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To explore whether stress experienced during childhood and levels of perceived social support are predictors of resilience.

Eleanor Fitzpatrick

Supervised by: Dr Maria Cordero

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ABSTRACT

Research has been conducted to assess what makes individuals resilient. When considering resilience, it has been highlighted that childhood adversity can often be implicated and individuals have displayed positive outcomes in the face of this. Social support has also been implicated in this relationship and has been suggested to act as a mediating role. The current study attempted to find a relationship between these three variables and find childhood stress and social support to be significant predictors of resilience. Undergraduate students (N = 137) were used for this study and they were recruited via convenience sampling. Participants completed the Connor-Davidson Resilience Scale (CD-RISC) and Likert scales developed by the researcher to measure levels of childhood stress and perceived social support during these times. The data underwent a multiple linear regression and it was found that childhood stress was not a significant predictor of resilience but social support was. The report discusses the findings of this study and its strengths and weaknesses. Furthermore, the practical applications of these findings are highlighted and suggestions are made for future research in this area.

KEY WORDS:	CHILDHOOD STRESS	SOCIAL SUPPORT	RESILIENCE	CD-RISC	MEDIATING FACTOR
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Introduction

Stress is a concept widely studied in the domain of Psychology, affecting the physiological and psychological well-being of an individual. Exposure to stress during childhood can often occur as a result of multiple conditions such as maltreatment, neglect and household dysfunctions (Nurius et al., 2015). Researchers have extensively examined the poor effects experiences of childhood adversity have on psychological functioning in adulthood (Trotta et al., 2015; Greenfield and Marks, 2010; Shapero et al., 2014). In such scenarios, resilience has been identified as a mitigating factor, perhaps reducing the poor effects implicated by childhood adversity. Resilience has been defined as successful adaptation succeeding exposure to stressful situations (Seery et al., 2010). It has been implied that the role of resilience occurs as a result of a 'positive toughening effect' (Deinstbier, 1989; 1992, cited in Seery et al., 2010) following moderate levels of adversity, and so can occur as a direct result of facing adversity. Additionally, it has been suggested that social support can also be a mediating factor in the face of adversity, again, reducing the associated negative effects (Cheong et al., 2017).

Resilience is a relatively newly researched concept in psychology, gaining popularity with the shift towards positive psychological concepts in the 1970s (Bonanno and Diminich, 2012). Bonnano and Diminich (2012) have identified advances in psychological investigation into the process of resilience, stating early research focused on factors leading to positive outcomes following adverse experiences. Since then, the focus has developed and current research tends to take an integrative approach to resilience, considering multiple factors such as behaviour, neuroscience and genetic factors. Whilst this may be true to some extent, current research indicates multiple aspects of resilience are still being studied. Davydof et al., (2010) highlighted a lack of consensus on theoretical perspectives and methodology in their review on resilience and mental health. They also suggested current theoretical knowledge conceptualises resilience from three perspectives – harm reduction, protection and promotion. They refer to this a 'multi-level' construct for mental resilience with a focus on biopsychosocial factors. The biopsychosocial paradigm is well respected across the domain of psychology due to the appreciation of multiple disciplines and the interaction between them (Freedman, 1995). Therefore, this theoretical approach may be considered sound in it's assumptions in relation to resilience. Hu et al., (2015) considered trait resilience in their meta-analytical review of 60 studies, concluding that individuals with lower trait resilience presented with higher rates of poor mental health. This meta-analysis offers support for the Davydof et al., (2010) Model of Three Resilience System mechanism, suggesting that studies into trait resilience promote the attempt of a unified theoretical approach to understanding the role of resilience. The current study attempts to consider resilience from a multi-level perspective as two variables are considered as predictors. Stress experienced during childhood could be considered a psychological factor and has, in fact, been investigated from a biological aspect due to susceptibility to certain stress responses as a result of carrying particular genes (Das et al., 2011). Furthermore, considering the impact of social support addresses social/environmental issues, making the study integrative in it's attempt to study predictors of resilience.

