

Adversity, empathy and resilient coping in Syrian refugees

**The relationship between adversity, empathy and resilient coping in Syrian refugees**

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### **Abstract**

**Introduction.** People who seek or have refugee status are often exposed to adversity or traumatic experiences. Although adversity can increase the risk for a range of psychiatric disorders, not everyone copes with these events in the same way. Little is known about positive outcomes following refugees' experiences of adversity, evidence shows that they may have remarkable levels of resilience. Research about adversity and empathy suggest that increasing severity of past adversity predicts increased empathy. The literature stated that adversity can predict increased empathy, and that empathy can foster resilience. However, little is known about this relationship and resilient coping as an outcome, especially in refugees. **Method.** This cross-sectional study includes 56 young adults of Syrian origin (age 18-35). The data were collected through questionnaires about adversity (Harvard Trauma Questionnaire), empathy (Interpersonal Reactivity Index) and resilient coping (Brief Resilient Coping Scale). Data was analyzed using a mediation model which focused on the estimation of the indirect effect of adversity on resilient coping through the intermediary mediator empathy. **Results.** There was no direct effect of adversity on resilient coping. The regression of empathy on adversity, and the regression of the mediator empathy on resilient coping were also not significant. Also, empathy did not mediate the relationship between adversity and resilient coping in Syrian refugees. **Discussion.** Other factors, such as specific personality traits, might have stronger predictive value for resilient coping. Also, active involvement in challenges and adversity may be a requirement for the ability to cope with adversity in a resilient way. The results suggest that adversity itself is not a significant predictor of resilient coping and that this relationship is not mediated by empathy in Syrian refugees. However, in light of existing evidence, it can not be denied that adversity can have negative consequences for mental health and well-being. This gives us a richer understanding of how adversity contributes to mental health and promote ways to investigate other ways to resilient coping in further research.

*Key words:* refugees, adversity, empathy, resilient coping

## **Introduction**

The number of refugees seeking asylum in the Netherlands has rapidly increased in the past years (Joris, d'Haenens, Van Gorp, & Mertens, 2018). People who seek or have refugee status are often exposed to adversity or traumatic experiences (Hollifield et al., 2002): they have fled situations of extreme violence and may have experienced loss of family, hardship and interruptions to schooling or work (Kline & Mone, 2003). Although adversity can increase the risk for a range of psychiatric disorders, not everyone copes with these events in the same way. In a study with Sudan refugees, it was noted that refugees do not respond passively to traumatic events. Even after experiencing forced migration, these people are able to engage with others in an active and problem-solving way (Schweizer, Greenslade & Kaydee, 2007). Another study suggested that people who are experiencing adversity may foster subsequent resilience (Seery, Holman & Silver, 2010). Although little is known about positive outcomes following refugees' experiences of adversity, preliminary evidence shows that they may have remarkable levels of resilience. Despite the growing body of literature on perception of benefits from adversity, few studies focused on the positive outcomes in refugees. In general, research about resilience in refugee populations would alert people to the possibility of positive outcomes in addition to the often documented negative outcomes and allow a comparison among persons confronted with adversity. From a clinical perspective, clinicians should be aware of the potential for positive change in their clients following trauma and adversity.

## **Resilient coping and the process of adaptation**

There is a growing body of literature about the definition of resilience (Luthar et al., 2000). The broad construct resilience can be defined as a complex phenomenon that refers to the ability to recover from or adjust easily to significant stressors (Dyer & McGuinness, 1996). There are two critical conditions in this construct: exposure to significant stress or adversity, and the achievement of positive adaptation despite this adversity (Luthar et al., 2000). The dynamic process of promoting this positive adaptation is defined as resilient coping (Luthar, et al., 2000; Sinclair & Wallston, 2004). There no universally defined concept of what constitutes resilient behavior, but in most studies it is stated that resilient coping behavior could be defined as identifiable positive patterns of thinking, perceiving, and decision making across different types of situations (Agaibi & Wilson, 2005). This includes positive beliefs about the self, moderating emotions, and positive responses to stressors.

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Several theories have focused on factors that allow this adjustment or adaptation. Polk (1997) made a theoretical framework about resilience and how this positive adaptation is formed. In this framework, the positive adaptation or resilient coping behaviour is the tendency to use cognitive appraisal and active problem solving despite stressful circumstances. People who can be defined as 'resilient individuals' are capable of successfully dealing with stressful situations by extracting positive changes from the experience.

