had the highest and CBT had the lowest scores respectively. On the Rutter in both pre and post assessment, CBT had the highest and control had the lowest scores. In other words, treatments could not significantly improve teachers’ reports of children behavior in the classroom situation and their academic achievement.

As, almost all of the participants were from low socioeconomic situation and living in a slum area of Kermanshah (city of Iran). This result might associate with low socio-economic status and high rate of domestic violence within subjects. Severe violence toward children is more likely in poor families who have fewer economic and social resources to help with child care responsibilities, especially among those who are least able to cope with the problematic situation of their children (Gelles and Straus, 1988) like low school marks and classroom behavioral problems in this study. In Iranian families, although parenting is kind of child centered but in problematic situations still physical abuse and verbal aggression (saying bad words, comparison, or/and humiliation) are prevalent. In the present study mothers assessed as the most responsible persons in the family but were found to be less educated (mostly were illiterate) and more aggressive than fathers. However, In Iran, because of patronage rule and family privacy culture, families are not to be in contact with social service...
agencies and scrutiny, thereby they will not be reported for abuse or neglect and even interpersonal violence. Yet, in Iran, although schools are only way to access these children but still the violent situation so complicated and does not let school staff to interfere without the patron allowance. On the other hand, it can be difficult for children who are living in fear to concentrate in school. Traumatized children with long-term anxieties may seem to be in a continual state of high arousal. Teachers will be familiar with the child who cannot keep still; who may be fiddling, rocking on their chair, turning round and out of their seat. Some children behave impulsively: shouting out, poking others, lashing out or destroying their work. Some children grow up with the core beliefs ‘I am never safe’ and ‘I must always be on my guard’. They may be ‘hypervigilant’, continually scanning the class, distracted from their work. Some may crave adult attention and behave so as to get it; negative attention being better than no attention. These children can be wearing for staff, and their behavior impacts heavily on their learning and that of others (Sterne, Poole, Chadwick, Lawler, and Dodd, 2010).

EMDR group moved from clinical to normal levels on the parent and children reports of posttraumatic symptoms (PROPS and CROPS) and Rutter’s test, but CBT group got to normal level on CROPS and closed to normality on parent reports of posttraumatic symptoms. Hence, not only both treatments remission rate on PTSD, depression and anxiety symptoms were high but also there were not statistically significant differences between two groups. This result is in line with Bisson et al. (2007) and Wanders, Serra, and de Jongh (2008) studies and Ehlers, Bisson and Clark (2009) Rodenberg , Benjamin, Roos, Meijer and Stams (2009) meta-analyses that in which EMDR acted better in comparison with established trauma treatment of CBT, and is
versus Mendes, Mello, Ventura, Passarela Cde and Mari Jde (2008) meta-analyses that in which CBT had better remission rate than EMDR and also comparable with de Roos et al. (2011) and Nijdam, Gersons, Reitsma, de Jongh and Olff (2012) which demonstrated that, although treatment gains of EMDR were reached in fewer sessions, but both treatments were equally effective in amelioration of children and adolescents following traumatic events.

As a lack of significant difference between two treatments in a given study needs to be interpreted in the context of overall effect sizes and comparisons against no treatment (Ehler and Clark, 2011). So, effect size was used to quantifying the size of the difference between two group viz. CBT and EMDR. The overall effect size for treatment group in comparison with control was moderate to high in both CROPS and PROPS. However, regarding the concerned factors in CROPS, children’s reports showed moderate to small effect size for depression symptoms but moderate to high practical significance for psychosomatic symptoms and avoidance thoughts. Parent reports of posttraumatic symptoms suggested high significant magnificence in psychosomatic and extrinsic symptoms and also moderate to high practical significance in intrinsic symptoms. So it may have indicated, in this study both treatments were efficacious in comparison with control group. Thus, according to Ehler and Clark (2011) treatments should be recommended cause they lead to greater improvement than what can be expected from natural recovery.