As stated, the negative effects of experiences of adversity in childhood have been studied (Cloitre and Beck, 2017). However, recent studies have begun to address the proportion of individuals who have faced childhood adversity and do not suffer negative consequences in later life. Schulz et al., (2014) investigated the mediating effect of resilience in relation to childhood maltreatment and major depressive disorder (MDD) in adulthood, finding individual's who had experienced childhood maltreatment could still display high levels of resilience. Furthermore, a

significant association between MDD and resilience was found, showing individuals with low resilience scores had a higher chance of developing MDD. Similarly, Roy and Sarchiapone (2011) studied the effects of resilience in individuals who had experienced childhood trauma and had attempted suicide in the past. They found abstinent substance users and prisoners who had not attempted suicide scored significantly higher on the Connor-Davidson Resilience Scale (CD-RISC). They therefore suggested that resilience may act as a protective factor, reducing the risk of suicide in individuals who have a past associated with childhood trauma, supporting Davydov et al's., (2010) conceptualisation of resilience as protection. Beutel et al., (2017) recently studied the role of resilience in the face of childhood adversities on a large sample of German participants. Interestingly, they found adverse childhood experiences to be associated with higher age, reduced social support and low resilience, suggesting stress experienced in childhood does not lead to higher levels of resilience. However, it was found that highly resilient participants displayed low symptom scores even when they experienced childhood adversity. This could be an issue with self-report questionnaires as perhaps resilient individuals are more likely to diminish the effects of adversity. Conversely, this could be an accurate representation, indicating resilience protects individuals from the negative effects associated with adversity. It is unclear, however, whether it is the process of adversity that fosters resilience or whether resilience is an individual trait that is utilised in response to negative situations. This study therefore, attempts to establish whether the process of experiencing childhood adversity itself produces resilient individuals.

Addressing resilience and its interaction with childhood adversity is complex, as can be seen by the variety of research. Due to the nature of experiencing childhood adversity, this interaction can become more complex as multiple factors may be implicated. In line with a multi-disciplinary approach to understanding resilience, it is important to consider these. One of these is perceived social support. It has been suggested that, like resilience, social support can potentially act as a protective factor in the face of adversity. Wang and Xu (2017) explored associations between resilience and quality of life under the mediating influence of social support in survivors of a fatal earthquake in China. Social support was found to be a moderator for the positive effects of resilience on quality of life. Resilience could therefore be a trait possessed by certain individuals and the role of social support allows this trait to be used effectively to deal with adverse situations. This is perhaps in line with theoretical underpinnings suggesting resilience is a trait. However, this study does not explore social support and resilience in relation to stress experienced during childhood so it could be difficult to apply these findings to the current research. DuMont et al., (2007) explored predictors of resilience in abused children in adulthood. They found 48% of individuals who had experienced such abuse in childhood demonstrated resilience in adulthood compared to 61% of individuals who had not experienced abuse in childhood (controls). Whilst those who had experienced childhood abuse did display lower levels of resilience compared to controls, it is still important to acknowledge that nearly 50% displayed resilience, in spite of what they had experienced during childhood. Furthermore, they found those who were involved in a highly supportive spousal or partner relationship were more likely to be resilient in adulthood. This appears to support Wang and Xu's (2017) findings, suggesting resilience is 'boosted' by higher levels of social support. The current study aims to investigate these suggestions by exploring the role of social support and how it interacts with levels of resilience following stress experienced during childhood.