Another theory about the process of adaptation is the cognitive adaptation theory (Taylor, 1983). This theory states that people, after experiencing adversity, can adjust towards positive functioning through cognitive adaptations. For example, finding good in a bad event. These adaptations can nourish the conviction that we are better off than we were before and can produce a perceived benefit of the threatening experience. This process of adaptation follows three steps. First, people search for a meaning in the experience, after that people attempt to regain control over the event and over one's life in general. The last step is to feel good about oneself despite the threatening experience.

### **Adversity and empathy**

Another theme of perceived benefit after adversity is the perception of positive personality change, such as the development of greater empathy (Affleck & Tennen, 1996). Empathy is the ability to know how another feels and understand another's perspective (Benard, 2004). It is suggested that empathy with other persons painful situations is based on a stimulation in the brain that is similar to the experience of peoples own adverse experiences (Hein, 2013). So, people with empathic tendencies tend to feel other people's adverse experiences if they are themselves. Research about adversity and empathy suggest that increasing severity of past adversity predicts increased empathy (Lim & DeSteno, 2016). Schaefer and Moos (1998) stated that individuals who have experienced more frequent adversity, report a re-evaluation of their own lives. They become more aware of the fragility of life and their vulnerability but are also be able to be more compassionate towards others. They come to recognize that each moment of life could provide an opportunity and they try to live life more fully. Similarly, Saylor, Swenson and Powel (1992) stated that parents who lived in an area hit by a hurricane reported positive changes in their children, such as an increased concern for others and an expressed sadness for those who were less fortunate than themselves. Tedeschi and Calhoun (2004) report that people who have experienced adversity, have strengthened family relationships, demonstrated increased empathy, and report more use of social resources like family and friends. Not everyone readjusts from adversity. But most

do and prefer to do this by using their social networks and individual resources (Silver & Wortman, 1980). Individuals who have experienced trauma, could experience an improvement in their relationships, see new possibilities and have a greater appreciation of life. So, experiencing adversity may lead to an increased ability to understand others' feelings and perspectives.

### **Empathy and resilient coping**

When we take a closer look at the relationship between empathy and resilient coping, we see that this relation is mainly researched in social workers. Social work trainees who are more adept at perceiving, appraising and expressing emotion appear to be more resilient to stress (Grant & Kinman, 2014). Also, preliminary evidence suggests that families developed increased compassion for others as a result of their own experiences with loss, trauma, or stress. Families seek to help others to honor lost loved ones, to find meaning in their struggles, and for their own survival. This study supported the idea that meaning making is an important part of families' ability to adapt to high-risk situations. Another study suggested that empathy is an important route for understanding the other and is a crucial precondition for resilience (Hein, 2013). Briefly summarized, we know that adversity can predict increased empathy, and that empathy can foster resilience. However, little is known about this relationship and resilient coping as an outcome, especially in a refugee population.

The present study aims to address this gap in the literature and investigate the positive outcomes of adversity in young adults with refugee backgrounds in comparison to the often documented negative outcomes. It examines if adversity can be related to higher levels of empathy and could lead to more resilient coping. This research can engender a positive note to the existing research, and is important because more understanding of the positive outcomes of adversity may improve optimal functioning and better mental health. Besides, resilient coping is associated with a variety of positive psychological and physical outcomes (Benard, 2000). Therefore, the research questions in this study are:

- 1) Is there a relationship between adversity and resilient coping in Syrian refugees?

Hypothesis 1: It is expected that adversity is directly related to more resilient coping in Syrian refugees.

- 2) Is the relation between adversity and resilient coping mediated by empathy in Syrian refugees?

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Hypothesis 2: It is expected that adversity will be related to higher levels of empathy and will therefore also be indirectly related to higher levels of resilient coping in Syrian refugees. For a conceptual model of this study see Figure 1.

