To evolve from victim into survivor: Examining the impact of psychological resilience on the relationship between childhood trauma and PTSD symptoms

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Master Thesis Clinical Psychology

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Date: January 27th, 2022

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Acknowledgements

I would like to thank Dr. Marieke Tollenaar for her support and assistance in this master's thesis. Without our motivational conversations it would have taken me much more effort to complete this thesis during the challenging times of COVID-19. I would also like to thank PhD student Marike Kooistra for reading my thesis and providing me with feedback. Additionally, I would like to acknowledge the women that agreed to participate in the study.

Abstract

Adults who have experienced trauma in their childhood risk having a wide range of mental health problems, including post-traumatic stress disorder (PTSD). However, there may be protective factors that could explain why not all victims develop psychopathology in adulthood. One of these potential factors is ‘psychological resilience’: a cognitive process that determines if an individual is able to bounce back from a negative experience through flexible adaptation.

The current study aims to examine the relationship between childhood trauma and PTSD symptoms, along with the possible moderating impact of psychological resilience on this relationship. This was investigated with a cross-sectional design, by means of an online self-report questionnaire performed by 26 Dutch women aged 25 to 62 years of whom most had experienced some type of trauma. The data was collected using the Childhood Trauma Questionnaire-Short Form (CTQ-SR), the PTSD Checklist for DSM-V (PCL-5) and the Resilience Evaluation Scale (RES). The results of a multiple regression analysis demonstrated that, as expected, women who experienced more childhood trauma showed an increased amount of PTSD symptoms (R^2 = .614, $p \leq .000$), and that women with a higher level of resilience showed a lower amount of PTSD symptoms (R^2 = .74, $p \leq .000$). However, resilience cannot be considered as a moderator of the relationship between childhood trauma and PTSD symptoms, as the interaction between childhood trauma and resilience was not significant (p = .179). Instead, the study did find that women who experienced more childhood trauma show lower levels of resilience (r = -.574, p = < .005).

The current study recommends future studies to examine what exact role resilience has in the relationship between childhood trauma and PTSD symptoms. In addition, it emphasizes to boost resilience in victims of childhood trauma, because it may decrease the likelihood of developing PTSD symptoms in adulthood.

Keywords: *childhood trauma · domestic violence · peer support · post-traumatic stress disorder · resilience · women*

Preface

The initial intention of this master's thesis was to focus on female victims of domestic violence from women's shelters in The Netherlands. The women were participating in structured peer support group sessions, provided by the *Academie voor Herstel en Ervaringsdeskundigheid* (Academy for Recovery and Experiential Expertise in English). This thesis was supposed to study the relationship between resilience and PTSD symptoms and how these would have been affected by participating in peer support group sessions.

However, due to COVID-19 measures in The Netherlands the peer support groups were forced to stop halfway through the sessions. Therefore the initial study, on which this thesis would be based, could not be fully conducted. Changes in the research design and methodology for this thesis had to be made, which are fully described in the methods section of this thesis. Because the initial thesis proposal already got approved, the introduction has been largely preserved according to the original research design and only a few adjustments were made. That is, the original hypotheses have been replaced by new hypotheses that could be tested with the cross-sectional design that was implemented due to the circumstances during COVID-19.

1. Introduction

1. 1. Domestic violence

Home can be a dangerous place for women who experience domestic violence. Domestic violence can be defined as physical, emotional and psychological abuse wrought by a person who is associated with the victim (Herring, 2011). Domestic violence by intimate partners or ex-partners is the most prevalent type of violence against women worldwide (Heise, Ellsberg, & Gottemoeller, 1999), with one in four women reporting lifetime intimate partner violence (Breiding, Black, & Ryan, 2008). Furthermore, a national prevalence study in The Netherlands found that one in 20 adults (5.5%) had at least one incident of physical and/or sexual domestic violence in a period of five years (Van Eijkern et al., 2018). At least 20 percent of the victims experienced structural domestic violence, which means on a monthly, weekly or daily basis. The researchers also found that gender differences become visible when context and impact are taken into account. Compared to men, women are more likely to be victims of violence by their partner and women are almost six times more likely to be confronted with structural violence (Van Eijkern et al., 2018). These numbers show the extent of domestic violence in The Netherlands and the relevance for suitable support for female victims.

There is evidence that domestic violence by partners has short- and long-term negative health consequences for victims, even after the abuse has ended. It can result in serious physical, mental, sexual and reproductive health problems (World Health Organization, 2020). According to Campbell et al. (2002), abused women have a 50% to 70% increase in gynecological, central nervous system and stress-related problems. Moreover, a study of Helfrich et al. (2008) shows that nearly one third of women who sought shelter for domestic violence had higher rates of mental health problems and disorders than women in the general population. Over 44% of these women reported that their mental conditions led to difficulties functioning in work, school and social settings (Helfrich et al., 2008). Problems in these areas may increase women's risk for abuse and neglect (Gilson et al., 2001), while decreasing their self-esteem (Riger et al., 2002) and their possibility of leaving their abuser (Lloyd & Taluc, 1999). In extreme cases, domestic violence against women can result in death (WHO, 2020).