Due to the inferred relationship between resilience and levels of perceived social support in the context of childhood adversity, combining these variables to explore how they interact may produce sound findings. Knowledge about the importance of social support can be taken from early developmental psychology theory. Bowlby's theory of attachment (1979, cited in Maximo

and Carranza, 2016) suggests a critical period in which children must form an attachment with a caregiver in order to avoid psychological dysfunction in later life. Contemporary research has considered Bowlby's (1979) theory of attachment in relation to resilience as an outcome of experiencing stress. Maximo and Carranza (2016) addressed this in their study with graduating students in the Philippines. They found secure attachments to be significantly correlated with resilience and secure attachments significantly contributed to the variation in resilience in a high stress group. Whilst this may be generalised to student populations, the study may be limited due to cultural differences and therefore may be difficult to apply to western populations due to known differences in parental attachment styles (Ainsworth and Bell, 1970). However, despite cultural differences the study highlights the importance of social support and can be applied in the context of the current research. Thomson and Jaque (2017) explored attachment in relation to adverse childhood experiences (ACEs), finding those who had experienced high levels of ACEs still displayed psychological resilience as a result of having a secure attachment. As suggested by Bowlby, secure early attachments may therefore produce positive outcomes in adulthood and therefore boost psychological resilience.

Poole et al., (2017) emphasised a gap in the literature regarding the previously mentioned areas (childhood adversity and resilience). They studied childhood adversity and whether resilience acts as a protective factor against major depressive disorder (MDD). They found those with higher resilience scores had lower associations with MDD. Unlike other studies, Poole et al., (2017) considered different types of childhood adversity as they acknowledged issues with previous studies in relation to only identifying one type of adversity. This is something that can be observed in this kind of literature as there is often a focus on physical or psychological maltreatment (i.e. Schulz et al., 2014). The current study also attempts to address this as the focus is on childhood stress as a general term rather than asking about specific adverse events in childhood. It allows research to be generalisable more individuals. However, Poole et al's., (2017) findings may lack generalisability in different ways, as their focus was on resilience as a protective factor against MDD specifically. It may be more robust to consider resilience in terms of overall psychological well-being rather than just a protective factor against one clinical issue. The current study attempts to address resilience from a different angle, considering predictors and, potentially, causes of resilience.

A consideration of existing literature provided reasoning to conduct the current study. Existing research conceptualises resilience in multiple different ways. The research attempts to address this by taking a multi-factorial approach to understanding resilience, by considering stress experienced during childhood and social support. As previously mentioned, existing research on childhood stress also tends to adopt a negative view with a focus on clinical samples. As stress is a concept with a huge variety in definition and major implications, it is important to acknowledge different components of stress and the different effects it has on individuals. For this reason, the current study attempts to address the lesser studied positive impact of stress. With theoretical justification for a 'toughening effect' leading to resilience, it was deemed appropriate to assess stress experienced during childhood as a predictor of resilience. Another focus of existing research is explorations of the effects of physical and psychological childhood trauma. This may not be the most robust way to assess resilience and the mediating role of social support as trauma suffered during childhood as a direct result of caregivers may be more psychologically scarring for individuals than stress as a whole. Furthermore, in such scenarios social support is likely to be less available and so it may be difficult to consider the mediating effects of this. The current research considers stress experienced during childhood as opposed to abuse or neglect as this stress may be experienced within a family unit, therefore more social

support may be available, creating an environment whereby resilience can be produced. A consideration of the above prompted the following hypotheses to be made:

1. Childhood stress will be a significant predictor of resilience scores in undergraduate students
2. Perceived social support will be a significant predictor of resilience scores in undergraduate students

Method

Design

This was a quantitative study with a correlational design. Childhood stress and perceived social support were predictor variables whilst resilience was the criterion variable. Correlations and a multiple regression were conducted to assess whether the predictor variables accounted for any variance in the criterion variable. The method of assessment was self-report questionnaires which was appropriate with regards to methods used within the existing literature (Roy and Sarchiapone, 2011; Beutal et al., 2017; Das et al., 2011).

Participants

Participants were recruited through opportunity sampling on the Manchester Metropolitan participation pool. The study was advertised to undergraduate students between the ages of 18 and 25. This age range was used as the aim of the study was to address stress and social support experienced during childhood and so the age of 25 was an appropriate cut off. Due to this specific range in the sample, it was initially proposed that 200 participants would be recruited. However, due to the short time in which participants were being recruited, the final sample size was 137.

