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Summary
Resilience Following Child Abuse and Neglect: Mediating Role of Coping Strategies

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Individuals exposed to child abuse and neglect are likely to experience more physical, cognitive, socio-emotional, and behavioral problems following child abuse and neglect (Ammerman, Cassisi, Hersen, & van Hasselt, 1986; Heller, Larrieu, D'Imperio, & Boris, 1999; Kendall-Tackett, 2002). Yet, interestingly, not all people who are exposed to child abuse and neglect have such undesirable experiences but tolerate them to some extent, which is called resilience (Cicchetti & Toth, 1995; Heller et al., 1999).

Exposure to child abuse and neglect leads to the negative representation of both the victim's self and others in a relationship with the victim. Those exposed to child abuse and neglect perceive their "self" more negatively than others (Ammerman et al., 1986; Harter, 1999; Kendall-Tackett, Williams, & Finkelhor, 1993; Nurcombe, 2000).

The research exploring coping with child abuse previously yielded conflicting findings. Although emotion-focused coping is known to have a mediating effect on the link between childhood abuse and mental health and is accepted to affect mental health adversely, the effects of problem-focused strategies on mental health are rarely supported in abused adults (Merrill, Thomson, Sinclair, Gold, & Milner, 2001; Phanichrat & Townshend, 2010; Runtz & Schallow, 1996). Runtz and Schallow (1997) found that social support and coping fully mediate the impact of childhood physical and sexual abuse on mental health symptoms. Besides, the scholars indicate that problem-focused strategies predict mental health positively, while emotion-focused methods predict it negatively.

Liem and Boudewyn (1999) reported that the number of sexual abuse had a mediating role on self-function in a group of individuals experiencing loss and abuse before the age of five. Accordingly, as self-blame and the number of sexual abuse increase, self-function becomes inadequate. Among female undergraduate students experiencing sexual abuse, Liem, James, OToole, and Boudewyn (1997) found that resilient women with low depressive scores and high self-esteem scores were more internally controlled and demonstrated less self-destructiveness.

Effective coping strategies following an experience of child abuse and neglect may alleviate the adverse consequences of the incident on development, while ineffective strategies may exacerbate the situation. Therefore, it is not prudent to assert that the coping process may mediate the effects of abuse on mental health and self-function. In the project on which this study was built, the researchers explored the variables predicting depression among 125 sexually-abused university students in Turkey. The results showed that while problem-focused strategies reduced depression, it was vice versa when it came to emotion-focused strategies (Yılmaz Irmak et al., 2016). Overall, it is deemed essential to investigate whether the mediating role of coping strategies, which are highly emphasized in sexual abuse, is also true for other types of abuse and neglect. In this study, it was aimed to examine the mediating roles of the problem- and emotion-focused strategies in resilience following child abuse and neglect. Resilience was denoted as positive self-development and having poor depressive symptoms.

Method

Sample

The study was carried out with 1055 students enrolled at various faculties and vocational schools of Ege University. Yet, some participants were excluded from the sample since they gave unreliable responses to the items or skipped critical sections of the scales. The mean

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age of participating 934 first-year students and juniors was 19.80 (*SD* = 1.38). While 42% (*n* = 388) were males, 58% (*n* = 546) were females.

Data Collection Tools

***Demographic Information Form*.** The form, generated by the researchers, includes questions about the demographic characteristics of the participants (e.g., gender, age).

Ways of Coping Questionnaire (WCQ). The WCQ, developed by Folkman and Lazarus (1980), was adapted into Turkish by Şahin and Durak (1995). The scale is a 30-item 4-point Likert-type scale consisting of 5 subscales: self-confident approach, helplessness, submissiveness, optimistic approach, and seeking social support (SSS). The Cronbach's alpha coefficients of the subscales ranged from .60 to .83 in the adaptation study. One may also use the scale to measure two coping strategies, emotion-focused and problem-focused. While the problem-focused coping strategy subscale covers self-confident approach, optimistic approach, and SSS, the emotion-focused coping strategy subscale embodies submissiveness and helplessness. The Cronbach alpha coefficients were found to be .85 for the problem-focused coping strategy and .73 for the emotion-focused coping strategy.

Rosenberg Self-esteem Scale (RSR). Çuhadaroğlu (1986) explored the psychometric properties of the RSR with 205 high school students in Turkey. The scholars found the test-retest reliability of the scale, administered at a one-month interval, to be .75 and its validity coefficient to be .71 following a series of psychiatric interviews. The participants rated the items on the 4-point Likert-type form. Cronbach's alpha coefficient has been found to be .87.