The above-mentioned consequences of domestic violence show the urgency for research into the effectiveness of treatments for victims.

1.2. Post-traumatic stress disorder

One of the most reported psychological disorders as a consequence of domestic violence is post-traumatic stress disorder (PTSD). PTSD is a chronic disorder which is characterized by symptoms related to direct or indirect exposure to various kinds of trauma. According to the DSM-5 (American Psychiatric Association [APA], 2013) the symptoms include repetitive, involuntary and intrusive memories, dissociative responses and distressing dreams attributed to the traumatic event(s). In addition, people with PTSD experience negative cognitions and moods, avoidance of stimuli and alterations in arousal and reactivity (APA, 2013).

According to a review of Jones, Hughes and Unterstaller (2001), the amount, severity and type of abuse is correlated to the intensity of PTSD symptoms. Severity refers to how life threatening the abuse is. The more life threatening the abuse is, the more traumatic the effects are, meaning that experiencing more severe violence may worsen PTSD symptoms (Jones et al., 2001). Moreover, suicide is a risk among victims who present PTSD symptoms. PTSD may mediate between suicidal thoughts and domestic violence by intimate partners (Jones et al., 2001).

Statistics show that PTSD is twice more common in women (10.4%) than in men (5.0%) (Breslau et al., 1997). Presumably, a sex-specific combination of genetic (Ressler et al., 2011), hormonal (Lebron-Milad & Milad, 2012) and life experience (Kline et al., 2013) factors contribute to the long-term effects of trauma (Shansky, 2015).

Victims who seek shelter after domestic violence tend to have experienced more severe abuse and present higher rates of PTSD (40 to 84%) than victims who do not seek shelter (Johnson & Zlotnick, 2012). According to the ‘conservation of resource theory’ of Hobfoll and Lilly (1993), these higher rates may be explained by the loss of personal and material belongings when seeking shelter. This plays an important role in stress reactions, including PTSD symptoms. The loss thereby contributes to the development and maintenance of PTSD and may disrupt recovery from the disorder (Hobfoll & Lilly, 1993). Given their high prevalence and higher risk on developing PTSD symptoms, female victims of domestic

violence who sought shelter are a relevant study population. In this study the importance of decreasing their risk on developing PTSD symptoms is a central aim.

1.3. Resilience

Psychological illnesses such as PTSD can result from domestic violence, but this may not always be the case. Hence, there may be a protective factor that could explain why psychopathology does not always develop after experiencing trauma. One of these potential factors is 'psychological resilience' (Yehuda & Flory, 2007). Resilience can be defined as the capacity of an individual to adapt successfully to disturbances that threaten the function, survival or development of that individual (Masten, 2015). It is a cognitive process that influences how an individual appraises and can positively respond to a traumatic event or stressor (Niitsu et al., 2017). In other words: resilience is the ability to "bounce back" from a negative experience or adversity through flexible adaptation (Luthar, Cicchetti & Becker, 2000). In the literature there has been a dissensus about resilience being trait-related (stable over time) or state-related (adaptive to the environment, such as family, community or society) (Kuldas & Foody, 2021). Leading theorists have agreed that resilience cannot be identified as merely an unique personality trait that some are born with; it can rather be described as changing over time (Kuldas & Foody, 2021; Garmezy, 1991; Luthar et al., 2000, Werner, 1986). Resilience can be learned and developed at any age based on relationships between individuals and their environments (Gillespie et al., 2007).

In a study by Anderson and Bang (2011) the researchers found that many adult women who were exposed to domestic violence during childhood had recovered and gained strong resilience. The participants who presented higher resilience scores also showed lower levels of PTSD (Anderson & Bang, 2011). However, according to an article of Renner and Danis (2012), research on *how* recovery is accomplished and maintained among adult survivors of domestic violence is limited. The researchers found that resilience and impairment are not opposites, but rather appear to be different features of the total experience of coping (Anderson et al., 2012). According to the review of Leung et al. (2020), a person can acquire resilience through conscious self-reflection, deliberation and motivation. This can grow stronger through the presence and safety of significant others (Leung et al., 2020). It would be

convenient to develop methods for abused women to boost their resilience, especially when they have experienced trauma.

1.4. Peer support

In a study of Anderson et al. (2012) a main sign of resilience of the domestic violence survivors was their ability to seek help during times of stress. This included reaching out to formal networks like domestic violence services. Those who sought services often found them to be valuable for their recovery (Anderson et al., 2012). Social support seems to compensate for the negative and unconsciously learned dispositions as a response to the abuse, which helps survivors to transform past adversities and move forward in their lives (Leung et al., 2020). However, Dufour and Nadeau (2001) suggest that social support is only profitable when it is given at specific times in individual's lives, such as directly post-disclosure.