Materials

Two questionnaires were used for this study. One of which was the Connor-Davidson Resilience Scale (CD-RISC, see appendix 1) which has been used to measure resilience and is a well-established questionnaire commonly used in research. Connor and Davidson (2003) developed the scale as a simple but valid measure of resilience. The CD-RISC comprises of 25 items, for example, "I tend to bounce back after illness, injury, or other hardships." Each of the items are scored on a 5-point Likert scale with 0 = not true at all, 1 = rarely true, 2 = sometimes true, 3 = often true and 4 = true nearly all the time. Scoring of this scale is based on an overall sum of each item the participant has indicated (i.e. 0 to 4), therefore the score range is 0-100. The higher the score, the more resilient the individual is. Connor and Davidson (2003) reported the Chronbach's alpha coefficient as .89, proving high internal consistency. As there was no specific lifespan questionnaire for levels of stress experienced during childhood and perceived social support during those particular times, a simple questionnaire was created (appendix 2). The questionnaire asked the participants "How stressful was this period of your life?" for each five-year period of their life starting from 0 up to 25. The responses were on a 5-point Likert scale with 1 being not stressful at all and 5 being highly stressful. The questionnaire also measured levels of perceived social support during these time periods (appendix 2) and so asked participants "How much social support did you have?". Again, the responses were on a 5-point Likert scale with 1 being very little support and 5 being highly supportive. Scoring for this questionnaire was, again, based on a sum of each item the participant indicated (i.e. 1 to 5), therefore the score range is 0-25. The higher the score, the more stress the individual

experienced as a child and the more social support they had. The Manchester Metropolitan University participation pool was used as the method of recruitment. This was the chosen method as the participation pool allows undergraduate students (the target population) access to the study.

Procedure

Once the study had been decided upon, ethical approval was requested and granted by the study supervisor at Manchester Metropolitan University (appendix 3). Permission had to be requested for the CD-RISC as the questionnaire was not available to the public. Once permission was granted (appendix 4), the online questionnaire was created using Qualtrics. Participants could access the study via Qualtrics which included the information sheet (appendix 5), the consent form (appendix 6), the CD-RISC, the stress experienced during childhood and perceived social support questionnaire and the debrief sheet (appendix 7).

Undergraduate students were recruited via the Manchester Metropolitan University participation pool where they were able to see a brief description of the study and volunteer to take part. Upon starting the study, participants were taken to an information sheet, describing the study in detail. After this, they were taken to the informed consent sheet where they were presented with 8 statements. At the end of this page, they were presented with a question: "do you consent to take part in this study?" to which they could answer "yes" or "no". By answering "yes", participants indicated they understood what the study entailed and still wanted to take part. Within these statements they were also made aware that they could withdraw at any point up until two weeks after participation in the study. If participants answered "no" they would be taken to the end of the study. After the informed consent page, participants were able to create a unique code (appendix 8) with the day of the month they were born, the last two letters of their postcode and the last two digits of their home telephone number. This allowed their data to be retrieved if they wished to withdraw after their data was submitted. Following this, participants completed the CD-RISC and the stress experienced during childhood and perceived social support questionnaire. Upon completion of the two questionnaires, participants were taken to the debrief sheet where they were thanked for taking part and reminded of their anonymity and given contact details in the event that they wanted to withdraw their data. All data collected was kept secure on the researcher's password protected laptop.

Analysis

The collected data was inputted into SPSS ready for analysis. The data underwent preliminary analysis to establish whether it met the assumptions necessary for parametric testing (as displayed below). Once it was confirmed that the data met parametric assumptions, Pearson's correlations were conducted to understand any relationships shown between the three variables. To further the understanding of the data, a multiple regression was conducted which allows the researcher to assess how much of the variance the predictor variables (childhood stress and perceived social support) account for in the criterion variable (resilience). This type of analysis was appropriate for a study with three variables as it allows for a deeper understanding of how they interact with one another (Mayers, 2013).