Beck Depression Inventory (BDI). In Turkey, Hisli (1989) carried out the reliability and validity study of the scale developed by Beck, Ward, Mendelson, Mock, and Erbaugh (1961) to evaluate the symptoms and severity of depression. BDI is a 21-item self-report scale with four subscales: hopelessness, self-hatred, distorted body image, and guilty feelings; a high total score indicates severe depression (Hisli, 1989). In this study, Cronbach's alpha coefficient of the total score was .87.

General Self-efficacy Scale (GSS). Schwarzer and Jerusalem (1995) developed the scale to measure one's perceived self-efficacy of coping with difficult and different situations or problems. The scale was adapted into Turkish by Luszczynska, Gibbons, Piko, and Teközel (2004). It is a 4-point Likert-type scale, and the higher scores on the scale indicate increased self-efficacy. Cronbach's alpha coefficient has been found to be .86.

Child Abuse and Neglect Scale (CANS). The researcher added two items, one on sexual abuse and the other on physical abuse, to the twenty items on the scale developed by Yılmaz Irmak (2008) on child abuse and neglect. The preliminary analysis section presents the psychometric properties of the scale.

Structural Equation Modelling

Firstly, the latent variables were defined for the structural equation modeling (SEM): "abuse," "depressive symptoms," "self-development," and "emotion-focused coping," and "problem-focused coping." Then, abuse was defined with the observed variables mild physical and emotional abuse, severe physical abuse, neglect, and sexual abuse. The variable depressive symptoms was defined with the observed variables hopelessness, self-hatred, distorted body image, and guilty feelings (the subscales of the BDI). Besides, self-esteem and general self-efficacy were used to define self-development. While emotion-focused coping was described with submissiveness and helplessness, the latent variable problem-focused coping was defined with self-confident approach, optimistic approach, and SSS (the subscales of the WCQ). Then, it was tested the probable mediating roles of problem-focused coping and emotion-focused coping on the associations between abuse, depressive symptoms, and self. Baron and Kenny's (1986) procedure was used to seek the mediating roles of the variables and performed the analyses on the LISREL 8.8 program (Jöreskog & Sörbom, 2006).

Findings

The Factor Analysis of the CANS

Firstly, exploratory factor analysis (EFA) was performed for the 22-item CANS to explore the model with the latent variable abuse. The initial EFA performed using the varimax axis rotation technique revealed four factors (emotional and mild physical abuse, severe physical abuse, neglect, and sexual abuse) with an eigenvalue greater than 1, and the revealed factors explained 56% of the total variance (Table 1). Besides, the reliability analysis showed that the scale had adequate internal consistency reliability. Then, confirmatory factor analysis (CFA) was performed to confirm the factorial structure of the CANS. The results suggested that the established model showed a high level of fit with the data, and, therefore, the construct validity of the scale was confirmed (Table 2). In the second-order CFA, emotional and mild physical abuse, severe physical abuse, neglect, and sexual abuse subscales were added into the analysis, considering the components of the latent variable abuse, and tested this theoretical structure. The results showed a good model-data fit (Table 2). Considering model-data fit indices in the first- and second-order CFA, the estab-

lished model showed a good fit with the data. Thus, it was asserted that the observed variables making up the scale can measure the latent variable abuse.

The Mediating Roles of the Problem-Focused Coping and Emotion-Focused Coping

The findings section presents the SEM analyses to explore the mediating roles of the problem-focused coping and emotion-focused coping on the impacts of child abuse and neglect on depressive symptoms and self-development. First, to see whether abuse predicts depressive symptoms and self-development, *Model 1* was built with these three latent variables. The fit indices obtained indicated that the model showed a good fit with the data (SB $\chi 2 = 101.33$, $df = 27$, $p < .00$, RMSEA = .054 (90% Confidence Interval (CI)= .043 - .066), AIC = 157.33, CFI = .98, and GFI = .097). Moreover, we found that both the path to depressive symptoms (.84, $p < .05$) and self-development (-.79, $p < .05$) were statistically significant. Therefore, abuse increases depressive symptoms and undermines self-function without the mediating variables in the model.

When testing *Model 2*, called the partial mediation model exploring the mediating roles of both abuse and the mentioned coping strategies on depressive symptoms and self-development, it was found that the model produced good data-fit statistics ($\chi^2 = 355.60$, $df = 7\ 9$, $p < .00$, RMSEA = .061 (%90 CI = .055 - .068), AIC = 437.60, NFI = 0.95, CFI = .96, and GFI = 0.94). However, the paths from abuse to depressive symptoms (.09) and self-development (-.07) were excluded from the model since they were not statistically significant.