Using the term of incremental efficacy is for comparing two treatments groups with each other (CBT and EMDR). Parents and child reports of posttraumatic symptoms showed that EMDR in comparison with CBT added small to moderate significant
incremental effect size and this priority was on depression, guilty feeling and avoidance thoughts of CROPS. Besides, EMDR also added moderate to high practical significance on extrinsic symptoms of PROPS. Parents and children reports of posttraumatic symptoms suggested that CBT favored over EMDR in treating psychosomatic symptoms. However Cohen’s effect size value suggested that there was low practical significance of EMDR in comparison with CBT in treating intrinsic symptoms and also in children behavioral problems in classroom condition. However, children marks of math, dictation and also their average in EMDR group had small to moderate effect size in comparison with CBT. So it may have concluded when children treated with EMDR were compared to children treated with established trauma treatments (CBT), beside that both treatment were efficient in treating posttraumatic symptoms, EMDR adds a small to moderate practical significant incremental value which is in accordance with Rodenburg et al. (2009) meta-analysis and comparable with Jabergahdari et al.(2004) study that suggested EMDR non-significant favoring over CBT.

By considering before treatment condition which suggested low and moderate practical significance of EMDR on CROPS and PROPS respectively, it may be said although both treatments were efficient on PROPS but EMDR acted more efficiently on CROPS. Also in CBT group psychosomatic symptoms were effected small to moderate which can explain the priority of CBT effectiveness. Ultimately, before treatment, EMDR group’s effect size of depression, intrinsic and extrinsic symptoms and also average, dictation and math were small to moderate which was totally related to post treatment results of EMDR. So, it is concluded that both CBT and EMDR generated incremental efficacy in comparison with each other in treating psychological Sequelae of victims of
domestic violence. This result is comparable with Rolfsnes and Idsoe (2011) meta-
analysis of 19 studies which compared CBT and EMDR and found medium to large
effect size for both of them.

Reliable change (RC) index (Jacobson, Follette, and Revenstorf, 1984) as a way
to calculate the clinical significance of treatments methods was used and demonstrated
novel findings. It was suggested that clinically significant improvement happened in both
EMDR and CBT on the CROPS and PROPS significantly and on Rutter test non-
significantly. RCI revealed that both treatments were significantly more efficient in
treating children and parents reports of posttraumatic symptoms. However by
comparing three treating conditions, it was found that there was a significant differences
between them regarding both CROPS and PROPS variables. Most percentage of
subjects who clinically and significantly improved were belonged to EMDR and after that
to CBT group. This results was comparable with Jaberghaderi et al. (2004) which
suggested more participants with excess of 1.96 on the CROPS in EMDR group than
CBT and more on PROPS in CBT than EMDR.

So, it might be concluded that although CBT had a worse non-significant
situation than EMDR in both pre and post assessment, however this hypothesis (H5)
was not supported and there was not significant differences between CBT and EMDR in
treating psychological sequelae of victims of domestic violence on the measured
variables viz. CROPS, PROPS and Rutter, math, dictation and average. So, it may
have said, treatments were clinically efficacious but EMDR added a small to moderate
practical significant incremental value.

Comparison of Boys and Girls

Pre assessment of primary recognized victims of domestic violence. It was
expected that there will be gender differences on the psychological sequelae of domestic violence (H6). Overall, by considering all the primary recognized victims of domestic violence, it was suggested that boys significantly got worse clinical and academic status versus girls. In baseline assessment, although both groups got clinical status on CROPS and PROPS, yet parents reported significantly more psychological sequelae of domestic violence among boy victims. Hence, in comparison with girls, boys got significantly more intrinsic, extrinsic and psychosomatic symptoms on the parent point of view, however they did not report significantly different reports on the CROPS. This result is in contradiction with Sternberg, Lamb, Guterman and Abbott (2006) study which revealed that in domestic violence condition, girls were more at risk for internalizing and externalizing behavior problems than boys, and comparable with McDonald, Jouriles, Tart and Minze (2009) study which found that the relation of mother-child aggression to externalizing problems was stronger for boys than for girls and gender differences were not observed for internalizing problems or threat appraisals. Rutter test were significantly different within boys and girls. Boys not only were in clinical status (out of cut off point) but also got worse situation in classroom behavioral problems rating versus girls who even mostly were in normal state (under the cut off point). Hence, teachers had thought boy victims of domestic violence were more problematic than girls. Girls got better academic status than boys, they knew more math and also their marks in dictation and average were significantly higher than boys. So it could be concluded domestic violence also affected boys academicals status more than girls.

