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Investigating the Influence of Extraversion and Neuroticism on Social Support and the Resulting Growth after Daily Negative Events

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Abstract

Stress-related growth describes personal development after stressful situations. It can be achieved through different factors, among which one is the use of social support. How much the individual makes use of social support can be influenced by their personality. This study investigates the relationship between social support and daily stress-related growth, as well as the influence of the personality traits of extraversion and neuroticism on social support. Students (N=30), including 22 females and 8 males aged between 18 and 26 (M= 22.57; SD= 2.25), were filling out questionnaires in an app for seven days in a row that measured their use of social support, as well as their stress-related growth per day. At the end, they filled out a personality-questionnaire, which allowed the researcher to calculate their extraversion- and neuroticism-scores. The hypotheses were that social support influences stress-related growth, and that extraversion is positively associated with social support, while neuroticism is negatively associated with social support. Additionally, it was hypothesized that social support mediates the relationship between the personality traits and stress-related growth. A linear mixed model was applied which showed that social support was positively related to stress-related growth. However, extraversion and neuroticism were not significantly related to social support. A mediation effect could be proved by a mediation analysis neither. Nevertheless, even though the current study had some insignificant results, further research is needed, as daily stress is common among people and predictors for stress-related growth are therefore a topic worth continuing to examine.

Keywords: daily stress, stress-related growth, social support, extraversion, neuroticism

Introduction

Stress is common in individuals. Human beings face various difficulties throughout their lives, for which their stress-response allows them to react. Stress is a state of uncomfortable physiological as well as emotional arousal following circumstances perceived as harmful to the wellbeing of the person (Bauduin, 2022; Baqutayan, 2011). A study by Salari et al. (2020) examined stress during the coronavirus pandemic in 2019. The prevalence rate of stress among 9074 participants was 29.6% (Salari et al., 2020). Moreover, research has shown that university students have a significant prevalence of stress-related symptoms. 27% of students reported experiencing moderate to severe levels of stress (Bayram & Bilgel, 2008).

The negative consequences of stress are well examined but stress can have positive consequences as well (Bauduin, 2022; Tedeschi & Calhoun, 1996). Even after severe traumatic situations, some people are able to use those situations as an impulse for a good development or an opportunity to reevaluate their goals or forge close relationships with their social environment (Tedeschi & Calhoun, 1996; Frazier & Kaler, 2006; LoSavio et al, 2011). Positive consequences from stress can be described as growth. A lot of literature is covering growth resulting from severe, traumatic events, which is referred to as posttraumatic growth. However, there is a gap of research about growth after daily negative events (Tedeschi et al., 1998; Linley & Joseph, 2004; LoSavio et al, 2011). Daily stress includes situations like arguments with family or friends, receiving bad news, or job-related stressors. Even though those problems do not seem that severe, they are influencing the well-being of individuals (LoSavio et al, 2011; Chui et al., 2012; Almeida, 2005). This paper will examine the stress-related growth in response to daily stressors. Research suggests that social support and personality traits are important factors for stress-related growth, because they can determine the dimension of growth in relation to stress (Park et al., 1996). It was found that people with high levels of extraversion and low levels of neuroticism report feeling more socially supported (Swickert et al, 2010). Therefore, in the current research it will be examined whether personality and social support influence stress-related growth.

Stress-Related Growth

Positive development that occurs as a result of stressful situations in life can be referred to as stress-related growth (SRG). SRG means that a stressful event leads to good changes in life, thus, SRG causes positive outcomes of stress (Park et al., 1996; Park & Fenster, 2004). Those positive stress-related outcomes can be, among others, the creation of new coping mechanisms, the encouragement of broader viewpoints, or an improvement of social support

networks (Li et al., 2021; Park et al., 1996). What can be regarded as a more severe form of stress-related growth is posttraumatic growth (PTG). It describes a positive development after extreme, traumatic events. The five domains of posttraumatic growth are 'personal strength', 'appreciation of life', 'relating to others', 'new possibilities', as well as 'spiritual change' (Brix et al., 2013; Tedeschi & Calhoun, 1996). However, those dimensions are not related to growth after daily events.

There are different processes that determine whether stress leads to negative consequences or to stress-related growth. People lose their conceptual framework when a significant traumatic experience substantially questions their assumptions about the functioning of the world and their place within it (Cann et al., 2011; Janoff-Bulman, 2014). The reflection on this loss or challenge of beliefs can lead to serious consequences as distress or psychopathology (Roepke & Seligman, 2015; Joseph & Linley, 2005). However, individuals can also experience growth through this disruption of beliefs, namely, through a process of gaining understanding about the stressful event and reconstructing their worldviews. Working on a confrontation of the questioned beliefs can be helpful for a restoration or a revision of those views and enable to understand and appreciate the personal challenges of the severe experience (Cann et al., 2011; Janoff-Bulman, 2014). Factors determining whether the individual is able to experience this process of stress-related growth are, among others, the severity of the stressful event, positive reinterpretation, coping, and social support (Park et al., 1996; Cann et al., 2011; Joseph & Linley, 2005).

The process of growth through the disruption of beliefs is related to posttraumatic growth. However, even stressful occurrences that do not fulfil the criteria to be regarded as trauma might cause a disturbance of some fundamental beliefs and subsequently be linked to growth (Cann et al., 2010). Thus, the processes of growth could be similar for posttraumatic and daily stress-related growth and in both cases they could be related to social support.

