Summary
The Overgenerality in Autobiographical Memory: The Investigation of Autobiographical Memory with The Childhood Trauma

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It is an important attempt to explore the memory due to its strong impact on our lives. In this process of exploration, research on autobiographical memory has examined its nature and function (Er & Yaşın, 2014; Pillemer, 2003; Rubin, 1996; Rubin & Gülgöz, 2001); its early development (Nelson & Fivush, 2004); encoding, retrieval, forgetting and confusion (Boyraz & Er, 2007; Tulving, 2002); its role in serving to the sense of self (Conway & Pleydell-Pearce, 2000; Fivush & Nelson, 2004).

Autobiographical memories are reconstructions generated from the past (Conway & Pleydell-Pearce, 2000; McAdams, 1993). On account of this, the effect of emotions on memory is noteworthy. Indeed Golden Bower's paper (1981) suggested that cognition is closely associated with emotions (Er, Ergün, Hoşrik, & Şerif, 2008). After Bower's paper, the relationship between emotion and memory has mostly been supported by the studies on autobiographical or mood-congruent memory (Er et al., 2008; Matt, Vasquez, & Champell, 1992). Afterwards, this issue has been moved on to clinical samples of depressed participants by studies examining whether particular moods of participants effect their remembering of autobiographical memories. Williams and Broadbent's (1986) study on mood congruent memory has incidentally pointed out that suicidal patients recall past experiences more generally than the control group. This clinically significant phenomenon is called overgeneral memory (OGM). After Williams and Broadbent's study (1986) the researches found that OGM is associated with depression. Moreover, in recent researches (Rawal & Rice, 2012) it was found that OGM is associated with higher risk for depression. While OGM is categorical and refers to a number of events or extended more than a day; specific memories, opposing concept of OGM, are defined as the events that occurred in a particular day, lasting less than a day (Williams & Broadbent, 1986). However little is known about the nature of overgenerality.

Williams (1996) suggested that overgeneral coding and retrieval develop during childhood to control negative affect and style of OGM may be carried on to adulthood. According to Williams's point of view, children may recall general memories in order to regulate negative affect associated with childhood traumatic experiences. Besides, it was suggested that difficulty in accessing specific memories might result in depression due to insufficient repertoire of problem-solving skills. In this way, overgenerality may help in explaining the link between the reverse childhood experiences and adult depressive symptoms. In the literature, it has been argued that the childhood is a sensitive period for autobiographical memory development (Nelson & Fivush, 2004) and exposure to traumatic experiences at this period may contribute to OGM style. Essentially, the evidence on link between childhood experiences and autobiographical memory is based on Kuyken and Brewin's (1995) study. In this study, they found that depressed patients with history of childhood sexual abuse remembered significantly more general memories than depressed patients without history of childhood sexual abuse. In contrast to these findings, the studies that do not support the relationship between trauma and OGM are also available (Vrielynck, Deplus, & Phillipot, 2007).

It is still not clear whether trauma alone is sufficient for the development of OGM. The nature and characteristics (onset, duration, severity) of traumatic experiences are important for the development of OGM (see, Burnside, Startup, Byatt, Rollinson, & Hill, 2004; Bunnell & Greenhoot, 2012; Crane & Duggan, 2009; Kaynar & Er, 2014). Furthermore, Moore and Zoelner's (2007) review pointed out that in terms of the develop-

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ment of OGM it is important to know how the victims cope with trauma. Throughout the literature it has been demonstrated that the history of trauma is not sufficient alone; posttraumatic stress reactions such as avoidance and intrusion are necessary to produce OGM (Dritschel & Berkerian, 2004; Bunnell & Greenhoot, 2012).

Although inconsistencies in the findings of overgenerality are worth considering, the consistent relationship between depression and overgenerality has been demonstrated more frequently in the literature. However, the literature is concerned with explaining the underlying mechanism of the nature of relationship stressed above. In the light of the limited studies that examined autobiographical memory, depressive symptoms and childhood trauma as a whole, current study is designed to answer the questions on (1) how childhood traumas have effects on autobiographical memory and (2) how these effects are related with adulthood depressive symptoms. With this purpose, the research consists of two studies. Aim of the first study is to compare the autobiographical memory characteristics belonging to the two groups: one group with lower and the other with higher levels of childhood traumas. Whereas the aim of the second study is to examine the role of autobiographical memory in the development of adulthood depressive symptoms by reaching the same participants involved in the first study that were found to have had higher levels of childhood traumas.