A review by Jones et al. (2001) concluded that effective treatment for victims of domestic violence "offers a supportive relationship, focuses on safety, validates the women's perceptions, encourages self-determination and provides a safe setting to work through the residue of years of trauma". The researchers also suggest that because of the high numbers of victimized women experiencing PTSD, their trauma should be the central focus of interventions (Jones et al., 2001).

Peer support interventions in voluntary contexts and as part of secondary mental health care are widely and increasingly common (Lloyd-Evans et al., 2014). However, Sullivan (2011) described that research into the long-term impact of peer support groups in adult victims of domestic violence seems to be scarce, because following them over time is "labor intensive, time intensive and costly". Studies that *have* been done found peer support interventions to be valuable. There is evidence for domestic violence support service programs to serve as protective factors and increase victims' safety over time. These programs differ in size, capacity and services, but share the following goals: enhancing justice, autonomy, restoration and safety (physical and psychological) for battered women (Sullivan, 2011). In addition, a study based on practical observations in peer support groups by Larance and Porter (2004) found that victims of domestic violence can engage in "relational self-examination and evolutionary risk-taking in a safe, social arena". This allows

support groups to function as a place of trust and safety, where battered women can begin to view their experiences by comparison with others rather than by guilt, shame and withdrawal on their own (Henson & Schinderman, 1980). It may stimulate self-efficacy and hope, through sharing experiential knowledge (Salzer & Shear, 2002). Moreover, an evaluation of Tutty et al. (1993) noted that participation in a 12-week peer support group was associated with significant improvements in female victims' self-esteem, sense of belonging and perceived stress over time.

1.5. Original research question

Taken the high prevalence of domestic violence and the broad extent of short- and long-term negative consequences such as PTSD, it is important to study and increase protective factors in victims. Peer support groups may enhance resilience, which strengthens battered women. Considering the lack of research about the effects of peer support groups on PTSD symptoms and resilience, it is important to conduct more research on this topic.

The original study for this thesis would have been conducted in female survivors of domestic violence from shelters in The Netherlands. They were going to participate in peer support groups titled 'Break the silence', which are provided by the Dutch *Academie voor Herstel en Ervaringsdeskundigheid* (Academy for Recovery and Experiential Expertise in English). The study was supposed to examine to what extent a relationship exists between resilience and PTSD symptoms and how these are impacted by the peer support groups among survivors of domestic violence.

2. Adjustments to the study

2.1. Revised study due to COVID-19 measures in the Netherlands

The original study started in September 2020 during the global pandemic of COVID-19, but had to be prematurely stopped in October 2020 due to increased COVID-19 health restrictions. Hence, for the current thesis a new research design and methodology had to be arranged. Previously, the study was focused on the impact of peer support groups on

resilience and PTSD symptoms in female victims of domestic violence living in violence shelters in the Netherlands. When the lockdown was introduced in the Netherlands it was not achievable to continue the peer support groups and therefore to collect the data of the intervention. Consequently, the original research questions and hypotheses have been replaced by a different approach.

In the new design the goal was still to study associations between PTSD symptoms and resilience, but in relation to experiences of childhood trauma (as a substitute of domestic violence by partners). Furthermore, instead of comparing pre- and post-scores of an intervention, the current study was set-up cross-sectionally with an online questionnaire. This way the new design could not be affected by the COVID-19-related health measures.

The current cross-sectional study hence examines the relationship between childhood trauma and PTSD symptoms with resilience as a possible moderating factor in a sample of women of whom a large part has experienced trauma.

2.2. Childhood trauma

A self-report study of Schellingerhout and Ramakers (2017) in The Netherlands studied the prevalence of child abuse among Dutch schoolchildren aged 12 to 17. They found that 12 percent of the children had at least one incident of child abuse in the previous year (Schellingerhout & Ramakers, 2017). According to a systematic review by Carr, Duff and Craddock (2018), child abuse is related to a wide range of mental health problems in adolescents and adults, including PTSD. Having experienced several forms of severe abuse is associated with more negative outcomes. Moreover, specific forms of abuse may be associated with specific outcomes, for example: physical abuse with aggression problems, sexual abuse with sexuality problems, and emotional abuse with severe mental health problems in adulthood (Carr et al., 2018). A history of child abuse, particularly emotional and physical abuse, may furthermore increase the likelihood of committing or undergoing violence in adult relationships (Krause-Utz et al., 2018; Bandura, 1973; Widom et al., 2014).

On the positive side, a systematic review of Leung et al. (2020) suggests that even as children experienced abuse or maltreatment, they can become resilient adults. This could be due to social support they experience as emerging adults (Klika & Herrenkohl, 2013).

2.3. Hypotheses of the current study

The first hypothesis suggests that there is a positive relationship between childhood trauma and PTSD symptoms, because literature shows that experienced childhood trauma is related to a wide range of mental health problems, including PTSD (Carr et al., 2018). The second hypothesis suggests that there is a negative relationship between resilience and PTSD symptoms, because literature shows that victims who present higher resilience scores show lower levels of PTSD (Anderson & Bang, 2011). The third hypothesis suggests that resilience may work as a negative moderator in the relationship between childhood trauma and PTSD, because literature shows that trauma survivors with higher resilience show lower PTSD levels than victims with lower resilience (Anderson & Bang, 2011).