When coming to *Model 3*, the full mediation model of abuse built by removing the paths from abuse to depressive symptoms and self-development in *Model 2*, it was found that the model was in good agreement with the data ($\chi^2 = 359.16$, $df = 81$ $p < .00$, NCH = 4.43, RMSEA = .061 (%90 CI = .054 - .057), AIC = 437.16, CFI = .96, and GFI = 0.94). Besides, a Chi-square difference test was performed to decide which model fit better with the data and concluded that the models did not differ significantly ($\chi^2 = 3.56$, $df = 2$, $p > .05$). Then, the path effects of abuse -symptoms and abuse- self-development were removed from the model. Figure 2 presents the coefficients and standard errors calculated for *Model 3*.

Anderson and Gerbing's procedure (1988) was adopted to test the significance of the paths in *Model 3*. First, the path from problem-focused coping to depressive symptoms was tested in *Model 3a* and this discovered good data-model fit indices ($\chi^2 = 387.98$, $df = 82$, $p < .00$, NCH = 4.73, RMSEA = .063 (%90 CI = .057 - .070), AIC = 240.00, CFI = .96, and GFI = 0.94). The result of the Chi-square difference test yielded that the values in *Model 3* and *Model 3a* significantly differed by fit indices ($\Delta\chi^2 = 28.82$, $df = 1$, $p < .05$), and, therefore, this path was kept in the model. Second, the path from problem-focused coping to self-development was explored in *Model 3b* and concluded the model had a good fit with the data ($\chi^2 = 557.87$, $df = 82$, $p < .00$, NCH = 6.8, RMSEA = .079 (%90 CI = .073 - .085), AIC = 633.87, CFI = .94, and GFI = .92). Similarly, the Chi-square difference test revealed a significant difference between *Model 3* and *Model 3b* by fit indices ($\Delta\chi^2 = 198.71$, $df = 1$, $p < .05$), and this path was kept in the model. Third, considering the path from emotion-focused coping to self-development in *Model 3c*, the model showed a good model-data fit ($\chi^2 = 469.95$, $df = 82$, $p < .00$, NCH = 5.73, RMSEA = .071 (%90 CI = .065 - .078), AIC = 545.95, CFI = .95, and GFI = 0.93). This path was also kept in the model since there was a significant difference between *Model 3* and *Model 3c* by fit indices, according to the Chi-square difference test ($\Delta\chi^2 = 110.79$, $df = 1$, $p < .05$). Finally, when testing the path from emotion-focused coping to depressive symptoms in Model 3d, the model showed acceptable-to-moderate agreement with the data ($\chi^2 = 579.06$, $df = 83$, $p < .00$, NCH = 5.73, RMSEA = .08 (%90 CI = .074 - .086), AIC = 653.06, CFI = .94, and GFI = 0.91). Since the Chi-square difference test revealed a significant difference between *Model 3* and *Model 3d* by fit indices ($\Delta\chi^2 = 219.90$, $df = 2$, $p < .05$), this path was also kept in the model.

In the model presented in Figure 2, a one standard deviation increase in abuse led to a .13 standard deviation decrease in problem-focused coping and a .43 standard deviation increase in emotion-focused coping. Besides, a standard deviation increase in abuse led to a .03 standard deviation increase in depressive symptoms through problem-focused coping, while a .33 standard deviation increase in depressive symptoms through emotion-focused coping. Accordingly, the proposed model with abuse, emotion-focused coping, and problem-focused coping explained 67% of depressive symptoms; abuse explained 2% of problem-focused coping, 18% of emotion-focused coping, and 13% of depressive symptoms. On the other hand, a standard deviation increase in abuse led to a .10 standard deviation increase in self-development through problem-focused coping and .26 in self-development through emotion-focused coping. The proposed model showed that abuse, problem-focused coping, and emotion-focused coping explained 93% of self-development. Besides abuse explained 12% of self-development, 2% of problem-focused coping, and 18% of emotion-focused coping. Therefore, we can state that emotion-focused coping and problem-focused coping fully mediate the effects of abuse on depressive symptoms and self-development.