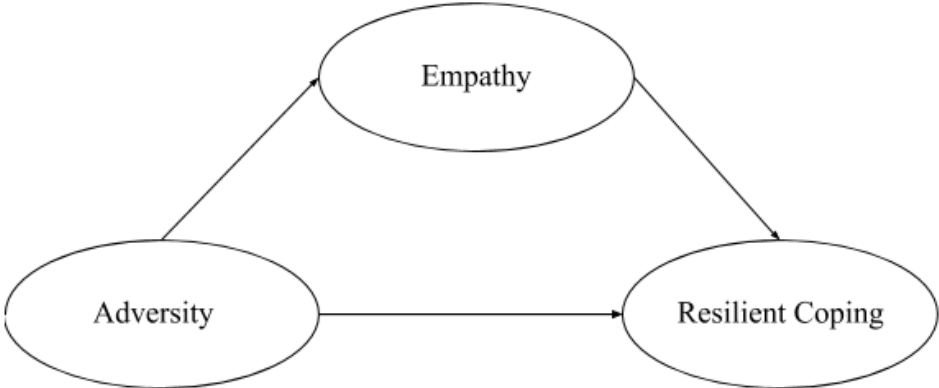


Figure 1. Conceptual model of the present study

### **Methods**

This study has a cross-sectional design in which the relationship between adversity and resilient coping is investigated and if this relationship is mediated by empathy. The study used data collected for the study 'Karakter', a study about character growth following adversity in Syrian young adults. The study was approved by the Medical Ethical Testing Committee of the Utrecht University Medical Center.

### **Sample**

This cross-sectional study includes 56 young adults of Syrian origin (age 18-35) who seek or have refugee status in the Netherlands and have lived in the Netherlands for at least 6 months, but no longer than five years. The mean age of participants was 27.73 years ( $SD = 4.87$ ) and includes 35 males and 21 females. The participants must also be able to read and write in Arabic. All participants spent an average of 22 months in the Netherlands.

### **Procedures**

Participants were recruited through social media, community centers, and asylum seeker and language centers. When the participants were interested to participate in the study, they provided written informed consent. Participants filled out the questionnaire during a face-to-face appointment with a researcher or trained research assistant. An Arabic speaking member of the research team was also present at each face-to-face session to ensure that every step in the process was understood by the participant. Questionnaires were completed online on an electronic tablet, or on paper if this was the participant's preference. Participants were allowed to end their participation at any time during the study. Honest answering was encouraged by reminding participants that their responses were anonymous and will not be linked to any identifying information. In the instructions of the questionnaires there was an extra reminder on topics that encourage social desirability, for example questions about traumatic events.

### **Measures**

To measure adversity the first part of the Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992) was used. This is a cross-cultural instrument designed for the assessment of trauma and torture related to mass violence. The purpose of this questionnaire is to obtain information about the traumatic events that participants experienced in Syria and has been primarily developed for trauma-affected refugees and validated in several languages and settings

(Mollica et al., 1992). This study used a special adaptation of the HTQ for Iraqi refugees, but is assumed to be useful for Syrian refugees (Shoeb, Weinstein & Mollica, 2007). The questionnaire asks about 43 traumatic life events determined to have affected refugees. There are two possible responses for each event: 'yes' (if the participant experienced this event) or 'no'. In the present study the internal consistency of subscale 1 (traumatic life events) of the questionnaire has a Cronbach's alpha of  $\alpha=.91$ , meaning internal consistency is excellent. This was very similar to the alpha value obtained by Keller, et al. (2006).

To measure resilient coping the Brief Resilient Coping Scale (BRCS; Sinclair & Wallston, 2004) was used. The questions were designed to measure resilient coping and the effective use of social support-related constructs. The 4 items have a response format with five options, where '1' means the statement "does not describe you at all" and '5' means "it describes you very well." The total score could range from 4 to 20, with higher scores denoting greater resilient coping. An example item is: 'I believe I can grow in positive ways by dealing with difficult situations'. The BRCS appears to be a valid instrument (Sinclair & Wallston, 2004). In this study the internal consistency of the questionnaire was  $\alpha = .36$ , and was not very similar to the alpha value obtained by Sinclair and Wallston (2004) in the original English version ( $\alpha = .70$ ). The fact that the BRCS is a very short tool with only four items is a great advantage to administer it multiple times, but it can also lower the internal consistency of the scale. Nonetheless, BRCS has sufficient internal consistency reliability and stability for a four-item scale (Shelley, 1984), and therefore the original version was maintained.