Social Support

Social support can be defined as the "functions performed for the individual by significant others, such as family members, friends, and coworkers" (Thoits, 1995, p.64). It is the help from people that a human being can realize, accept, or feel (Wang et al., 2014). There are different supportive behaviour types that can be regarded as potential sources of social support, among others, emotional support (offering love, empathy, or trust), and instrumental support (giving money, time, or labor) (Cooke et al., 1988; House et al., 1988; Thoits, 1995).

Social support is an important factor in dealing with stress. Research argues that the detrimental emotional effects of stressful situations are lessened by social support (Cohen &

Wills, 1985; Siegel & Schrimshaw, 2000; Baqutayan, 2011). Social support is known for enhancing the well-being of an individual and it can be a helpful resource in situations of stress (Shumaker & Brownell, 1984). It helps in coping with stress because a strong social support system enables individuals to develop self-worth and self-efficacy more quickly, preventing the emergence of negative feelings like depression (Wang et al., 2014). Social support can operate against stress like a buffer, in promoting more efficient coping. Additionally, it can help the individual develop problem-solving skills, downplay the severity of the issue, and therefore reducing the harmful consequences of stress (Cohen & Wills, 1985; Wang et al., 2014). Thus, other people can provide the resources needed in a circumstance which might change its potential for harm, reducing the likelihood that a scenario will be labelled as very stressful (Shumaker & Brownell, 1984; Baqutayan, 2011).

A study conducted by Baqutayan (2011) focused on investigating the importance of social support in coping with stress among students. Results showed that participants experienced a higher stress level with fewer social support, which is why the author concluded that social support could serve as an effective coping mechanism (Baqutayan, 2011; Siegel & Schrimshaw, 2000; Raposa, et al., 2016).

Moreover, when the individual is experiencing a disruption or challenge of beliefs, social support is a vital factor in determining if this challenge is leading to harmful consequences or to stress-related growth. If the social environment supports individual needs like relatedness or autonomy, the appraisal process of the threatening event can be supported, resulting in growth. However, if the environment does not support those needs, the individual will tend toward experiencing negative consequences of stress (Ryan, 1995; Cann et al., 2011; Joseph & Linley, 2005). Therefore, social support could be a helpful source for achieving growth after stressful events. Personality might influence how much social support someone receives.

Extraversion

The "Big Five" or five-factor model (FFM) of personality can be used to classify practically all personality measurements (Goldberg, 1990; Judge et al, 1999). According to the model, the five fundamental personality traits of "neuroticism, openness to experiences, extraversion, agreeableness, and conscientiousness" are what best describe the majority of personality traits (Roccas et al, 2002).

Extraversion focuses on the external world and the social environment. The orientation of extraverts is more towards doing than thinking. Others view them as social, lively, and outgoing (Watson & Clark, 1997). According to McAdams (1992), the personality trait includes

the more specialized attribute of "sociability," which includes "friendliness," as well. Extraversion contains qualities such as gregariousness, assertiveness, warmth, as well as excitement seeking (Costa & McCrae, 1992; Widiger & Trull, 1997; McCann, 2018). There are two main sub-factors that make up extraversion. First, extraversion entails successful adjustment through fulfilling social relationships. Second, it involves adjusting through domination, accomplishment, and mastery. Moreover, there are six facets that are involved in models of extraversion, namely "venturesome, affiliation, positive affectivity, energy, ascendance, and ambition" (Watson & Clark, 1997; Lucas et al, 2000).

Literature indicates that social support is a common coping behaviour for extraverts in stressful situations. An experiment conducted by Amirkhan et al. (1995) discovered a substantial positive link between extraversion and asking for help (Swickert et al., 2002). Due to the fact that extraversion can be explained with character traits like sociability and gregariousness (McAdams, 1992; Costa & McCrae, 1992; Widiger & Trull, 1997; McCann, 2018) and that it entails successful adjustment through social relationships (Watson & Clark, 1997; Lucas et al, 2000) it can be assumed that a high score in extraversion relates positively to social support, and therefore to stress-related growth as well.

Neuroticism

The personality trait of neuroticism refers to a persistent propensity to feel bad emotions on a regular basis. Individuals with high neuroticism tend to experience anxiety, depression, or feelings of guilt or anger. They react destructively to stress from the environment and tend to perceive everyday situations and frustrations as overwhelming and threatening. Often people who have high scores on neuroticism are both shy and self-conscious. They may find it difficult to control their impulses when they get upset. Irritability, tension, as well as insecurity, are also associated with neuroticism (Widiger, 2009; Antonioni, 1998). Moreover, characteristic for this personality trait are vulnerability and angry hostility, as well as the tendency to be "moody, discontented, insecure, emotional, unstable, envious, guilt-ridden, nervous, and tense" (McCann, 2018).

Literature suggests a relationship between neuroticism and social support (Udovičić, 2014; Swickert et al, 2010). Neurotic people seem to be less likely to perceive or use social support than extraverted people (Lopes et al., 2003; Pierce et al., 2013; DeLongis & Holtzman, 2005; Udovičić, 2014; Swickert et al, 2010; Reevy & Maslach, 2001). As a study by Swickert et al. (2010) showed, people scoring high on the character trait of neuroticism perceived less accessibility of social support than participants scoring high in extraversion. This could be an

indication that people high in neuroticism are also less likely to resort to this social support, since they do not have the basis for it - the perception.

A study conducted by Gunthert et al. (1999) investigated the reaction of college students to stressful experiences showed that neurotic participants had more sources of interpersonal stress and resorted to less-adaptive strategies of coping as hostile reactions. As people high in neuroticism were described as shy, anxious, and destructive in coping, it can be assumed that those human beings do not use social support that much in dealing with stressors.