Yet, comparing all boys and girls whom recognized as victims of domestic
violence showed that except of depression and guilty feeling, girls generally had better adjustment with the violent condition of their families. Using independent t-test showed that parents were significantly more satisfied with their girls and much more worry about their boys’ behavior on all three factors of PROPS. This result is in contradiction with Aduriz, Knopfler and Bluthgen (2009) study and Rodenberg et al.(2009) meta-analysis that in which stated girls due to their biological differences are reacted more strongly to traumatic events and in risk for PTSD symptoms and also versus Vinayak, Jaberghaderi, Rezaee and Shakeri (2010) study in Kermanshah, Iran, which suggested in traumatic situation, girls significantly reported more post traumatic symptoms than boys. Considering that girls had a better academicals situation than boys, as they got significantly higher marks in dictation and average results and non-significantly higher marks in math was in accordance with Deb and Modak (2010) study which had been done in India and another in Colombia (Klevens, Bayon and Sierra, 2009) suggested that victims of domestic violence got poorer academic performance in comparison with non-violence-experienced children. Hence, it could be concluded, in over all the primary evaluation of victims of domestic violence suggested that boys had worse clinical and academicals situation than girls. Although using independent t-test to examine CROPS results showed girls were non-significantly more depressed and boys had more psychosomatic symptoms and avoidance thoughts but parents and teachers points of view suggested significantly more psychological and educational problems within boys. A number of studies reported adjustment problems, aggression, social withdrawal and feeling of insecurity among the children who witnessed violence in the family or/and physically abused (Holden and Ritchie, 1991; Davies and Cummings, 1994).
Besides the almost similar percentage of under or out of cut off point of CROPS results within boys and girls, results confirmed that gender could not significantly impact children reports of posttraumatic symptoms. However, parents reports of posttraumatic symptoms and teachers points on classroom problematic behavior showed that boys frequency with out of cut off point were significantly more than girls. This result was versus Vinayak and Jaberghaderi (2012) research in which girls’ scores of both CROPS and PROPS were out of cut off point and they also significantly reported more post traumatic symptoms than boys in comparable situation. This study was also comparable with Panter-Brick, Eggerman, Gonzalez and Safdar (2009) study in Afghanistan which was suggested that psychiatric rating within victims of violence associated with female. This discrepancy could also arise from smaller size and non-randomized sampling in this research that was not necessary for such control-trial study and also sampling place which was purposely chosen from a low socio-economic slum area of Kermanshah city, that children behavioral problems mostly confined to acts of domestic violence. So, ultimately it may have concluded that boys were more clinically and academically vulnerable in case of domestic violence, in other words, they were at more posttraumatic symptoms risks and had greater adjustment problems in coping with violent situation at home. Therefore, in parents and teachers point of view boys had more clinical and behavioral problem and worse academic situation than girls. A number of reasons must be recognized when considering the present findings. Firstly, this result may arise of the nature of domestic violence which was highly a combination of child physical abuse and inter parental violence (dual exposure), so that increased a child’s risk for internalizing and externalizing outcomes (Moylan et al., 2010). Secondly,
although, any aggression/violence has negative sequelae for children, but the nature of studied population was different as boys in Iranian culture are smacked more and severely being physically punished in comparison with girls, that is in accordance to Thompson, Kingree and Desai (2004) study which revealed that men were more likely than women to have experienced physical abuse during childhood. So, according to multivariate modeling of Bordin et al. (2009) this severe punishment is an independent correlate of comorbid internalizing and externalizing symptoms in them. Thirdly, another reason might be concerned to the abusive person. In the present study, mothers were more aggressive toward children than fathers and children were mostly smacked by their mothers. This is in accordance to McDonald, Jouriles, Tart and Minze (2009) study which revealed that the relation of mother-child aggression to externalizing problems was stronger for boys than for girls and gender differences were not observed for internalizing problems or threat appraisals. Finally, living in domestic violent circumstances might have made a dual detrimental situation for the boys because on one hand they believed physical punishment as a natural consequence of their false behavior that did not that harmful and confirmed their maleness. Due to generally male dominant situation of domestic violence in Iran, aggression positively correlates to maleness. So, boys accepted aggression toward themselves and others as a way to demonstrate male identity (Straus, 1980). On the other hand according to classical conditioning (O’Keefe and Treister, 1998) they not only learn to be victims but also learn to be violent through operant conditioning (Felson, 1992). In accordance to Bordin et al. (2009), child victims have limited ability to generate alternative solutions to social problems, focused only on negative solutions, believed in appropriates of violence as a
problem-solving technique and have little ability to identify nonaggressive solutions to social problems. So, in this study, violence caused more maladjustment in boys to deal with troublesome situation. Girls' population had different coping strategies to deal with domestic violent situation, they choose avoidance strategies that made them more depress and therefore silent in problematic situation. So, according to parents and teachers expectation of children were more obedient and got more support and encourage from them.