To measure empathy the Interpersonal Reactivity Index (IRI; DeCorte et al., 2007) was used. This is a frequently used scale to measure individual differences in empathic tendencies. The IRI consists of four scales, each a component of empathy. In the present study, only the components perspective taking (the tendency to adopt another's psychological perspective) and personal distress (the tendency to have feelings of discomfort and concern when witnessing others' negative experiences) were used (Pulos, Elison, & Lennon, 2004). Each scale has 4 items. Participants indicate how well the items describe them on a five-point Likert scale ranging from 'does not describe me well' to 'describes me very well'. The internal consistency, construct validity, and factor structure of scores from the Dutch version of the IRI suggest that it is a useful instrument to measure people's self-reported empathic tendencies (DeCorte, et al., 2007). In this study, the internal consistency of the overall questionnaire was low at  $\alpha = .35$ . For the subscale 'perspective taking' the internal consistency was  $\alpha = .40$ , and for the subscale 'emotional distress' the internal consistency was



$\alpha = .68$ . Using one of the subscales of the IRI would provide a better internal consistency but does not completely match with the construct ‘empathy’ used in this study. Therefore, both subscales of the IRI were maintained to examine empathy in Syrian refugees as correct as possible.

### **Data Analysis**

All analyses were performed in SPSS, using the macro PROCESS (Hayes, 2017). Data was analyzed using a mediation model which focused on the estimation of the indirect effect of adversity on resilient coping through the intermediary mediator empathy.

## Results

Descriptive statistics were calculated to examine basic characteristics of the data and bivariate relations among observed variables. These statistics included subscale means, standard deviations, and bivariate correlations among scales as reported in Table 1.

### Mediation Model

It was hypothesized that the effect of adversity on resilient coping can be partly explained through empathy, which is assumed to be predicted by adversity and is also itself a predictor for resilient coping. To examine how adversity exerts its effects on resilient coping, and how this is intervened by empathy, a mediation model was assessed.

Before interpreting the results of the mediation analyses, a number of assumptions were tested, and checks were performed. First, a histogram of residuals and boxplots indicated that each variable in the regression was normally distributed and free from univariate outliers. Second, an inspection of the normal probability plot of standardized residuals and the scatterplot of standardized residuals against standardized predicted values indicated that the assumptions of normality, linearity and homoscedasticity of residuals were met.

In order to confirm the mediating variable ‘empathy’ and its significance in the model, it has to be showed that when empathy is included in the model it causes (partial) mediation. Therefore, the significance of the relationship between the different variables, and the insignificance of the relationship between the variables ‘adversity’ and ‘resilient coping’ in the presence of the mediator variable ‘empathy’ were tested. In Step 1 of the mediation model, the regression of resilient coping on adversity, ignoring the mediator empathy, was not significant,  $b = 0.672$ ,  $t(34) = 1.349$ ,  $p = .186$ , so adversity is not a significant predictor of resilient coping. Step 2 showed that the regression of empathy on adversity, was also not significant,  $b = -0.299$ ,  $t(34) = -0.0359$ ,  $p = .722$ . Step 3 of the mediation process showed that the mediator (empathy) controlling for adversity, was also not a significant predictor of resilient coping,  $b = -0.097$ ,  $t(33) = -0.946$ ,  $p = .351$ . Step 4 of the analyses revealed that, controlling for the mediator (empathy), adversity scores were not a significant predictor of resilient coping,  $b = .064$ ,  $t(33) = 1.287$ , 95% CI = -0.02, 0.04. It was found there was no direct effect of adversity on resilient coping, and that empathy did not mediate the relationship between adversity and resilient coping. For a conceptual model of the results, see Figure 2.

Table 1.

*Means, Standard Deviations, Bivariate Correlations, and Reliabilities of Indicators*

Variable	1	2	3
1. Adversity		.72	.19
2. Empathy			.22
3. Resilient Coping			
M	15.19	18.27	15.29
SD	7.95	3.97	2.76
Range	1-43	1-4	1-8