3. Methods

The current study consists of a cross-sectional research design and is part of the clinical psychology masters project led by dr. M. S. Tollenaar at Leiden University.

Respondents for the current study were mainly recruited via a private Facebook group exclusively for people who experience PTSD symptoms after severe trauma. Some additional participants were recruited via personal Facebook pages. In total 30 women started the study, after which four were excluded from the study analysis. Two were excluded because they did not fully agree upon participation and two failed to respond to all items. Subsequently, 26 women aged 25 to 62 years (M = 46; SD = 12) finished the online questionnaire. Among the 26 respondents, 25 (96.2%) are Dutch and 24 (92.3%) consider Dutch as their native language. Their years of education from the age of 6 range from 10 to 22 years (M = 15; SD = 3).

3.1. Procedure

A digital flyer was posted in the online groups to recruit respondents. When people were interested, they were requested to send an email to the address of the researchers. Thereafter,

respondents received a link and a password to get access to the online questionnaire. Filling in the questionnaire took between 15 to 30 minutes and the respondents were rewarded for their participation afterwards in the form of three euros. The respondents signed an informed consent form prior to the study. The study was approved on 02/09/2020 by the Psychology Research Ethics Committee of Leiden University.

The questionnaires were completed online. When starting the questionnaire, two pages with general information about the study and a permission request appeared. The pages described the purpose, design, duration, data processing, voluntary participation, financial compensation and contact details of the study. On the third page questions regarding demographic information, living situation, social support, religion and spirituality were asked. This was followed by the measuring instruments belonging to the questionnaire, involving the analysis of experienced stressful life events, childhood trauma and several psychological constructs, such as loneliness, anxiety, depression, resilience, PTSD symptoms, acceptance and avoidance. For this particular study only experienced childhood trauma, PTSD symptoms and resilience are taken into account.

At the end of the questionnaire there was the possibility for the respondents to send an email including their bank account number so that the financial compensation of 3 euros could be received. The personal data of the respondents remained separate from the completed questionnaires to remain anonymous. Respondents who wished to seek help based on the content of the study were referred to their general practitioner.

3.2. Measuring instruments

3.2.1. Childhood Trauma Questionnaire-Short Form CTQ-SR

Experienced abuse and neglect in childhood and adolescence was measured with the 'Childhood Trauma Questionnaire-Short Form' (Arntz & Wessel, 1996; Bernstein et al., 1994). It is a self-report questionnaire that consists of 28 items in total: 25 trauma evaluation items and three validity items that constitute the Minimization/Denial subscale (Bernstein et al., 2003). The 25 trauma evaluation items consist of five subtypes of child abuse: emotional abuse (EA; systematically humiliating, belittling, bullying and threatening), physical abuse (PA; causing physical injury), sexual abuse (SA; sexual acts on or with the child, that are not

age- or developmental-appropriate), emotional neglect (EN; depriving a child of psychological needs, such as love, warmth, attention and affection) and physical neglect (PN; depriving a child of physical needs, such as good nutrition, clothing hygiene and medical care) (Bernstein et al., 1994). The CTQ-SR contains a 5-point Likert-rating scale, that varies from one to five for each statement: (1) “never true”, (2) “rarely true”, (3) “sometimes true”, (4) “often true” and (5) “very often true”. By means of detecting likely cases of abuse and neglect, cut-off scores have been set for each type of trauma at four levels of maltreatment severity: none (or minimal), low (to moderate), moderate (to severe) and severe (to extreme). All five items of the EN- and two items of the PA-subscale have to be reverse coded before calculating the scores.

Bernstein et al. (2003) reported the five factors as highly internally consistent (α = 0.61 (PN) to α = 0.95 (SA)) with moderate to high intercorrelations (*r* = .34 to *r* = .75). For the current study the Dutch version of the CTQ-SF was used and total scores were interpreted, with higher scores indicating higher severity of childhood trauma.

3.2.2. PCL-5: PTSD Checklist for DSM-V

Weathers et al. (2013) developed the PCL-5; a 20-item self-report measure that assesses the 20 DSM-V symptoms of PTSD. It is used for monitoring symptom change during and after treatment, screening individuals for PTSD and making a PTSD diagnosis. In this study it is used to check for PTSD-symptoms. Each item describes symptoms that people may experience after their most stressful or highly stressful event. Respondents indicate to what extent they have been bothered by symptoms in the past month in relation to the stressful life event. An example of an item is as follows: “Repeated, disturbing, and unwanted memories of a stressful experience”. The checklist contains a 5-point Likert-rating scale that varies from 0 to 4 for each symptom: (0) “not at all”, (1) “a little bit”, (2) “moderately”, (3) “quite a bit” and (4) “extremely”. Boeschoten et al. (2014) suggest that a cut-off score of 33 gives an indication for a PTSD diagnosis.