Comparing boys and girls in treatments groups viz. CBT, EMDR and control also showed that in pre-treatment condition boys got worse clinical feature than girls but most of these differences were non-significant. In CBT group parents reported significantly more psycho-somatic symptoms and in EMDR they not only reported more posttraumatic symptom but also more extrinsic problems within boys. In overall before treatment parents point of view about the boys were worse than girls particularly in EMDR group. This result is comparable with Kashani and Wesley (1998) study which concluded that children who have grown up in an abusive home whilst remaining a heterogeneous group, nevertheless have similarities in their responses at the time, and in the future

Hence, in this research boy victims of domestic violence on CROPS, non-significantly, and on parents' and teachers' point of view, significantly, had worse clinical feature than girls. So, the examined hypothesis (H6) is supported and as it expected there was gender differences on the psychological sequelae of domestic violence on the measured variables viz. CROPS, PROPS and Rutter and math, dictation and average.
Post assessment of treatment groups viz. CBT, EMDR and control. Boys and girls were expected to show differences in the efficacy of EMDR and CBT in the treatment of psychological sequelae of domestic violence (H7). In CBT group, using independent t-test for comparing boys and girls showed that boys got a worse clinical and academic status versus girls. In other words, in pre-assessment, both boys and girls were clinically required psychological intervention. Although before treatment, boys’ parents significantly reported further psychosomatic symptoms, however interestingly after implementing CBT, they did not have any significant differences with girls in this area and also other posttraumatic symptoms. In fact, after treatment, assessing showed that even boys mean on the CROPS was under the cut off point. Besides, it could have said after CBT implementation, girls moved from clinical to absolutely normal status and boys with higher baseline scores were totally normal on the CROPS and approximately normal on PROPS.

In the EMDR group, girls profited significantly more than boys. In fact, girls tremendously curved as they averagely moved from clinical to normal status. In other word, after implementing CBT, although both sexes reported under cut off point scores on the CROPS but boys’ parents averagely were not that satisfied with the treatment results. Considering baseline scores might have described this result, because basically boys’ scores were significantly higher than girls on the measured variable of PROPS, as parents significantly reported more posttraumatic symptoms that mostly related to extrinsic problematic behavior. Hence, it seems due to more severe clinical features in pre-assessment, boys improved less than girls on CROPS and PROPS after treatment. As on the Depression, PTSD, avoidance thoughts, intrinsic and psychosomatic
symptoms significantly and on the extrinsic problems approximately significant, girls were curved more than boys. This result is in contradiction with Rodenberg et al. (2009) meta-analysis that in which girls curved less in comparison with boys after EMDR implementation. This result may also arise from two reasons, firstly Iranian male dominant culture thereby aggression positively correlates to maleness (straus, 1980), where boys are more physically punished than girls (Jaberghaderi et al., 2006). Secondly their parents as abusers had negative cognitive- attributional styles or perceived their children in a more negative light than non abusive parents (Whipple and Webster-Stratton, 1991).

Teachers reported more behaviors problems in classroom among boys than girls in both EMDR and CBT groups. In CBT group, in pre and post assessment, boys had significantly higher baseline scores than girls. In EMDR group on one hand, boys had non significantly higher and out of cut off point scores before and after EMDR, on the other hand boys’ scores even got higher after treatment. However in contradiction, in both treating groups, girls’ behavior in the classroom situation not only improved but also neither before nor after, they did not have out of cut off point scores from the teachers’ point of view. Hence, while girls had less behavioral classroom problems on Rutter before and after treatments, teachers in both treating situation of CBT and EMDR reported worse clinical situation for boys. Yet, in both academic performance and extrinsic behaviors girls acted better than boys. This result may be associated with boys’ biological differences with girls and also the impacts of domestic violence on them. Operant conditioning may also explain this result because when abusive parents get what they want by mistreating others, children are likely to become even more
violent at home and school (Felson, 1992). Evolutionary theory by Barnett, Miller-Perrin and Perrin (2005), also can explain this result because obedience is valued most in highly structured hierarchical societies like Iranian schools where children expected to be more obedient. So, as boys showed more extrinsic symptoms than girls, it may more negative teachers’ point of view about them.