Moreover, research revealed that humans with high levels of neuroticism tended to experience relationship dissatisfaction which was related to less perceived social support (Lopes et al., 2003). Therefore, it can be assumed that neuroticism is negatively associated with social support and therefore with less stress-related growth as well.

The Current Research

The aim of this research is to examine how the personality traits extraversion and neuroticism influence the use of social support in response to negative daily events and whether that leads to stress-related growth. The following hypotheses have been formulated:

H1: Social support is positively associated with stress-related growth.

*H2: Extraversion is positively associated with social support.*

H3: Neuroticism is negatively associated with social support.

H4: Social support mediates the association between extraversion and stress-related growth.

H5: Social support mediates the association between neuroticism and stress-related growth.

Figure 1.

Theoretical model explaining the hypotheses
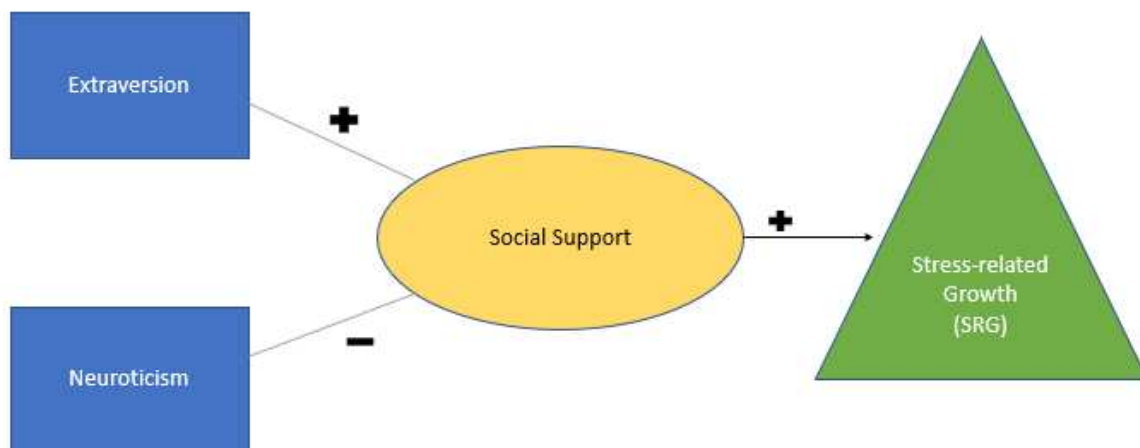
Methods

Design

To test the hypotheses, a quantitative diary-study examining daily stress-related growth was conducted. For seven days, questionnaires were conducted twice a day. Sleep was measured every morning but was not part of this study. Social support and stress-related growth were measured once a day in the evening. Moreover, there was a trait measure of neuroticism and extraversion at the end of the week. The study was part of a larger study with other researchers. Only relevant variables are described below.

Participants

For this study, individuals were recruited over the period of two weeks using convenience sampling and voluntary response sampling. The participants could register through the University of Twente's Sona system, or, if they were not students there, through social media. Through the Sona system, the students received credits for participating in the study. The social media platforms Instagram (Instagram, n.d.) and WhatsApp (WhatsApp, n.d.) were primarily employed in this study. The researchers personally contacted the convenience sample participants via social media to invite them to take part in the study. For attending, they had to be students over 18, literate in both reading and writing English. Before starting, the individuals were asked to fill out the informed consent form. Invalid data contained the data that was not in line with the inclusion criteria as well as data from participants who did not fill out the everyday-questionnaire plus the personality-questionnaire at the end. There were 68

participants who participated, but after invalid data was removed from the dataset, there were 30 individuals left.

The sample (*N*=30) included 22 females (73,33%), and 8 males (26,67%). The participants' ages ranged from 18 to 26 (M= 22.57; SD= 2.25). The majority of the participants were European citizens, with a split between 73,33% participants from Germany (n=22) and 20% from the Netherlands (n=6) One student from Russia (3,33%), and one student from America (3,33%) participated as well. 36,67% of the participants pursued studies in the field of psychology (n=11), followed by 10% in communication science (n=3) and 6,67% in educational science (n=2) in that order.

Materials

TIIM. The abbreviation stands for "Twente Intervention and Interaction Machine". It is an application from the BMS-lab of the University of Twente, and it is designed to gather data about the participants through their smartphones (The BMS Lab, 2023). In this way, it allows the participants to complete a study in an easy and practical way. In this study, the app was used to display the questionnaires and to notify the students about the daily survey completion for seven consecutive days.

Questionnaires.

Trait measure.

Extraversion and Neuroticism. To measure the traits of extraversion and neuroticism, the Big Five Inventory (BFI) was used, which is a succinct assessment of the Big Five personality traits. In its original form it contains 44 statements on that participants have to give their opinion on a 5-point Likert Scale from "disagree strongly" to "agree strongly" (John & Srivastava, 1999). The BFI provides reliable and valid data (Alansari, 2016). For this study, 16 items from the subscales of extraversion (e.g. "Is talkative") and neuroticism (e.g. "Is depressed, blue") were used, for which research proved a good internal consistency (Alansari, 2016). In this study, the subscales showed up an excellent internal reliability with a Cronbach's alpha of .91 for extraversion and a good internal reliability for neuroticism (Cronbach's alpha= .87). The subscales of the questionnaire that were used in this study are displayed in Appendix A.

Daily measures.