Reliability Analysis

Table 1 shows scores for Cronbach's alpha reliability tests which were conducted on each of the measures used in the study. A score of .7 or above suggests a measure is reliable according to

Cronbach's. As demonstrated in the table, the CD-RISC demonstrates high internal consistency with a score of .87.

Table 1: Cronbach's alpha score

Measures	Number of items	Cronbach's alpha
Resilience	25	.87

Descriptive statistics

Descriptive statistics revealed the mean and standard deviation for each measure. This shows whether the sample as a whole scored generally low or high in each measure. The results can be seen below in table 2.

Table 2: Descriptive statistics

Measures	SD	<i>n</i>	<i>M</i>
CD-RISC	137	62	11.59
Childhood Stress	137	14	3.17
Perceived Social Support	137	19.32	4.51

Pearson's correlations were computed for each variable (see Table 3). A significant positive correlation was found between social support and resilience, $r(135) = .34, p < .001$ which is a medium effect size (Cohen, 1988). However, a negative correlation was found between childhood stress and resilience, $r(135) = -.15, p = .04$ which is a small effect size (Cohen, 1988). A significant negative correlation was also found between childhood stress and social support, $r(135) = -.37, p = <.001$ which is a medium effect size (Cohen, 1988).

Table 3: Correlations from the Pearson correlation

Variable	Childhood Stress	Social Support	Resilience
Childhood Stress		-.37	-.15
Social Support			.34
Resilience			

Multiple Regression

The data were tested to assess whether parametric assumptions were met. An analysis of standard residuals was carried out, this indicated there were no obvious outliers in the data (Std. Residual Min = -2.87, Std. Residual Max = 2.41). Tests also indicated the data met the assumption of no multicollinearity (Childhood stress, Tolerance = .87, VIF = 1.16; Social support, Tolerance = .87, VIF = 1.16). The data also met the assumption of independent errors (Durbin-Watson = 1.74). The scatterplot of standardised residuals was examined, revealing the data met the assumptions of linearity and homogeneity of variance. After carrying out these tests, it was concluded that the data met the parametric assumptions necessary for this type of analysis.

A multiple regression was conducted to analyse how predictive the variables 'childhood stress' and 'social support' were of 'resilience' amongst undergraduate university students. From this, a

significant model was found ($F(2, 134) = 8.9, p < .001$). The relationship between the variables was $R = .34$ and the model could explain approximately 11.7% ($R^2_{adj} = 10.4\%$) of the variance in resilience scores. The model indicated a medium effect size as suggested by Cohen (1988). Social support significantly predicted resilience, $\beta = .33, t(134) = 3.78, p < .001$. However, childhood stress did not significantly predict resilience, $\beta = -.03, t(134) = -.36, p = .72$. A summary of the predictor variables and their contribution to the variance in resilience scores is displayed below (Table 4).

Table 4: Summary of multiple regression analysis with 95% confidence intervals

Variable	<i>B</i>	<i>SE B (std. Error)</i>	β (beta score)	95% Confidence Interval	
				Lower Bound	Upper Bound
Constant	47.25	7.34		32.74	61.76
Childhood Stress	-.11	.32	-.03	-.75	.52
Social Support	.85	.22	.33	.40	1.29
$R^2 = 11.7\%$					

Considering these results, the first hypothesis “Childhood stress will significantly predict resilience scores in undergraduate students” was rejected. This is because childhood stress was not found to significantly predict resilience scores in undergraduate students. The second hypothesis “Perceived social support will significantly predict resilience scores in undergraduate students” was, however, accepted. This is because perceived social support was found to significantly predict resilience scores in undergraduate students.