Girls got non-significant better academic situation than boys in baseline and after delivering both CBT and EMDR. In fact, in both gender except of dictation (which even decreased in girls of CBT group), marks non-significantly got higher after both treatments. In CBT, girls’ average marks after treatment significantly got higher than boys. So, it must be interpreted that CBT could impress other girls’ exams’ results (which did not measured in this study) more than math and dictation in comparison with boys. One reason might relate to girls’ parents who were more collaborative during treatment process. Another reason might associate with dropping out rate which was happened more within boys.

Effect size was used to quantifying the size of the difference between two groups viz. boys and girls in either CBT or EMDR. Using the term of incremental efficacy is for comparing two independent groups (girls and boys) of two treating situation with each other (CBT or EMDR). A significant moderate to high effect was found for gender. Girls in CBT group showed moderate to high Cohen’s D effect size on CROPS, PROPS and teachers reports of classroom behavior. In other word, in girls’ reports of posttraumatic symptoms, practical significance of depression, guilty feeling and avoidance thoughts was small to moderate and psychosomatic symptoms was moderate to high. However, their parents’ reports of psychosomatic and intrinsic symptoms demonstrated high and
moderate to high effect size respectively. Cohen’s effect size value revealed that boys of CBT group, lowly favored girls on extrinsic symptom. Girls’ marks of dictation and average highly and math small to moderately effected vs. boys in CBT group.

In EMDR group, girls showed moderate to high Cohen’s D effect size on CROPS, PROPS and Rutter. As a matter of fact, in EMDR group depression, guilty feeling and avoidance thoughts highly and psychosomatic symptoms moderately effected in girls reports of posttraumatic symptoms. Also intrinsic and psychosomatic symptoms got high practical significance in girls’ parents reports of posttraumatic symptoms. However extrinsic symptom in boys’ parents points of view moderate to highly effected in comparison with girls. Interestingly, although girls’ marks of average got moderate effect size but in dictation and math had low practical significance. So in overall, it could be concluded a trend for girls percentage was found, they highly to moderate effected in comparison with boys in both CBT and EMDR group, this result is confronted with Rodenburg, Benjamin, Roos, Meijer and Stams (2009) meta-analysis which indicated that that studies included higher percentage of girls yielded smaller effect size. It might be due to boys’ scores of mean in pre-treatment assessment which were generally non-significantly higher than girls. In other words, CBT and EMDR groups pre-treatment’s results suggested that while girls’ parents and their teachers reported moderate to high effect size, girls’ reports of posttraumatic symptoms favored small to moderately over boys. Apparently, it could be concluded post-treatment results of boys was inversely related to severity of overall pretreatment measures. It might also be concluded that, in a domestic violent environment girls adjusted better than boys and could have more benefited from treatments situations.
Using RCI demonstrated that there was a non-significant trend of girls’ improvement on the CROPS and Rutter and boys non-significantly improved more on the PROPS. Yet, girls non significantly had better clinical situation than boys. On the all three scales children of 11-12 years ages and fifth grade clinically improved more than others participants. This result probably related to their age range, thereby could more than others benefited from the treatment situations.

So, it could be concluded that this hypothesis (H7) supported and boys and girls showed differences in the efficacy of EMDR and CBT in the treatment of psychological sequelae of domestic violence on the measured variables viz. CROPS, PROPS and Rutter and math, dictation and average. In fact, after CBT implementation, although girls scores were more than boys but there was not significant differences between boys and girls regarding CROPS and PROPS, however girls showed significantly better academic and classroom behavior than boys. After EMDR implementation, there was significant differences between boys and girls on CROPS and PROPS, but on Rutter and academic performance, although girls scores was higher than boys but there was not significant differences between them. Moreover, CBT and EMDR generated different gender incremental efficacy in treating psychological sequelae of victims of domestic violence.

Other Aims of the Study

It was questioned that whether the remission rate of CROPS, PROPS and Rutter will be differed by the kind of treatment, number of treatment sessions, gender, age, grade and kind of domestic violence? To examine this question, Pearson chi-square
was used to consider clinical significance and to see how the mentioned indicators could effect the remission rate on measured variables viz. CROPS, PROPS and Rutter.