Method

Materials

Two different sets of scales to be applied in the first and second stage of the research were formed. In the first study, Childhood Trauma Questionnaire (CTQ), Autobiographical Memory Characteristics Inventory (AMCI), Brief Autobiographical Memory Effects Inventory (BAMEI), The Impact of Event Scale-Revised (IES-R) were used. In the second study, Autobiographical Memory Characteristics Inventory (AMCI), The Impact of Event Scale-Revised (IES-R), Beck Depression Inventory and Form Autobiographical Event Content were used. Firstly, Childhood Trauma Questionnaire (CTQ) was adapted by Aslan and Alparslan (1999). Er's (2005) Autobiographical Memory Characteristics Inventory is a Likert scale with 7 responses. Er and Boyraz's (2012) Brief Autobiographical Memory Effects Inventory (BAMEI) was used to evaluate specificity of memory. Beck Depression Inventory (BDI) was adapted by Hisli (1988; 1989) The Impact of Event Scale-Revised (IES-R) was adapted by Çorapçıoğlu, Yargıç, Geyran, and Kocabaşoğlu (2006). Form Autobiographical Event Content (FAEC) was created by the researchers to assess duration and source of abuse.

Study I

Participants (I)

The sample in the study included 198 university students [(n_{female} = 129 (65.1%), n_{male} = 69 (34.9%)]. Their ages were ranging between 18 and 30 (M_{age} = 21.71, SD = 2.47).

Procedure (I)

The participants were informed about the main purpose of this study and volunteer participation in the study was ensured. Instructions involved asking the participants to tell three personal autobiographical event including positive, negative and comparison. Firstly, the participant filled CTQ. At the beginning of scale, an instruction was given to the participant: "*Please, recall your negative memory while answering following the questions*". After that the second instruction was given: "*Now, please recall your childhood positive memory of your life (e.g. friendship, favorite game and so on)*". Finally, the participants were encountered with new clue instruction: "Please, recall your memory about any event you experienced last week". After the participant had recalled memories, the participant was requested to evaluate her/his three memories on AMCI and IES-R.

Study II

Participants (II)

In the second study, the sample was formed by reaching the same participants who had scores (over 81.60) one standard deviation (17.44) above the CTQ mean (63.16) in the first study. The sample in the second study included 46 university students. Whereas 28 (60.9%) of the participants were female, 18 (39.1%) of the participants were male. Their ages were ranging between 20 and 30 (M_{age} = 22.03, SD = 2.33).

Procedure (II)

In this stage, the participants were interviewed individually. Three clue words were given to the participant to recall memories. Two methods were used to determine clue words. In the first method, it was considered the most frequent items of CTQ were triggering participants' memories. In the second method, 40 individuals uninvolved in the sample were asked for five words about physical, sexual and emotional abuse. The written words frequencies were considered. As a result of the two methods, three clue words including "indifference", "being beaten" and "sexually touch" were determined. The participants were asked to evaluate her/his memory on AMCI, IES-R and FAEC. Lastly, the participant was requested to evaluate her/his depressive symptoms on BDI.

Results

The Recollections of Autobiographical Memory for the Two Groups with Lower and Higher Levels of the Childhood Trauma

In the first analysis, we performed a T-Test analysis to examine whether there were differences between the autobiographical memory features for two groups who had higher and lower levels of the childhood traumas (see Table 1). Individuals who had higher scores of the childhood trauma were high in detail and effect of negative memories ($t_{101} = 2.42$, $p = .034$, $d = .57$; $t_{101} = 5.33$, $p < .001$, $d = 1.24$, respectively) but low in detail and effect of positive memories ($t_{101} = 2.40$, $p = .004$, $d = .56$; $t_{101} = 2.27$, $p = .015$, $d = .52$, respectively) and low in detail of recent past memories ($t_{101} = 2.71$, $p = .007$, $d = .50$). They also reported higher scores of avoidance and intrusion for negative memories ($t_{101} = 5.93$, $p < .001$, $d = 1.42$; $t_{101} = 6.83$, $p < .001$, $d = 1.56$, respectively).

Regression Analysis for Overgenerality and Depressive Symptoms

For the purpose of testing predictors of overgenerality and depressive symptoms, two hierarchical regression analyses were run separately (see Table 3). The results showed that overgenerality was predicted by the childhood traumatic experiences, avoidance and intrusion levels of negative memory ($R^2 = .09$, $F_{1,45} = 15.22$, $\beta = .24$, $t_{46} = 2.55$, $p < .001$; $R^2 = .11$, $F_{1,44} = 9.63$, $\beta = .18$, $t_{46} = 1.95$, $p < .001$; $R^2 = .12$, $F_{1,43} = 6.24$, $\beta = .05$, $t_{46} = .35$, $p < .001$, respectively). Also, according to the results of the analysis it was revealed that depressive symptoms were predicted by the childhood traumatic experiences, avoidance and intrusion levels of negative memory and overgenerality ($R^2 = .14$, $F_{1,45} = 25.12$, $\beta = .22$, $t_{46} = 2.49$, $p < .001$; $R^2 = .15$, $F_{1,44} = 13.23$, $\beta = .05$, $t_{46} = .61$, $p < .001$; $R^2 = .16$, $F_{1,43} = 9.20$, $\beta = .11$, $t_{46} = 1.22$, $p = .724$, $p < .001$; $R^2 = .24$, $F_{1,42} = 12.01$, $\beta = .32$, $t_{46} = 4.17$, $p < .001$, respectively).