Discussion

As indicated by the analysis, a Pearson’s correlation highlighted a weak negative correlation between childhood stress and resilience. Additionally, a multiple regression demonstrated that childhood stress was not a significant predictor of resilience and therefore hypothesis 1 “childhood stress will be a significant predictor of resilience” was rejected. The Pearson’s correlation found a positive correlation between social support and resilience, suggesting the more social support individuals experience during childhood, the more resilient they are as adults. The multiple regression demonstrated that social support is a significant predictor of resilience and therefore hypothesis 2 “social support will be a significant predictor of resilience” was accepted. A further finding from the correlation analysis was a significant negative correlation between the two predictor variables; childhood stress and resilience. This suggests that the more stress individuals experience during childhood, the less social support they felt they had. A discussion of these findings will consider the potential implications and will provide suggestions for future research.

The current study attempted to explore childhood stress as a predictor of resilience. Existing literature suggests studies focus on resilience as a ‘psychological buffer’ or a ‘protective factor’ (Schulz et al., 2014; Roy and Sarchiapone, 2011). As high resilience has often been found in individuals who have suffered adversity in their childhood (Campbell-sills et al., 2009; Groger et al., 2016), it was predicted that stress experienced during childhood may actually produce resilient individuals. Such suggestions have been made before. For example, Seery et al., (2010) suggested that high and low levels of adversity will not promote resilience, but moderate levels of adversity produce the correct conditions to foster resilience. The results of the current study did not reflect this, with hypothesis one being rejected. Beutal et al., (2017) found

childhood adversity to be associated with low resilience, supporting what was found in the current study. Due to the positioning of the variables of the current study, a consideration of further factors may have produced different results. For example, Das et al., (2011) explored childhood adversity and resilience from a genetic point of view, considering whether individuals who were 'protected' by resilience following an adverse childhood carried a particular gene that allowed this to happen. They found individuals who carried a DRD4 genotype appeared to be protected against a decrease in resilience levels after experiences of childhood adversity. They stated that resilience is determined by complex interactions between a number of environmental, social and biological factors and, as demonstrated by their study, multiple factors must be considered. Therefore, perhaps the current study did not consider enough factors for such a complex interaction and so the findings may be reductionist.

As predicted, the second hypothesis "social support will be a significant predictor of resilience" was accepted. It was interesting to find hypothesis two to be significant considering hypothesis one had to be rejected. A negative correlation was found between childhood stress and social support, suggesting the more childhood stress individuals experienced, the less social support they felt they had. This may be accurate as it could be inferred that individuals who experience adverse events during childhood could feel isolated. Perhaps this is especially true for individuals who experience adversity as a direct result of caregivers who are the only potential support system. In Wang and Xu's (2017) investigation of social support as a mediating role in the face of adversity, they found social support to have a 'boosting effect' on resilience. Ford et al., (2011) investigated the positive and negative aspects of social relations and their mediating role in the relationship between childhood adversity and mid-life disorders. They found childhood adversity to be associated with smaller social network size. This supports the current study as a negative correlation was found between childhood stress and social support. However, as with all correlations, cause and effect cannot be established and so any meaning taken from this is postulation. Unlike Wang and Xu (2017), Ford et al., (2011) did not find social relations to moderate the relationship between childhood adversity and mid-life affective and anxiety disorders. However, this does not address the role of resilience and the results are confusing as they suggest childhood adversity leads to low levels of social support, yet increased levels of social support do not decrease affective/anxiety disorders in adulthood. As can be observed by the results of the current study, it has been found that social support predicts resilience in individuals. Contradictory results suggest research needs to be conducted to help understand the roles of the variables considered.

Another interesting point to consider regarding the findings of this study are the measures used. The mean score for the CD-RISC was 62 which appears to be in line with other studies using this measure with undergraduate students as reported in the Connor and Davidson (2017) CD-RISC manual (see appendix 9). Therefore, it can be postulated that the findings for CD-RISC scores in this study are generalisable to the target population. Whilst this may be considered generalisable in terms of the sample used, the same cannot be said for the general population as an undergraduate student sample is specific and so cannot be applied to the whole population. As the childhood stress and perceived social support scales were created for the purpose of this study, comparisons to other studies cannot be made and therefore it is difficult to establish generalisability. There are further issues with the methodology of the study regarding the measures as all three are self-report style questionnaires. This method remains under scrutiny regardless of how well established the measure is, as self-report measures can often lead to social desirability bias. Resilience may be viewed as a positive trait to possess, potentially leading to individuals reporting themselves as more resilient than they actually are. Similarly, with the childhood stress and perceived social support measures, individuals may de-emphasise