Social Support. For assessing social support the Brief-COPE questionnaire by Carver (1997) was used. This questionnaire is a condensed version of the COPE scale, which evaluates adult coping mechanisms. There are many psychological scales that measure perceived social support, but this questionnaire was used because it measures the use of social support. In the Brief-COPE, 28 questions are asked on a Likert scale ranging from one to four ("I haven't been

doing this at all" to "I've been doing this a lot") (Krägeloh, 2011). For this study, four items of the subscales using instrumental support (e.g. "I've been getting emotional support from others") and using emotional support (e.g. "I've been getting help and advice from other people") were used, for which research indicated an acceptable internal reliability for Using Emotional Support and a questionable internal reliability for Using Instrumental Support (Yusoff et al., 2010). However, in the current study, those subscales were used together to form the variable 'social support' and showed a Cronbach's alpha of .92, which indicates an excellent internal reliability. The questionnaire is displayed in Appendix B.

Stress-Related Growth. In order to assess stress-related growth, the Stress-Related Growth Scale – Short Form (SRGS-SF) was used. The items gauge how positively people perceive their own growth in regard to resources, social connections, life philosophy, and coping mechanisms after a disruptive incident on a Likert scale from 0= "not at all" to 2= "a great deal" (Oliveira et al., 2021). The used short form contains 15 items (e.g. "I feel freer to make my own decisions") from the original Stress-Related Growth Scale that showed an excellent reliability among students (Öztemel, 2022). The Cronbach's alpha in this study was .90 and therefore proved an excellent internal reliability as well. The scale can be seen in Appendix C.

Procedure

Before the data collection could start, the UT BMS committee had to authorize the study. Following approval, the participant sample and data collection could begin. The 23rd of April to the 1st of May were the scheduled dates for the collecting of data. Via the UT Sona system as well via social media, participants got a brief explanation of the study for informational purposes. Additionally, they received a link to download the application TIIM. Everyone was enrolled at 8am, and then asked for consent as a first question.

On the first day of the study, the participants were given a study information sheet to read about the study's objectives before beginning the questionnaires (Appendix D), along with an informed consent form to accept or deny (Appendix E). If they did not give their consent to take part, the screen showed up the information that they can stop the study and close the application now. After that, the participants were asked to give information about their demographics before starting with the daily questionnaire about social support and growth. Every day, they were asked in the beginning to reflect on their stressful event of that day to answer the following questions in relation to that event. For the daily questionnaires, participants got a notification on their mobile phones at 18.00 and a reminder-notification at 21.00.

In the following six days, the students were asked to fill out two questionnaires per day. In the morning, they received the sleep questionnaire and the notification at 7.00 as well as the reminder at 11.00 and in the evening, they had to fill out the daily questionnaire and got the notification at 18.00 and another one at 21.00. The daily questionnaire (Appendix F) contained 36 items and took approximately 15 minutes.

On the last day of the study, the students were asked to fill out the two daily questionnaires and additionally the trait-measure, which took approximately 10 minutes. At 19.00, the participants got another notification and at 21.00 a reminder notification. Then, the data collection of the week was completed.

Data Analysis Plan

The participants' data was transferred and exported from TIIM using the Microsoft Excel application (Microsoft Excel, 2023) in order to be further analysed in RStudio (RStudio Desktop - Posit, 2023). To prepare the dataset in RStudio, the packages tidyverse, haven, foreign, rio, dplyr, broom, ggpubr, ltm, ggplot2, lmtest, lme4, psych, and mediation were used.

Then, the data had to be checked for completeness and correctness and had to be cleaned according to the inclusion and exclusion criteria. On day six, a technical issue in the TIIM app leaded to an error in displaying the questionnaire for almost all of the participants, thus, on this day there were almost no responses. Therefore, the whole measurement moment was deleted, to prevent mistakes in the following analysis. Next, the descriptive statistics for the study variables were calculated and the types of stressors were analysed.

The only assumption that had to be tested to use a linear mixed model was that the residuals are normally distributed. This was checked through creating a scatterplot. The participants' ID was used as a random factor in the analysis.

To test the hypothesis that social support is positively associated with stress-related growth, a linear mixed model with the independent variable social support and the dependent variable stress-related growth was used. For the hypothesis that extraversion is positively associated with social support, another linear mixed model was used, with extraversion as independent variable, and social support as dependent variable. Another linear mixed model was applied to test the hypothesis that neuroticism is negatively associated with social support, thus, neuroticism was the independent variable, and social support the dependent variable. Additionally, a mediation analysis was performed to check if social support serves as a mediator for the relationship of extraversion and neuroticism with stress-related growth. Therefore, the 'mediation' package was used. The dependent variable was stress-related growth, and it was regressed on social support, extraversion or neuroticism and the random factor ID. Social

support was the mediator variable. The outputs showed the results of the mediation analysis, including the indirect and direct effect, total effect, and p-values, through which it was possible to conclude if social support was a significant mediator.

Results

Task Check

The participants that completed the personality questionnaire filled out all daily measures, except for one person that did not fill out the daily questionnaire on one day (N=30). Thus, there was a response rate of 99,4 % for the daily measures and 100 % for the personality-questionnaire.

Descriptive Statistics

In Table 1, the means and standard deviations of the trait measures are presented.

Table 1.

Means, and standard deviations of the dependent variables

Variables	*M*	*SD*
Extraversion	3.07	.98
Neuroticism	3.32	.85

N= 30

In Table 2, the descriptive statistics for the variables across different days are displayed. The table shows the means as well as the standard deviations for the variables per day.

Table 2.

Descriptive statistics of the variables per day

	Social support		*Growth*	
Day	*M*	*SD*	*M*	*SD*
1	3.13	1.36	0.71	0.47
2	2.81	1.33	0.62	0.42
3	2.78	1.37	0.59	0.42

4	2.84	1.32	0.64	0.44
5	2.70	1.17	0.68	0.48
7	3.09	1.46	0.72	0.51

To get more insight into the stressful experiences of the sample, the types of daily stressors were analysed. Results showed that most of the events had to do with academic pressure or social stressors (Table 7).