According to an evaluation study of Blevins et al. (2015), the PCL-5 appears to have a strong internal consistency (α = .94), test-retest reliability (*r* = .82), convergent validity (*rs* = .74 to .85) and discriminant validity (*rs* = .31 to .6). For the current study the Dutch version of

the PCL-5 by Boeschoten et al. (2014) was used and total scores were interpreted, with higher scores reflecting more PTSD symptoms.

3.2.3. RES: Resilience Evaluation Scale

The RES is a 9-item self-report measure developed to operationalize psychological resilience. The questionnaire consists of two central constructs of resilience: self-confidence and self-efficacy (Van der Meer et al., 2018). Each item describes a statement about how the respondent thinks about themselves and how he or she reacts to difficult situations. The respondent must indicate to what extent each statement applies to that person. An example of an item is as follows: "I can easily adjust in a difficult situation". The RES contains a 5-point Likert-rating scale, that varies from 0 to 4 for each statement: (0) "strongly disagree", (1) "do not agree", (2) "neutral", (3) "agree" and (4) "totally agree". In the current study the Dutch version of the RES was used.

The study of Van der Meer et al. (2018) examined the factor structure and psychometric properties of both the Dutch and English versions of the RES. The researchers found that the internal consistency was good for both the Dutch ($\alpha = .83$) and English version ($\alpha < .90$). In addition, the convergent validity appears to be moderate to strong between the RES-scores and all related constructs. Specifically, for the Dutch questionnaire the convergent validity is strong for 'resilience' ($\rho = 0.62$), moderate for 'self-efficacy' ($\rho = 0.55$), moderate for 'self-esteem' ($\rho = 0.53$) and moderate for 'global functioning' ($\rho = 0.47$) (Van der Meer et al., 2018). For this study the total score is used, with higher scores indicating greater psychological resilience.

3.3. Statistical analyses

Prior to conducting regression analyses to test the hypotheses, descriptive statistics for the current study were presented and relevant assumptions of independency, normality, linearity and homoscedasticity were assessed and checked. A Pearson's *r* data analysis was run to check for potential correlations between the variables (all VIF scores < 10).

Thereafter, a four-stage hierarchical multiple regression was conducted with PTSD symptoms as the dependent variable. In stage one, the possible covariate age was entered in

the model. Subsequently, childhood trauma was entered in stage two of the model to determine whether a positive relationship exists between childhood trauma and PTSD symptoms while correcting for age. The resilience variable was entered in stage three to determine whether a negative relationship exists between resilience and PTSD symptoms, while correcting for age and childhood trauma. Finally, an interaction variable of the two predictor variables (childhood trauma and resilience) was entered in stage four to determine whether resilience functions as a negative moderator in the relationship between childhood trauma and PTSD (Figure 1). The analyses were performed in SPSS Statistics, version 24 (IBM Corp, 2016) with an alpha of .05.

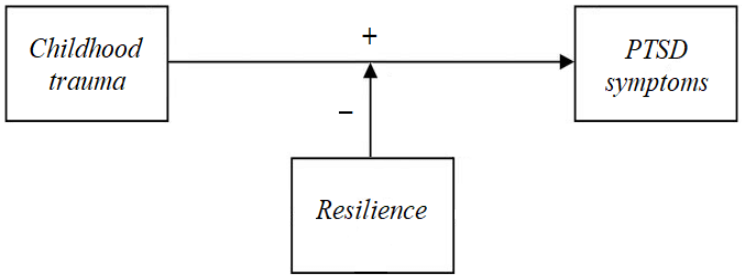


Figure 1. *The hypothesized positive relationship between childhood trauma and PTSD symptoms with resilience as a possible negative moderator*

4. Results

4.1. Descriptive statistics

Out of the 26 respondents, 23 women (88.46%) experienced at least one type of trauma in their childhood. Of these 23 women, 16 (69.57%) reported to have experienced at least one type of childhood trauma very often. Considering the group of women who reported to have experienced at least one type of childhood trauma very often, 15 of these women (93.75%) reported to have experienced emotional abuse, 13 (81.25%) emotional neglect, 11 (68.75%) sexual abuse, 10 (62.50%) physical neglect, and seven (43.75%) to have experienced physical abuse very often. Furthermore, all of the 26 respondents (100.00%) reported to have

experienced at least one PTSD symptom. The mean score of PTSD symptoms on the PCL-5 among the 26 women is 37.62 (ranging from 3.00 to 72.00; *SD* = 23.69), with 16 women (61.54%) who scored above the cut-off score of 33.00 (indicating a potential PTSD diagnosis). Additionally, the mean resilience score on the RES among all the respondents is 19.19 (ranging from 2.00 to 36.00; *SD* = 8.30).