Note. \* $p < .05$

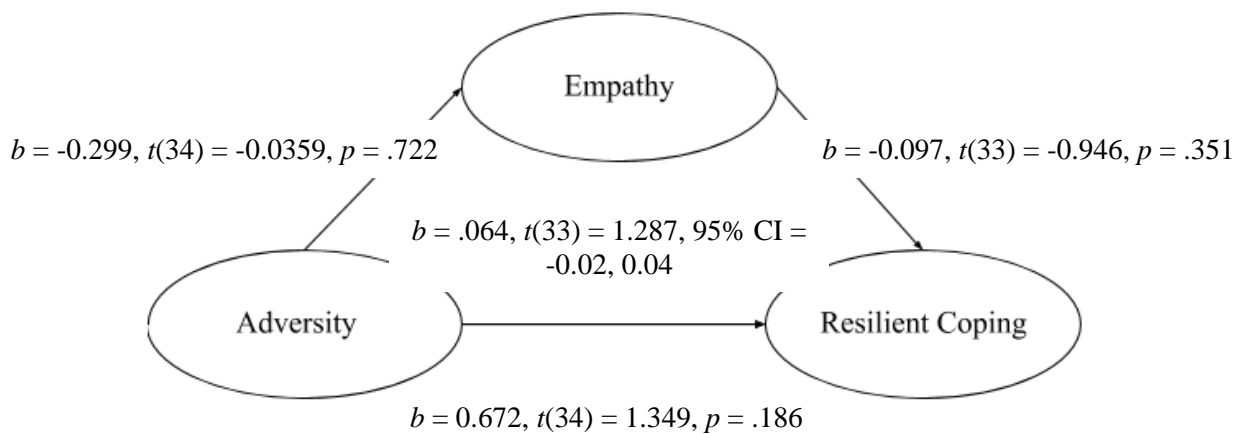


Figure 2. Illustration of the mediation model, with regressions of adversity as independent variable, resilient coping as dependent variable and empathy as mediating variable. \* $p < .05$

### **Discussion**

The aim of this study was to answer the question whether there is a relationship between adversity and resilient coping in Syrian refugees, and if this relationship may be mediated by empathy. The first question was: is there a relationship between adversity and resilient coping? It was expected that adversity is directly related to more resilient coping in refugees. The second question of this study was: is the relation between adversity and resilient coping mediated by empathy? For this question it was expected that adversity will be related to higher levels of empathy and will therefore also be indirectly related to higher levels of resilient coping. The results show that in this study, there is no statistically significant relationship between adversity and resilient coping and that this relationship is not mediated by empathy. So, the results are not in line with the hypotheses and the studies (Lim & DeSteno, 2016; Schaefer and Moos, 1998; Grant & Kinman, 2014). The results may be best viewed in terms of implications for general mental health and well-being. Despite this study did not find a relation between adversity and a resilient coping, it is not stated that positive outcomes following adversity have to be excluded.

Relating the findings to similar studies, several studies indicated a relationship between adversity and resilient coping, and some of them implicated that this relationship might be mediated by empathy. Most of the studies regarding this topic used a sample of social workers (Grant & Kinman, 2014), people who survived an isolated traumatic event, like a hurricane (Saylor, Swenson and Powel, 1992), or people with a specific ethnic background which differs from the Syrian population in this study (Schweizer, Greenslade & Kaydee, 2007). It is possible that demographic characteristics such as gender, ethnicity, age, income, and education and other individual difference variables such as personality or mental and physical health could explain relationships between adversity and well-being outcomes like resilient coping.

### **Alternative explanations**

Also, several potential explanations come to mind regarding to the non-significant results. In a study about resilient coping, it was proposed that adversity itself does not cause empathy, and therefore resilient coping, but the explanation of resilient coping lies in a resilient personality (O'Leary & Ickovics, 1995). Rutter (1987) stated that the relatively stable set of personality traits associated with resilience reduces the probability of negative reactions to stressful events and maximizes the probability of effective coping and adaptation. Resilient traits promote the use of the adaptive coping process regarding to the adversity. In line with

that, repeated successful engagements with stressors then reinforce the resilient traits and make the use of resilient coping more likely in the future (Woodgate, 1999). In this light, a resilient personality or resilient traits could be a strong predictor of adaptive and resilient coping, and adversity may have not that much influence on resilient coping on its own.

Another study suggested that there is a positive relationship between empathy and resilience, but only if empathy is transformed into sympathy or concern for the wellbeing of the other. The authors discussed that the empathy people gained from their adversity transformed into sympathy when helping others. Helping others increased their ability to cope with the new challenges they faced (Kent, Davis & Reich, 2013). So maybe resilience only occurs when people actively bring their empathy in practice, for example in caring for others.