Table 7.

Types of daily stressors experienced by number of participants

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 7
Academic pressure	15	11	6	6	9	11
Social stressors	8	6	10	18	12	7
Job related stressors	1	3	2	0	1	2
Financial concerns	2	2	2	1	2	1
Health concerns	1	5	3	4	2	4
Other	3	3	6	1	4	2

Hypothesis testing

A scatterplot showed that the assumption of normality of residuals was met. The outcome of the linear mixed model showed that social support and stress-related growth were positively associated, and the values were statistically significant. Thus, the first hypothesis was accepted (Table 3). It was also shown by the outcome of the linear mixed model that extraversion and social support were positively associated, but this association was not significant (Table 4). Therefore, the second hypothesis was rejected. At last, the outcome of the linear mixed model showed that neuroticism and social support were positively associated, but this was not statistically significant. Thus, the third hypothesis was rejected.

Table 3.

Results of the linear mixed model – social support on growth

	Estimate	Standard error	t-value	p-value
Social Support	0.10	0.02	5.57	*p< .005*

Significance level: 0.05

Table 4.

Results of two linear mixed models – extraversion on social support and neuroticism on social support

	Estimate	Standard error	t-value	p-value
Extraversion	0.17	0.17	0.95	0.342
Neuroticism	0.12	0.20	0.60	0.546

Significance level: 0.05

As the second and third hypotheses were rejected, it can be assumed that the fourth and fifth hypothesis can also be rejected. A mediation analysis was nevertheless conducted to examine if social support mediates the relationship between extraversion and growth. The output showed that the mediation effect was not statistically significant (Table 5). Thus, social support was not a necessary mediator for extraversion's impact on stress-related growth and therefore, the fourth hypothesis was rejected.

Table 5.

Results of the mediation analysis – social support as mediator between extraversion and growth

	Estimate	95% CI Lower	95% CI Upper	p-value
Indirect Effect	0.02	-0.02	0.05	0.33
Direct Effect	-0.06	-0.19	0.07	0.35
Total Effect	-0.04	-0.17	0.09	0.53

Prop.	-0.12	-4.30	3.92	0.74
Mediated				

A second mediation analysis was conducted to investigate whether social support serves as a mediator in the relationship between neuroticism and stress-related growth. The findings revealed that the mediation effect was not significant enough to be considered (Table 6). Therefore, in this study, social support did not significantly act as a mediator between neuroticism and growth, thus, the fifth hypothesis was rejected.

Table 6.

Results of the mediation analysis – social support as mediator between neuroticism and growth

	Estimate	*95% CI Lower*	*95% CI Upper*	*p-value*
Indirect Effect	0.01	-0.03	0.05	0.49
Direct Effect	0.07	-0.07	0.21	0.35
Total Effect	0.08	-0.07	0.23	0.28
Prop.	0.13	-1.38	1.91	0.57
Mediated				

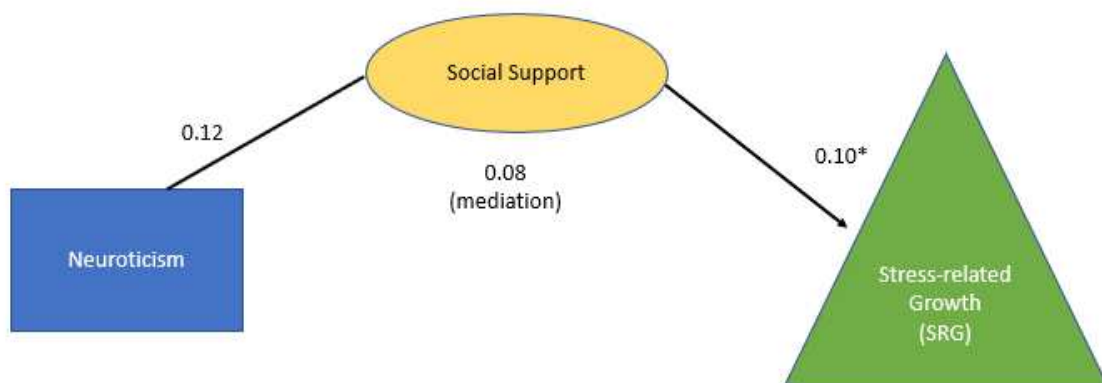In Figure 2, the results of the tested hypotheses are displayed.

Figure 2.

Results of the linear mixed model and the mediation analysis – hypotheses 1, 2, 4
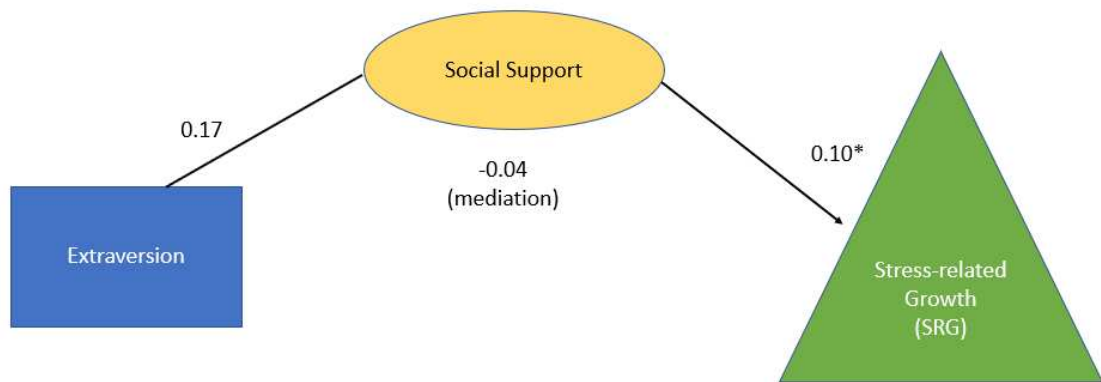
*p<0.05; **p<0.01; ***p<0.001

Figure 3.