A Pearson's *r* data analysis revealed a significant high positive correlation between childhood trauma and PTSD symptoms ($r = .776$, $p < .001$), indicating that women who experienced more childhood trauma have higher levels of PTSD symptoms. Furthermore, a significant high negative correlation between resilience and PTSD symptoms was found ($r = -743$, $p < .001$), indicating that women who have higher levels of resilience experience less PTSD symptoms. The negative correlation between childhood trauma and resilience scores was also high and significant ($r = -.574$, $p < .005$), indicating that women who experienced more childhood trauma show lower levels of resilience.

4.2. Age as a possible covariant variable

The first step of the multiple hierarchical regression analysis was calculated to check whether age can be considered a possible covariant variable in the equation. This Model 1 had an R^2-value of .022 ($F = .552$, $p = .465$), which can be interpreted that Age ($b = -.150$, $p = .465$) accounts for 2.2% of the variance in PTSD symptoms and cannot be considered a significant covariate.

4.3. The impact of childhood trauma on PTSD symptoms

The second model in the multiple hierarchical regression analysis was calculated to predict the total PTSD symptoms scores of the respondents based on their experiences of total childhood trauma, while correcting for age. Model 2 had an R^2-value of .614 ($F = 18.269$, $p \leq .000$). Childhood Trauma significantly explained an additional 59.1% of the variance in PTSD symptoms, after controlling for Age (F change (1, 23) = 35.199, $p \leq .000$). Independently, Childhood Trauma was positive significant ($b = .770$, $t = 5.933$, $p = \leq .000$), indicating that women who experienced a higher level of childhood trauma showed an increased amount of PTSD symptoms in adulthood.

4.4. The impact of resilience on PTSD symptoms

The third model in the multiple hierarchical regression analysis was calculated to predict the total PTSD symptoms scores of the participants based on their total resilience scores, while correcting for age and childhood trauma. Model 3 had an R^2-value of .743 (F = 21.233, $p \leq$ .000). Resilience significantly explained an additional 13% of the variance in PTSD symptoms, after controlling for Age and Childhood Trauma (F change (1, 22) = 11.106, p = .001). Independently, Childhood Trauma was still positively significant (b = .519, t = 3.930, p =.001) after adding Resilience, which indicates that resilience cannot be considered as a possible full mediator in the relationship between childhood trauma and PTSD symptoms. In addition, Resilience was negatively significant (b = -.440, t = -3.333, p = .003), indicating that women with a higher level of resilience showed a lower amount of PTSD symptoms in adulthood.

4.5. The impact of resilience on the relationship between childhood trauma and PTSD symptoms

The fourth model in the multiple hierarchical regression analysis was calculated to predict whether a moderating effect of resilience exists on respondents' PTSD levels while correcting for age, childhood trauma and resilience. Model 4 had an R^2-value of .765 (F = 17.081, $p \leq$ .000). The Interaction variable explained an non-significant additional 2.2% of the variance in PTSD symptoms after controlling for Age, Childhood Trauma and Resilience (F change (1, 21) = 1.931, p = .179). Besides, the Interaction variable was not independently significant (b = .152, t = 1.389, p = .179). Hence, this indicates that resilience cannot be considered as a moderator in the relationship between childhood trauma and PTSD symptoms.

The results of the final model are presented in Table 1.

Table 1.

Summary of hierarchical linear regression analysis for variables predicting PTSD scores

Model 4	Unstandardized coefficients (B)	Standardized coefficients (beta)	*t*	*p*
(Constant)	41.575		2.652	.015
Age	-.135	-.068	-.635	.533
Childhood Trauma	.463	.555	4.207	.000
Resilience	-1.204	-.422	-3.247	.004
Interaction*	3.737	.152	1.389	.179

* Childhood Trauma x Resilience

5. Discussion

5.1. Study findings

The original study of this thesis aimed to investigate the influence of peer support groups on PTSD symptoms through a possible increase in resilience in female victims of domestic violence. Due to COVID-19 restrictions, it was not possible to continue the original study. Therefore a new study was conducted which explored the impact of resilience on PTSD symptoms in female victims of childhood abuse.

The first finding of the study indicates that there is a positive relationship between childhood trauma and PTSD symptoms, which is in line with the first hypothesis. This result indicates that women who experienced higher levels of childhood trauma show an increased amount of PTSD symptoms in adulthood. The second finding of the study – which is in line with the second hypothesis – indicates that a negative relationship exists between resilience and PTSD symptoms. This suggests that women who have a higher level of resilience show a lower amount of PTSD symptoms in adulthood. Moreover, the third finding of the study

indicates that resilience does not function as a negative moderator in the relationship between childhood trauma and PTSD. This contradicts the third hypothesis, which expected that resilience negatively affects the strength of the positive relationship between childhood trauma and PTSD symptoms. Other findings of the study show that women who experienced more childhood trauma show lower levels of resilience.