In line with this explanation, it was also discussed how active involvement in the adversity and the degree of exposure could explain the way to resilient coping. First, it is important that the traumatic events are challenging enough to start the cognitive process that is necessary for growth, and that there is opportunity for recovery (Tedeschi & Calhoun, 2004; Dienstbier, 1989). The authors stated that experiencing low levels of adversity could foster effective coping skills. However, higher levels of adversity could deny these benefits and could create feelings of hopelessness and loss of control (Seery, Holman, & Silver, 2010). So, a history of some adversity predicts better outcomes than a history of high adversity but also than a history of no adversity (Seery, 2011). So, maybe the way to resilient coping evolves not naturally and it may be depending on the way how much individuals have actively experienced the traumatic event or adversity.

### **Strengths and limitations**

Unfortunately, this study has a small sample size (N=56). Due to this small sample size, there may be not enough power to interpret the findings clearly. Also, it should be noted that the questionnaire about Resilient Coping is short and the internal consistency is low. This is also the case with the Interpersonal Reactivity Index. The Cronbach's alpha obtained from this questionnaire was low at  $\alpha = .35$ . The cause of the low internal consistency of the questionnaires could be a translation issue. The words and expressions in the questions may be interpreted differently by the participants, due to the translation from English to Arabic. So, the questionnaires about empathy and resilient coping may not capture a comprehensive image of the way people have empathic tendencies and cope in a resilient way. This limitation may be related to the non-significant results. The adversity measure in this study represented the number of events experienced, and not did not contain detailed characteristics of the

traumatic experience. So, the possible variability and personal context was not accounted in the results. Traumatic events or adversity may not be experienced on its own, but in a context of individuals' adversity history. Some aversive life events tend to be more 'strengthening' than others. So, other adverse experiences than war trauma, like childhood trauma, could also be of influence on empathy and resilient coping and wasn't accounted in this study.

Nonetheless, more detailed measures of adversity could provide other important information.

On the other hand, the topic of this study is relatively new, and not much investigated, especially not in refugees. It leads also to relevant questions regarding the big refugee issue nowadays. The gap in the literature that is researched in this study made use of validated questionnaires, which the participants could also answer in their native language. So, as mentioned this study serves a gap in literature and made use of validated questionnaires.

Although the findings are not as hypothesized, there is much clinical relevance regarding the outcomes in this study about resilient coping, especially in refugees. The results suggest that adversity itself is not a significant predictor of resilient coping and that this relationship is not mediated by empathy. However, it can not be denied that adversity can have negative consequences for mental health and well-being. This gives us a richer understanding of how adversity contributes to mental health and promote ways to investigate other ways to resilient coping in further research.

### **Suggestions for further research**

Further research could focus on investigating different types of adversity. Powell et al. (2003) found differences in posttraumatic growth among persons who experienced the war in Sarajevo. In this study, persons who had fled the country and been in socially stable environments reported more growth than those who endured the entire conflict in the country. Although this study focusses on posttraumatic growth, it is a preliminary motive to research the differences between refugees who endured the entire traumatic experience, and refugees who fled the traumatic experience earlier, and how this is related to resilient coping. Also, other possible variables could be further investigated regarding resilient coping after adversity. For example, positive emotions (Folkman & Moskowitz, 2000) or self-enhancement (Bonanno, Field, Kovacevic, & Kaltman, 2002) have been associated with resilience. People who are more self-enhanced adjusted better than other people after adversity. So, assessing other behavioral or physiological mediators like positive emotions or self-enhancement could provide further insight into the underlying mechanisms of resilient coping.

## **Conclusion**

The results of this study show that there is no direct evidence to believe that there is a relationship between adversity and resilient coping, and that this relationship could be mediated by empathy in Syrian refugees. This is important to know because it gives us information about the way refugees may or may not deal with adversity. It can not be denied that adversity can have negative consequences for mental health, and people have always to be aware on negative outcomes of adversity. On the other hand, the literature suggests that there are ways to benefit from adversity and this study gives relevant suggestions to further investigate the ways people deal with adversity and how this may lead to empathy and resilient coping. Further research may also open ways to develop effective treatment for refugees to generate resilient coping and gain benefit after adversity.