Results of the linear mixed model and the mediation analysis – hypotheses 1, 3, 5

*p<0.05; **p<0.01; ***p<0.001

Discussion

The study was aimed at examining how social support and stress-related growth to daily stressors are related, considering the influence of the personality traits extraversion and neuroticism on social support. The first hypothesis, that there is a positive association between social support and stress-related growth, was accepted. Thus, the use of social support leads to daily stress-related growth. This is in line with findings of Park et al. (1996), Cann et al. (2011) and Joseph and Linley (2005) who mentioned social support as one determinant of stress-related growth. The process of growth was explained in the literature in relation to posttraumatic

growth, however, Cann et al. (2011) assumed that an event does not have to be traumatic to bring with it a disruption of beliefs and resulting stress-related growth with help of supportive networks. This was supported by the current study, which also strengthened the study from Baqutayan (2011) in which participants had a higher stress level with less social support. The findings bolster that social support is an effective coping mechanism in dealing with stress among students (Baqutayan, 2011), which also supports the relationship between social support and stress-related growth, as coping is another determinant of SRG (Park et al., 1996). Those results matter because human beings can put effort in learning to seek social support when dealing with stress to achieve a personal development.

The second hypothesis - extraversion is positively associated with social support – was rejected, thus, extraverted people are not more likely to seek social support. Swickert et al. (2010) found out that people high in extraversion were able to perceive more accessibility of social support than those high in neuroticism. However, the current study investigated the actual use of social support and not perceived support. The results suggested that extraverted people did not use social support more than neurotic people, which could indicate that the perception of accessible social support does not necessarily influence the actual social support. Pierce et al. (2013) said that personality influences social support. This result matters insofar as extraversion and neuroticism do not seem to matter that much in the use of social support. Thus, also people low in extraversion are able to seek social support.

The differences between perceived social support and actual social support might also explain why the third hypothesis, that neuroticism is negatively associated with social support was rejected as well. Neurotic people do not appear to be less likely to seek social support. This does not support the influence of personality on social support seeking as well, contrasting to Pierce et al. (2013). Swickert and Owens (2010) proved that humans high in neuroticism tended to perceive relationship dissatisfaction and less social support. However, in this study it was shown that people high in neuroticism did not use less social support. This would also be contrasting to the connection between the personality trait of neuroticism and destructive stress-related coping found by Gunthert et al. (1999), as no negative effect on social support seeking was found, which was proven to be an effective coping strategy for stress (Baqutayan, 2011). Thus, even human beings high in neuroticism are able to seek social support.

As there was no association between extraversion and social support, it could already be assumed that social support would not mediate the relationship between extraversion and stress-related growth (hypothesis 4). The mediation analysis did not show any significant effects. Hypothesis 5 – neuroticism is negatively associated with social support and therefore

with stress-related growth – was rejected as well, thus, both personality traits did not influence the use of social support and stress-related growth significantly. This indicates that also people less extraverted or more neurotic are able to seek social support and experience stress-related growth.

Thus, there could be other important factors that influence the use of social support. For example, personal mastery was already found to be an influencing factor on the level and satisfaction with stress-related social support. According to Pearlin and Schooler (1978), mastery is the degree to which human beings believe that they have control over their life circumstances. Research found that women high in mastery experienced higher instrumental support (Pearlin & Schooler, 1978; Hobfoll et al., 1991). It could also be that social support is influenced by other personality traits from the Big Five model. Moreover, stress could also be an influencing factor on social support. According to Barrera (1986), people who perceive stress at higher levels elicit more social assistance, as high levels of perceived stress are expected to enhance the number of helpful contacts and possibly the size of one's network (Barrera, 1986). Thus, social support could also be the mediator in the association between stress and stress-related growth. The severity of the stressful event could also influence the level of stress-related growth, as this was also proven to be one determinant for SRG (Park et al., 1996). The focus in this study was on daily stressors, thus, it did not include severe events. However, it could be that the perception about the severity of those daily events has an influence on the growth level as well.

Moreover, only instrumental, and emotional support were considered in this study. However, it could be that other types of social support would influence the results as well, namely, informational support, and appraisal support. Informational support describes people giving information or suggestions and appraisal support means offering feedback, self-evaluation, or social comparison. Literature suggests that besides instrumental and emotional support, those supportive behavior types are important sources of social support (Cooke et al., 1988; Thoits, 1995). Including those social support types would lead to a more multifaceted concept of social support, since more types of support would then be assessed through adjusted questionnaires. For example, if participants would receive advice or cope with daily stress through social comparison, this would not be assessed if only using items that measure emotional or instrumental support. Thus, the association between social support and stress-related growth in response to daily stressors could be influenced by measuring informational and appraisal support as well.