The positive relationship between childhood trauma and PTSD symptoms is in line with previous research. For instance, in the systematic review of Carr, Duff and Craddock (2018), the researchers covered 111 systematic reviews and meta-analyses and found that experiencing childhood maltreatment is correlated to experiencing PTSD in adulthood. In their review, Carr et al. (2018) referred to childhood maltreatment as physical, sexual and emotional abuse, as well as physical and emotional neglect. In the current thesis the identical concept is referred to as childhood trauma and therefore the finding of this thesis builds on existing evidence. It is of scientific and social relevance, because more evidence of the positive relationship between childhood trauma and PTSD levels shows how important it is to investigate which variables may play a role in this relationship. Hence, discovering those variables may create clinical possibilities to decrease the amount of PTSD levels, so victims can suffer less after experiencing childhood trauma.

The negative relationship between resilience and PTSD symptoms fits with previous research by Anderson & Bang (2011), which found that higher resilience scores were significantly correlated with lower levels of PTSD. In their study, many adult women who were exposed to domestic violence in their childhood had higher levels of resilience, while showing lower levels of PTSD symptoms. The study also states that participants, however, were not free of PTSD symptoms. Many women were still symptomatic for PTSD (23.5%), yet they also showed adaptiveness as their average resilience score was higher compared with other PTSD populations (Anderson & Bang, 2011). In the current thesis, 61.54% of the women were symptomatic for PTSD (Boeschoten et al., 2014) while simultaneously showing various levels of resilience. The finding is of scientific and social relevance, because resilience could be considered a possible protective factor to further study in adult victims of childhood trauma. Clinical treatments may focus on boosting resilience in these victims to

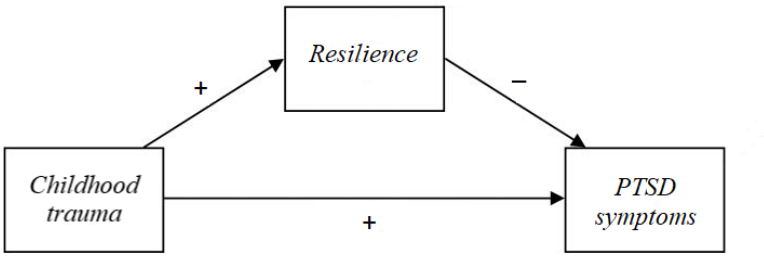
decrease the amount of PTSD levels and therefore increase the quality of life in these individuals.

The third finding of this study contradicts the third hypothesis by suggesting that resilience does not work as a negative moderator. Specifically, in this study resilience did not decrease the strength of the relationship between childhood trauma and PTSD symptoms, but was however predicted by the severity of childhood trauma. Although not formally tested in this study, there may be a possible partial mediating role of resilience (Figure 2) in the relationship between childhood trauma and PTSD levels. This hypothesis is supported by previous studies in which resilience has been found a possible mediator of the relationship between childhood trauma and PTSD symptoms. For example, in the cross-sectional study of Kim, Kim and Kong (2017) the researchers investigated whether resilience mediated the relationship between childhood trauma and PTSD in 169 Korean Marine Corps soldiers. The study found that resilience mediated in the relationship between childhood neglect (as a subtype of childhood trauma) and PTSD during military service. In another study, Richardson and Jost (2019) examined the possible mediating effect of psychological flexibility in the relationship between childhood trauma and psychological symptoms (including PTSD) in 251 adult participants. In their study, Richardson and Jost (2019) defined psychological flexibility as "the ability to flexibly adapt to situations through acceptance and fully experiencing all thoughts and feelings", which corresponds to the concept of resilience in the current thesis. Additionally, they studied both the amount and impact of childhood trauma in their participants by using the complete version of the Early Trauma Inventory Self-Report (ETI-SR; Bremner, Bolus & Mayer, 2007). In addition to the total amount of traumas that participants experienced, the impact of their traumatic experiences on the emotional, work, academic and social lives were measured. Richardson and Jost (2019) found a partial mediation effect of psychological flexibility in the association between trauma impact and PTSD levels. However, the mediation model including the amount of trauma as a predictor was not significant. Therefore, these findings may suggest that resilience could function as a partial mediator in the relationship between PTSD levels and the experienced impact of childhood trauma, rather than the amount of traumatic events a person experienced in their childhood. This emphasizes the importance of investigating the impact instead of merely the

amount of childhood trauma in both research and clinical practice, thus interventions can focus on those who are more affected by trauma. This way, the focus can be on boosting resilience in individuals who are more vulnerable to develop PTSD symptoms.

As discussed previously in the introduction, there has been a dissensus in previous literature about resilience being trait- or state-related. Considering the results of this thesis, which suggest that there may be partial mediating effect of resilience in the relationship between childhood trauma and PTSD levels, resilience seems to be a construct which develops over time through life-experiences such as trauma. This also emphasizes clinical practices to boost resilience as it may be flexible to change.