levels of stress and over emphasise levels of social support due to sensitivity issues. However, due to the anonymity guaranteed to participants in this study, participants may not find a need to inaccurately present their experiences or traits. Another problem regarding the methodology of the study is that the childhood stress and social support measures included an age range of 20-25 years. However, some of the participants in the sample were aged between 18 and 20 years old and so could not complete this section of the measure. This resulted in less participants completing that age range and so this may have caused inconsistency in the overall measures of stress and social support.

Social support was found to significantly predict levels of resilience in undergraduate students. Furthermore, a significant negative correlation was found between childhood stress and social support, suggesting those who have experienced more childhood stress have lower levels of perceived social support (although causality cannot be established). In terms of practical applications, this may be considered an important finding as social support may increase resilience and therefore this could be a focus point for psychological treatment for individuals affected by adverse childhood experience. Such assumptions have been explored in past research into child abuse and neglect (DuMont et al., 2007), but future research could explore the clinical implications of the effects of social support after adverse childhood experiences. Sheikh et al., (2016) investigated associations between childhood adversity, social support, behavioural factors and mental health, health and well-being in adulthood. They found having no instrumental support led to higher risk for being mentally and physically unhealthy and having no instrumental or emotional support led to increased risk of having low levels of well-being. The findings of this study boast the importance of social support, not only for psychological well-being but also physical health, suggesting it can have a massive impact on an individuals' life. Findings such as this, and from the current study, provide an understanding of the value of social support and therefore boast real-life applications.

Regarding future research, the findings from the current study prompts a more specific exploration of the relationship between childhood stress and resilience. Previous research has suggested resilience to be a protective factor in the face of adversity and so the current study attempted to establish whether childhood adversity can lead to resilience in adulthood. Although no significant findings were produced regarding this, others have found such evidence. For example, Groger et al., (2016) investigated the relationship between epigenetics, childhood stress and resilience, finding evidence that stress correlates with endocrine indicators of reduced stress sensitivity. Furthermore, studies on rats indicate early life stress exposure can lead to adaptive value in later life (Groger et al., 2016). Of course, however, with this being an animal study, the findings cannot be applied to humans. Considering this, future research may focus more specifically on stress experienced at different points in childhood and focus on whether there is a critical period in which adaptive traits can arise as a result. Seery et al., (2010) found individuals who had experienced low lifetime adversity reported better outcomes than those who had experienced no adversity whatsoever, suggesting certain levels of adversity do perhaps promote resilience. Further explorations into what level of adversity can be functional in regards to positive outcomes would perhaps be beneficial for clinical practice. In relation to the mediating role of social support, an interesting focus of further research might be to investigate different types of social support. The current study found social support to be a significant predictor of resilience, but the measure of social support was general and so it was unclear what types of social networks influenced resilience in the participants. Furthermore, a consideration of the types of social support individuals experience across different age ranges may help explain why it is so important in predicting resilience as different value is placed on different types of social relationships over the lifespan. Overall, with the study of childhood

stress, social support and resilience being such a complex interaction, it is important for future research to consider multiple different factors.

In summary, the current study has attempted to build upon existing literature in relation to the variables; childhood stress, perceived social support and resilience. Previous research has suggested links between experiences of childhood stress and positive outcomes in adulthood, and has found social support to be a mediating role in relation to resilience. The current study found a negative relationship between childhood stress and resilience, a significant relationship between social support and resilience and a significant relationship between childhood stress and social support. Furthermore, childhood stress was not found to be a predictor of resilience but social support was. Suggestions for future research include exploring more factors in this complex relationship, looking more specifically at the functionality of social relationships and considering whether there is an optimal level of adversity that can promote resilience.

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