Limitations and Suggestions for Future Research

A few points should be taken into account while interpreting the findings, because they could have influenced the results. First, only 30 participants took part in the personality questionnaire at the end of the study, thus, only 44,12% participated in the whole study. The high drop-out rate could have had various reasons, for example that the motivation to fill out questionnaires every day lessened through the week, that some participants did not have time or just forgot to do it. That there were several measurements per participants was a strength in the study. However, the sample size could be improved in further research, as it can be considered rather small (Zamboni, 2019). Added to that, the sample consisted of many more women than men. A study conducted by Felsten (1998). found out that women utilized social support slightly more in coping with stress than men did. Thus, it could be that a sample with equal male and female participants would lead to different results. Moreover, according to Meléndez et al. (2012), as people get older, scores of social support tend to decline. Thus, that only students participated could also have had an influence on the use of social support.

Another limitation about the sample was that all participants were students, and most of them studied in the field of psychology. Therefore, it was a rather homogeneous sample, which could result in a lack of generalizability. Thus, it should be considered to use a more representative sample of a society, with a higher participant number, and with less difference between male and female participants. Additionally, it could be considered to widen the study, and to also ask people who are not studying to participate, as it would also be interesting to investigate the difference of achieved stress-related growth, or the use of social support in different ages.

Moreover, there were technical problems concerning the TIIM application, for example that on day six, the questionnaire was not displayed, which led to missing data. This might have increased the dropout rate. The problems in the TIIM application should be fixed when replicating the study. There should be more time to do the programming in the app, and thus more time to do a pre-study to detect errors before carrying out the study.

Due to the scope of a bachelor thesis, there were a few points to consider that made it more difficult to carry out the study. There were different researchers that worked together to investigate different variables in one big study. To prevent a high drop-out rate, it was decided to search for questionnaires with not many items, because otherwise completing the everyday-questionnaire would have taken a long time. A strength of the questionnaire was that it showed sufficient internal consistency. However, it could still be improved. Only a few items were used per variable, and also only some items of the whole questionnaire were usable for this study. For example, instead of working on one big study with other researchers together, and therefore

having items from other studies in the questionnaire, it could be thought about including items for other personality types of the Big Five as well to investigate their influence. Moreover, there could be a measurement about the severeness of the daily stressful event, to examine if there is an association between how severe the stress was perceived and stress-related growth. If the items of the other researchers would be replaced by those measurements, the questionnaire would still be short enough, and the whole questionnaire could be used for the research. There could also be different results, if there would be more than six days to carry out the study.

Conclusion

This study investigated the effect of using social support on daily stress-related growth, considering the personality types of extraversion and neuroticism. Based on the results that were obtained, it can be said that social support has an influence on stress-related growth. However, an effect of the personality on social support was not proven, and a mediation effect of social support was rejected. Even though in this current study those results were not found to be significant, some perspectives for improving the study were outlined. Further research into the topic of stress-related growth is needed, as a lot of people do experience stress in their daily life. Therefore, it could be helpful to get more information about factors to achieve growth, including social support, but also about other predictors.

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Appendices

Appendix A

Big Five Inventory (BFI)

Please reflect on the following statements. I would describe myself as someone who…

1. Is talkative (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

2. Is depressed, blue (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

3. Is reserved (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly) R

4. Is relaxed, handles stress well (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly) R

5. Is full of energy (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

6. Can be tense (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

7. Generates a lot of enthusiasm (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

8. Worries a lot (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

9. Tends to be quiet (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly) R

10. Is emotionally stable, not easily upset (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly) R

11. Has an assertive personality (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

12. Can be moody (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

13. Is sometimes shy, inhibited (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly) R

14. Remains calm in tense situations (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly) R

15. Is outgoing, sociable (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

16. Gets nervous easily (disagree strongly - disagree a little - neither agree nor disagree - agree a little - agree strongly)

Appendix B

Brief-COPE subscales instrumental & emotional support

Please reflect on the following statements in regards to the stressful event of today.

1. I've been getting emotional support from others. [I haven't been doing this at all / a little bit / a medium amount / I've been doing this a lot]

2. I've been getting help and advice from other people. [I haven't been doing this at all / a little bit / a medium amount / I've been doing this a lot]

3. I've been getting comfort and understanding from someone. [I haven't been doing this at all / a little bit / a medium amount / I've been doing this a lot]

4. I've been trying to get advice or help from other people about what to do. [I haven't been doing this at all / a little bit / a medium amount / I've been doing this a lot]

Appendix C

A Stress-Related Growth Scale – Short Form (SRGS-SF)

Please examine how much the following statements are applicable to you based on your day

0 – Not at all, 1 – A bit, 2 – A lot

Please examine how much the following statements are applicable to you

1. I learned to be nicer to others.

2. I feel freer to make my own decisions.

3. I learned that I have something of value to teach others about life.

4. I learned to be myself and not try to be what others want me to be.

5. I learned to work through problems and not just give up.

6. I learned to find more meaning in life.

7. I learned how to reach out and help others.

8. I learned to be a more confident person.

9. I learned to listen more carefully when others talk to me.

10. I learned to be open to new information and ideas.

11. I learned to communicate more honestly with others.

12. I learned that I wanted to have some impact on the world.

13. I learned that it's OK to ask others for help.

14. I learned to stand up for my personal rights.

15. I learned that there are more people who care about me than I thought.

Appendix D

Information Form

Information Form of the Survey

University of Twente, xx/xx/2023

Welcome.

You have been invited to participate in a BSc Thesis study for Psychology regarding stress-related growth (SRG). This study is conducted by Hanna Ausländer, Evrim Kayikcio, Marlyn Kolenbrander, and Pia Kronenfeld under supervision of Y. Namer (PhD.) and M. Radstaak (PhD.) from the Faculty of Behavioural, Management, and Social Sciences at the University of Twente. This study has been approved for conduction by the Ethics Committee of the Faculty of Behavioural, Management and Social Sciences at the University of Twente.