Finally, *Model 5* and *6* were explored to seek an answer to the question of whether emotion-focused coping and problem-focused coping have a full mediation on the effects of abuse on depressive symptoms and self-development. First, *Model 4* that includes the latent variables of abuse, depressive symptoms, self-development, and emotion-focused coping was tested and the model showed good fit indices (SBχ^2 = 182.78, *df* = 47, $p < .00$, $\chi 2/df$ = 3.46, RMSEA = .056 (%90 CI = .047 - .064), AIC = 244.78, CFI = .98, and GFI = 0.96). Therefore, the results suggested that the impacts of abuse on depressive symptoms and self-development were significant both directly and indirectly through emotion-focused coping. Then, *Model 5* was built to explore the latent variables of abuse, depressive symptoms, self-development, and problem-focused coping and concluded that the model showed a good fit with the data (SBχ^2 = 198.74, *df* = 54, $p < .00$, $\chi 2/df$ = 3.68, RMSEA = .054 (%90 CI=.046 - .062), AIC = 272.74, CFI = .98, and GFI = 0.96). Hence, the effects of abuse on depressive symptoms and self-development were significant both directly and indirectly through problem-focused coping. Ultimately, both problem-focused coping and emotion-focused coping separately have a partial mediation on the impacts of abuse on depressive symptoms and self-development. Yet, when modeled together, they show a full mediation on the effects of abuse.

Discussion

Parallel to the findings in the SEM literature, the findings of this study revealed that problem-focused coping (Merrill et al., 2001; Runtz & Schallow, 1996; Yılmaz Irmak et al., 2016) and emotion-focused coping (Brand & Alexander, 2003; Merrill et al., 2001; Wright et al., 2007) showed a full mediation on the impacts of abuse on mental health. In other words, high problem-focused and low emotion-focused strategies adopted by college students, experiencing childhood abuse and neglect, may reduce their depressive symptoms. Wright et al. (2007) stated that it is unnecessary to utilize problem-focused strategies for resilience, but not using or using less emotion-focused coping strategies would contribute to adaptation. Yet, the results overlap the findings documenting that both problem-focused and emotion-focused strategies are effective (Merrill et al., 2001; Runtz and Schallow, 1996; Yılmaz Irmak et al., 2016). The findings revealed that emotion-focused strategies partially mediated the impacts of child abuse and neglect, while the two strategies showed a full meditation. This result highlights the significance of the contribution of emotion-focused strategies to resilience, as well as the noteworthy position of problem-focused strategies. Therefore, changing only one of the coping strategies may remain insufficient to alleviate the impacts of abuse, and it is essential to adopt both coping strategies.

It was also found that problem-focused and emotion-focused strategies were the mediating variables for the impacts of child abuse and neglect on self-development. Liem and Boudewyn (1999) stated that as self-blame increases, self-function becomes inadequate in those experiencing loss and abuse before the age of five. Liem et al. (1997) also reported that resilient women, characterized by low depressive symptoms and high self-esteem, exhibit more internal locus of control and less self-destructiveness. Moreover, the scholars emphasized that internal locus of control and high self-destructiveness in victims of abuse may increase their stress and lower their self-esteem. Similarly, these results implied that ineffective coping strategies adopted by victims may lower their self-esteem. Using effective coping strategies, on the other hand, may make it easier for one to solve their problems and increase their self-efficacy and self-esteem.

It is known that victims of abuse blame themselves more (Liem & Boudewyn, 1999; Spaccarelli, 1994) and adopt ineffective coping strategies (Brand & Alexander, 2003; Wright et al., 2007). Abuse is a phenomenon occurring out of one's control and causing them to experience helplessness and powerlessness. Self-blame following abuse and perceiving oneself as unsuccessful and powerless may hinder them from adopting effective coping strategies. As a result, specialists, working with the individuals exposed to child abuse and neglect with depressive symptoms and self-related issues, should help those people with depressive symptoms and self-related issues to adopt effective coping strategies, which is likely to contribute to the solution of their problems.

A strength of the present study is to have explored the mediating role of coping, which is investigated chiefly on the individuals exposed to sexual abuse, for those exposed to neglect and physical and emotional abuse. The findings documented that adopting the emotion- and problem-focused coping strategies may have significant effects following child abuse or neglect experience. Besides, the present research is among the few studies examining the mediating role of coping strategies on the impacts of child abuse and neglect on self-development, which may be considered the second strength of the research. The final strength of the study is that it contributes to the resilience process following abuse. In other words, it emphasizes the significance of coping strategies to develop resilience after child abuse and neglect.

Overall, it is recommended further studies exploring resilience in groups exposed to child abuse and neglect by considering various age groups, different competence domains, diverse sources of knowledge on competence and protective and risk factors, and longitudinal design.