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### Appendix 1. Syntax SPSS Statistics

```
COMPUTE Adversity=Q15_1 + Q15_2 + Q15_3 + Q15_4 + Q15_5 +
Q15_6 + Q15_7 + Q15_8 + Q15_9 + Q15_10 +
    Q15_11 + Q15_12 + Q15_13 + Q15_14 + Q15_15 + Q15_16 +
Q15_17 + Q15_18 + Q15_19 + Q15_20 + Q15_21 +
    Q15_22 + Q15_23 + Q15_24 + Q15_25 + Q15_26 + Q15_27 +
Q15_28 + Q15_29 + Q15_30 + Q15_31 + Q15_32 +
    Q15_33 + Q15_34 + Q15_35 + Q15_36 + Q15_37 + Q15_38 +
Q15_39 + Q15_40 + Q15_41 + Q15_42 + Q15_43.
EXECUTE.
RECODE Q30_1 (1=5) (2=4) (3=3) (4=2) (5=1).
EXECUTE.
COMPUTE ResilientCoping=Q30_1 + Q30_2 + Q30_3 + Q30_4.
EXECUTE.
COMPUTE Empathy=Q32_1 + Q32_2 + Q32_3 + Q32_4 + Q32_5 + Q32_6
+ Q32_7 + Q32_8.
EXECUTE.

FREQUENCIES VARIABLES=Q3
  /ORDER=ANALYSIS.

DESCRIPTIVES VARIABLES=Q2 Q3
  /STATISTICS=MEAN STDDEV MIN MAX.

RELIABILITY
  /VARIABLES=Q15_1 Q15_2 Q15_3 Q15_4 Q15_5 Q15_6 Q15_7 Q15_8
Q15_9 Q15_10 Q15_11 Q15_12 Q15_13
    Q15_14 Q15_15 Q15_16 Q15_17 Q15_18 Q15_19 Q15_20 Q15_21
Q15_22 Q15_23 Q15_24 Q15_25 Q15_26 Q15_27
    Q15_28 Q15_29 Q15_30 Q15_31 Q15_32 Q15_33 Q15_34 Q15_35
Q15_36 Q15_37 Q15_38 Q15_39 Q15_40 Q15_41
    Q15_42 Q15_43
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL.

RELIABILITY
  /VARIABLES=Q30_1 Q30_2 Q30_3 Q30_4
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
  /SUMMARY=TOTAL.

RELIABILITY
  /VARIABLES=Q32_1 Q32_2 Q32_3 Q32_4 Q32_5 Q32_6 Q32_7 Q32_8
  /SCALE('ALL VARIABLES') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE CORR
```

## Adversity, empathy and resilient coping in Syrian refugees

```
/SUMMARY=TOTAL.
```

### RELIABILITY

```
/VARIABLES=Q32_1 Q32_2 Q32_3 Q32_4 Q32_5  
/SCALE('IRI PT') ALL  
/MODEL=ALPHA  
/STATISTICS=DESCRIPTIVE SCALE  
/SUMMARY=TOTAL MEANS.
```

### RELIABILITY

```
/VARIABLES=Q32_6 Q32_7 Q32_8  
/SCALE('IRI ED') ALL  
/MODEL=ALPHA  
/STATISTICS=DESCRIPTIVE SCALE  
/SUMMARY=TOTAL MEANS.
```

### REGRESSION

```
/MISSING LISTWISE  
/STATISTICS COEFF OUTS R ANOVA  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT ResilientCoping  
/METHOD=ENTER Adversity  
/SAVE PRED ZPRED RESID ZRESID.
```

### REGRESSION

```
/MISSING LISTWISE  
/STATISTICS COEFF OUTS R ANOVA  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT ResilientCoping  
/METHOD=ENTER Adversity  
/SCATTERPLOT=(*ZRESID ,*ZPRED).
```

### REGRESSION

```
/MISSING LISTWISE  
/STATISTICS COEFF OUTS R ANOVA  
/CRITERIA=PIN(.05) POUT(.10)  
/NOORIGIN  
/DEPENDENT ResilientCoping  
/METHOD=ENTER Adversity  
/SCATTERPLOT=(*ZRESID ,*ZPRED)  
/RESIDUALS NORMPROB(ZRESID).
```

```
EXAMINE VARIABLES=RES_1 ZRE_1  
/PLOT BOXPLOT STEMLEAF NPLOT  
/COMPARE GROUPS  
/STATISTICS DESCRIPTIVES  
/CINTERVAL 95
```