Figure 2. *The possible negative partial mediation effect of resilience in the positive relationship between childhood trauma and PTSD symptoms*



5.2. Strengths, limitations and recommendations for future research and practice

The results of the current study should be considered in the light of its limitations. First of all, the cross-sectional design of this thesis was constrained by not being able to draw causal conclusions. Because the variables were not analyzed over a period of time, the direction and nature of the relationships could not be tested. Specifically, perhaps experiencing more PTSD symptoms after childhood trauma could cause lower levels in resilience, rather than the opposite direction. In addition, it is interesting to examine whether resilience levels change over time. Future research could build on those constraints. A longitudinal design is preferred to verify the direction of the relationships. Nevertheless, research suggests that – despite its limitations – there are good reasons for still incorporating a cross-sectional design, as it is "efficient in the use of scarce researcher resources" (Spector, 2019). Future cross-sectional

designs could be optimized by including various control variables to rule out alternative explanations, studying alternative sources of data and implementing experimental approaches (Spector, 2019). In the case of this study, future research could focus more on the severity of childhood trauma instead of the amount of experiences. It could also include control variables such as family communication, which may have a positive effect on resilience and a negative effect on PTSD levels. Future studies could also implement clinical treatments or peer support interventions to investigate whether these have an effect on resilience and PTSD symptoms, measured before and after the interventions.

Subsequently, the second limitation is that all data in this study was acquired through self-report questionnaires. Self-report measures are prone to response biases, because respondents tend to respond in socially desirable ways (Donaldson & Grant-Vallone, 2002). Acknowledging distress is often considered undesirable (Brunet, Boucher & Boyer, 1996), which is why the assessment of trauma and PTSD levels may have been underestimated in this study. Possible biases may also be influenced by respondents who experience difficulties exploring their inner-world. Therefore, future researchers are recommended to conduct designs which are less prone to bias, for instance by applying interviews with third parties to acquire relevant information.

The third limitation is that the current study only analyzed the amount of traumatic experiences without measuring the intensity of these experiences. Considering that resilience possibly only mediates PTSD symptoms after impactful childhood trauma (Richardson & Jost, 2019), merely counting the amount of traumatic events in childhood does not reflect the intensity or severity of the events, because not all traumatic events are equal in intensity (Higgins & McCabe, 2001). Hence, recommendations for future research is to investigate and apply more comprehensive assessments of childhood trauma, including both severity and frequency to estimate the most vulnerable victims (Vrana & Lauterbach, 1994). This could for instance be done by implying the complete version of the Early Trauma Inventory Self-Report (ETI-SR; Bremner, Bolus & Mayer, 2007).

The fourth limitation of the study is that the generalizability of the results is limited by the small sample size, which only included Dutch, female respondents. Therefore the findings cannot be considered representative of the broader populations of adult victims of childhood

trauma. Recommendations for future research are to gather a larger and more gender-inclusive study sample to maximize generalizability.

Despite the limitations of this study, the findings are potentially useful and can build on existing literature examining the mechanisms and relationships between childhood trauma, PTSD symptoms and resilience. Finding out that many pairs of variables may be highly associated, yet without knowing their directional associations, is beneficial for future research as the outcomes can be analyzed to create more in-depth research. For instance, by finding that women who report higher levels of resilience report lower levels of PTSD symptoms, future research could consider analyzing how to boost resilience in women who report lower levels of resilience and therefore decrease their suffering. Besides, a valuable strength of this thesis is that the measurement instruments appear to have moderate to high reliability and validity scores. Hence, the CTQ-SR, PCL-5 and RES can be considered adequate instruments to use in future research.

This thesis emphasizes that boosting resilience in victims of childhood trauma may be an important route for treatment, because resilience can function as a protective factor in the development of PTSD symptoms in adulthood. Besides, it could possibly decrease symptoms in individuals who already experience PTSD. Boosting resilience can for instance be executed by means of peer support groups, which may function as a safe place of trust and safety for fellow victims to share their experiences by comparison with others (Henson & Schinderman, 1980). Peer support groups are more cost-effective and practical in comparison to individual psychological treatment, because it can be executed in a non-clinical environment by an experienced individual who does not have to be a licensed professional. This way, participants could benefit from accessing information and advice while learning new skills and strategies. It initiates the possibility for adult victims of childhood trauma to evolve from ‘victims’ into ‘survivors’ together.

5.3. Conclusions

This thesis aimed to identify the relationship and the mechanisms between childhood trauma, PTSD symptoms and resilience in an adult sample of women who have experienced trauma. Based on the findings of this cross-sectional study, it can be concluded that having

experienced more childhood trauma seems to, indeed, be associated with having higher levels of PTSD symptoms. Besides, women who report higher levels of resilience report lower levels of PTSD symptoms. However, contradictory to the last hypothesis, the findings indicate that resilience does not function as a negative moderator in the relationship between childhood trauma and PTSD symptoms. Yet, the results show some indications of a possible partial mediating effect of resilience in the relationship.

To better understand the implications of these results, future studies could consider further examining the exact role of resilience in the relationship between experienced childhood trauma and the development of PTSD symptoms. Based on these conclusions, the study points to the importance of boosting resilience of victims of childhood trauma, for instance by means of peer support groups, because it might function as a protective factor in the development of PTSD symptoms in adulthood.

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