Avoidance and Intrusion Levels of Negative Memory as a Mediator between the Childhood Traumatic Experiences and the Adulthood Depressive Symptoms

A mediation analysis was conducted to examine whether avoidance from memory and intrusive memories mediated the relation between the childhood traumatic experiences and the adulthood depressive symptoms (see Table 4 and 5). As suggested by Baron and Kenny (1986), for the mediation analysis the depressive symptoms were regressed by the childhood traumatic experiences as the first step variable, and were found to have a significant association ($\beta = .36$, $t = 5.01$, $p < .001$). In the second step, avoidance also revealed a significant association with the depressive symptoms ($\beta = .21$, $t =$ 2.90, $p < .001$). In the second analysis, avoidance was regressed by the childhood trauma experiences, and was found to have a significant association ($\beta = .41$, $t = 5.78$, $p < .001$). Consistent with the mediation hypothesis, when avoidance (i.e., the mediator) was added to regression analysis, the significance level between the childhood traumatic experiences and the adulthood depressive symptoms decreased ($\beta = .33$, $t = 4.26$, $p < .001$). The significance of the decrement in the beta values was assessed with Sobel test. Sobel test confirmed this significant decrease ($z = 2.45$, $p = .014$).

Similarly, for intrusive memories as mediator variable, Baron and Kenny's (1986) mediator analysis criteria was taken into account. As indicated above, for the first criterion, it was revealed that the childhood traumatic experiences as the first step variable predicted depressive symptoms ($\beta = .37$, $t = 5.10$, $p < .001$). In the second step, intrusive memory also revealed a significant association with the depressive symptoms ($\beta = .31$, $t = 4.27$, $p < .001$). In the second analysis, intrusive memory was regressed by the childhood trauma experiences, and was found to have a significant association ($\beta = .55$, $t = 8.61$, $p < .001$). Consistent with the mediation hypothesis, when intrusive memory (i.e., the mediator) and the childhood traumatic experiences (i.e., independent variable) were added to regression analysis at the same time, significant decreases were observed in the beta values ($\beta = .30$, $t = 3.47$, $p < .001$). Sobel test confirmed this significant decrease ($z = 4.10$, $p < .001$).

Discussion

The present study investigated differences of autobiographical memory features between the two groups with higher and lower scores of the childhood trauma. Moreover, the present study examined relations between the childhood trauma, avoidance and intrusion levels of negative memory and overgenerality. Finally, the mediator role of avoidance and intrusion levels of negative memory between the childhood trauma and the adulthood depressive symptoms were examined in this study.

As expected, it was found that the participants who had higher levels of the childhood trauma recalled more detailed negative memories. Dramatically, they recalled less detailed positive and recent past memories as compared with the participants who had lower scores of the childhood trauma. The findings of the current study support previous studies, showing that traumatic memories are different from memories related common events (Von der Kolk, 1994). McNally et al. (1995) found that PTSD group of Vietnamese veterans recalled more memories regarding Vietnamese experiences but were forced to recall positive memories, which is consistent

with the findings of the present study. As Brewin (1998) suggested, the results of this study indicated that positive autobiographical memories that may play role in healing of the depressive symptoms are blocked by the traumatic memories, which are more engaged in order to avoid in group with childhood trauma.

Second, as expect, it was found that depressive symptoms were predicted by the childhood trauma, avoidance, intrusion, overgenerality and avoidance and intrusion was a mediator in relation between the childhood trauma and the adult depressive symptoms. These results are consistent with previous research showing that depressed participants were more overgeneral in autobiographical recall than groups. However the current study is different from the other studies in terms of studying in non-clinical sample. The previous studies pointed out that the relations between OGM and 'avoidance' and 'intrusion' after traumatic events observed in clinical samples (Kremers, Spinhoven, & Van der Does, 2004). In this study, it has been supported that overgenerality is developed against adverse experiences and how individual copes with (avoidance) such experiences has a contribution to development of overgenerality, consistently with Williams' (1996) proposal.

Although results from this study suggest that early traumatic experiences are one of the most important predictors of OGM, the limitations of the study, which are retrospective nature limits conclusions can be drawn. In the literature, there are two contradictive views suggesting that overgeneral memory is a *protective* factor against distressing memories or a *vulnerability* factor (Burnside et al., 2004). Thus, for the purpose of assessment development and effects of overgenerality, there is need for future studies conducted with long-term longitudinal method through childhood, adolescence and adult life.