## Adversity, empathy and resilient coping in Syrian refugees

```
/MISSING LISTWISE
/NOTOTAL.

GRAPH
/SCATTERPLOT(BIVAR)=Empathy WITH Adversity
/MISSING=LISTWISE.

GRAPH
/SCATTERPLOT(BIVAR)=ResilientCoping WITH Adversity
/MISSING=LISTWISE.

GRAPH
/SCATTERPLOT(BIVAR)=ResilientCoping WITH Empathy
/MISSING=LISTWISE.

REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT ResilientCoping
/METHOD=ENTER Adversity
/PARTIALPLOT ALL
/SCATTERPLOT=(*ZRESID ,*ZPRED) .

REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT Empathy
/METHOD=ENTER Adversity
/PARTIALPLOT ALL
/SCATTERPLOT=(*ZRESID ,*ZPRED) .

CORRELATIONS
/VARIABLES=Adversity ResilientCoping Empathy
/PRINT=TWOTAIL NOSIG
/STATISTICS DESCRIPTIVES
/MISSING=PAIRWISE.
```

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.3 \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D. [www.afhayes.com](http://www.afhayes.com)  
Documentation available in Hayes (2018). [www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)

\*\*\*\*\*

```
Model : 4
Y : Resilien
X : Adversit
```

## Adversity, empathy and resilient coping in Syrian refugees

M : Empathy

Sample  
Size: 36

\*\*\*\*\*

OUTCOME VARIABLE:

Empathy

Model Summary

	R	R-sq	MSE	F	df1	df2
p	,0615	,0038	15,2950	,1289	1,0000	34,0000
	,7218					

Model

	coeff	se	t	p	LLCI	ULCI
constant	18,4538	1,4223	12,9747	,0000	15,5633	21,3444
Adversit	-,0299	,0832	-,3590	,7218	-,1990	,1392

Standardized coefficients

	coeff
Adversit	-,0615

\*\*\*\*\*

OUTCOME VARIABLE:

Resilien

Model Summary

	R	R-sq	MSE	F	df1	df2
p	,2755	,0759	5,4949	1,3548	2,0000	33,0000
	,2720					

Model

	coeff	se	t	p	LLCI	ULCI
constant	15,9959	2,0797	7,6914	,0000	11,7646	20,2271
Adversit	,0643	,0500	1,2865	,2072	-,0374	,1659
Empathy	-,0972	,1028	-,9459	,3511	-,3064	,1119

Standardized coefficients

	coeff
Adversit	,2157
Empathy	-,1586

\*\*\*\*\* TOTAL EFFECT MODEL \*\*\*\*\*

OUTCOME VARIABLE:

Resilien

Model Summary

	R	R-sq	MSE	F	df1	df2
p	,2254	,0508	5,4779	1,8205	1,0000	34,0000
	,1862					

Model

	coeff	se	t	p	LLCI	ULCI
constant	14,2015	,8512	16,6843	,0000	12,4716	15,9313
Adversit	,0672	,0498	1,3493	,1862	-,0340	,1684

Standardized coefficients

## Adversity, empathy and resilient coping in Syrian refugees

```

                coeff
Adversit      ,2254

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y *****

Total effect of X on Y
      Effect          se          t          p          LLCI          ULCI
c_ps      c_cs
,0284      ,0672      ,0498      1,3493      ,1862      -,0340      ,1684
,0284      ,2254

Direct effect of X on Y
      Effect          se          t          p          LLCI          ULCI
c'_ps      c'_cs
,0271      ,0643      ,0500      1,2865      ,2072      -,0374      ,1659
,0271      ,2157

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
Empathy      ,0029      ,0119      -,0158      ,0368

Partially standardized indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
Empathy      ,0012      ,0049      -,0066      ,0148

Completely standardized indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
Empathy      ,0097      ,0360      -,0469      ,1073

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  1000

NOTE: Variables names longer than eight characters can produce incorrect
output.
      Shorter variable names are recommended.

----- END MATRIX -----

```