Results suggested that before implementing the treatments, although CROPS results were not significantly differentiated by gender, age, grade and type of violence in three treatments groups. But on PROPS, clinical situation of boys were worse than girls in both EMDR and control, however parents reported more psychological symptoms in their forth and fifth’s grade offspring. Teachers did not approve boys’ behavior in classroom and reported much more problems within them vs. girls. So, being boy and upper grade was equaled with worse clinical situation from parents and teachers point of view.

Post-treatments evaluation of CROPS showed significantly higher remission rate in both treatment groups vs. control. Although girls and 11-12 years old and 5th grade children got the highest percentage of remission rate, however these differences were only significant by age. This result is comparable with Panter-Brick et al. (2009) study which revealed that severity of post-traumatic stress disorder was also associated with child age. The non-significantly highest percentage of remission on CROPS was belonged to children who simultaneously physically abused and witnessed of parents conflict (dual exposure). Although most of remitted participants on CROPS passed more than 6 treating sessions, but number of sessions also was a non-significant indicator.

Post-treatment assessment of PROPS (as well as CROPS) showed highly percentage of treatment groups which were significantly remitted vs. control. EMDR group remission rate on PROPS was significantly higher than CBT. Girls’ remission rate on PROPS was almost twice the boys. In other words, parents’ points of view about the
treatment effects showed that girls improved significantly more than boys. After treatments implementation, 11-12 years old and fifth grade children showed much more (like CROPS) but non-significant improvement. In parents opinion most of improved children belonged to physically abused or simultaneously physically abused and witnessed of parents conflict (dual exposure), this result may be related to the progressive decrease of coercive behavior of parents against children, which happened during the treatment course.

Whenever more curved children passed more than 6 treatment session, number of session also (like CROPS) was a non-significant indicator on parent reports of posttraumatic symptoms. It may relate to CBT treatment duration that at least was 6 session vs. EMDR participants who might pass less than 6 sessions.

So, on the CROPS girls improved non-significantly and on the PROPS significantly more than boys. In addition, 11-12 years old participants on CROPS significantly and on PROPS non-significantly, more than others moved to normal situation. So, by considering fifth grade's participants' normality range after the treatment, it might say that older and also upper grades girls probably benefited more than others from treatment conditions. It might concern to the higher non-significant percentage of this group of children (aged 11-12 years and fifth grade) or/and their more cognitive and social abilities in this age in comparison with youngsters. There were not significant differences between EMDR, CBT and control groups on the teachers rating of problematic behavior of classroom situation. However girls' frequency of normal situation was significantly more than boys and also teachers were more satisfied with 11-12 years old and fifth grade of participants.
Considering the domestic violence classification in this research showed that most of subjects reported either physical abuse by parents, parent conflict or both of them. However, using chi-square revealed that CROPS, PROPS and Rutter results in pre-treatment condition were not significantly affected by the kind of domestic violence.

Assessing posttraumatic symptoms regarding type of domestic violence suggested that although type of domestic violence could not significantly effect CROPS and PROPS results. However, the type of domestic violence significantly affected teachers' reports of classroom behavior. Participants with history of both physical abuse and parent conflict had lower remission rate and children with only physical abuse history by parents, were significantly remitted more. It may be concluded that participants with only physical punishment, showed less classroom behavioral problems after treatment, whilst participants who had also experienced other kind of domestic violence which included inter parental violence had severe classroom problematic behavior. This result is comparable with Moylan et al. (2010) study which suggested that dual exposure could increase child's risk for internalizing and externalizing symptoms. This result probably related to the treatment content which obviously aimed to curve domestic violence psychological sequelae and also reduce CPA risks, but was not aimed to decrease parents' conflict.

Yet, it might be said, in the present study, on both CROPS and PROPS, treatment groups were significantly remitted vs. control group. Remission rate of CROPS was absolutely related to age and grade (older and fifth grade children benefited more) and on PROPS, was related to gender (being girl equaled with more improvement).
However remission rate of Rutter test depended to gender (being girl) and type of domestic violence (physically abused victims benefited more than others).

Overall, present investigation revealed that, both CBT and EMDR were efficacious in treatment of psychological sequelae of child victims of domestic violence. Besides, both treatments comparably generated substantial effect size. However, CBT and EMDR generated different gender incremental efficacy in treating psychological sequelae of victims of domestic violence. Gender differences regarding psychological sequelae of child victims of domestic violence was another finding of the present study. Moreover, there were non significant effects of both treatments on subjects' classroom behavior and academic performance. There was non significant trend of girls' improvement as compared to boys on measured variables.