In this study, you will be filling in a daily questionnaire regarding daily stressful experiences and stress-related growth considering coping mechanisms and personality traits. This daily questionnaire will take around 10 minutes every day to complete. At the end you will also complete a survey for variables that only need to be measured once. This survey will take around 20 to 25 minutes to complete. The data that is gathered will be used and analyzed solely by the researchers mentioned above.

Your participation in this study is entirely voluntary and you are allowed to withdraw at any time during the process. However, in case of withdrawal you will not receive the SONA points as stated on the information section. To the best of our ability your provided answers will remain confidential. Therefore, the provided results and answers will be presented anonymously in the report. Personally-identifiable data will not be stored permanently.

Student and supervisor contact details for further information:

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If you provide your email below, you are interested in the research results and would like to receive these by email.

email

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Appendix E
Informed Consent

This questionnaire is conducted to gain insights into stress-related growth after daily events and the following variables; social support, quality of sleep, core beliefs, level of conscientiousness, neuroticism, and openness, and coping mechanisms. Please make sure you read and understand the following statements.

I am voluntarily filling out this questionnaire and understand that I may withdraw from this participation at any time, without any negative consequences and without providing reasons.

I agree that my answers will be stored and saved, for the purpose of the interview and research.

I understand that the answers will remain anonymous. I understand that the other researchers and their supervisor will be able to see the stored and saved answers.

I understand that my personal information will not be misused or shared beyond the study team.

I understand that data gathered from this study might be used for further research.

I give my consent to participate in the study which involves answering certain questions regarding my experience of stress-related growth in daily settings.

I understand that the daily questionnaire will take approximately 10 minutes.

I understand that the one-time questionnaire will take approximately 20 to 25 minutes.

Yes / No

Appendix F

Daily Questionnaire

Questionnaire Items of the Daily Questionnaire

University of Twente, xx/xx/2023

Please reflect on the most stressful event of the day

Which type of event did you regard as the most stressful event today?

→ Tick the box that best describes your most stressful event today

- Academic pressure (upcoming deadlines/exams, high workload, poor performance)
- Social stressors (argument with someone, let down by friend, family member, partner)
- Job related stressor
- Financial concern
- Health concerns (illness, injury, accident)
- Other (briefly name the event)

Please reflect upon the event about which you are reporting and indicate the extent to which it led you to seriously examine each of the following core beliefs.

1. Because of the event, I seriously examined the degree to which I believe things that happen to people are fair. [1/2/3/4/5/6]

2. Because of the event, I seriously examined the degree to which I believe things that happen to people are controllable. [1/2/3/4/5/6]

3. Because of the event, I seriously examined my assumptions concerning why other people think and behave the way that they do. [1/2/3/4/5/6]

4. Because of the event, I seriously examined my beliefs about my relationships with other people. [1/2/3/4/5/6]

5. Because of the event, I seriously examined my beliefs about my own abilities, strengths and weaknesses. [1/2/3/4/5/6]

6. Because of the event, I seriously examined my beliefs about my expectations for my future. [1/2/3/4/5/6]

7. Because of the event, I seriously examined my beliefs about the meaning of my life. [1/2/3/4/5/6]

8. Because of the event, I seriously examined my spiritual or religious beliefs. [1/2/3/4/5/6]

9. Because of the event, I seriously examined my beliefs about my own value or worth as a person. [1/2/3/4/5/6]

Answer possibilities:

1 - not at all, 6 - to a very degree

Not at all

To a very small degree

To a small degree

To a moderate degree

To a great degree

To a very degree

Controllability

How controllable did you perceive this event? Please respond based on how you have been coping with the particular stressor you indicated today.

(1 not at all controllable 5 completely controllable)

CERQ-Short 18 Questionnaire

please indicate how much the following statements describe how you dealt with your stressor today

How controllable was your stressful event for you?

1:i didn't do this at all 5:i did this a lot (5 Likert scale)

Refocus on planning

 I thought about how to change the situation.

 I thought about a plan of what I can do best in this situation.

Acceptance

I thought that I have to accept that this has happened.

I thought that I have to accept the situation.

Positive reappraisal

 I thought that I can learn something from the situation.

 I thought that I can become a stronger person as a result of what has happened.

Brief-COPE subscales instrumental & emotional support:

Please reflect on the following statements in regard to the stressful event of today.

1. I've been getting emotional support from others. [I haven't been doing this at all / a little bit / a medium amount / I've been doing this a lot]

2. I've been getting help and advice from other people. [I haven't been doing this at all / a little bit / a medium amount / I've been doing this a lot]

3. I've been getting comfort and understanding from someone. [I haven't been doing this at all / a little bit / a medium amount / I've been doing this a lot]

4. I've been trying to get advice or help from other people about what to do. [I haven't been doing this at all / a little bit / a medium amount / I've been doing this a lot]

A Stress-Related Growth Scale – Short Form (SRGS-SF)

Please examine how much the following statements are applicable to you based on your day

0 – Not at all, 1 – A bit, 2 – A lot

Please examine how much the following statements are applicable to you

1. I learned to be nicer to others.

2. I feel freer to make my own decisions.

3. I learned that I have something of value to teach others about life.

4. I learned to be myself and not try to be what others want me to be.

5. I learned to work through problems and not just give up.

6. I learned to find more meaning in life.

7. I learned how to reach out and help others.

8. I learned to be a more confident person.

9. I learned to listen more carefully when others talk to me.

10. I learned to be open to new information and ideas.

11. I learned to communicate more honestly with others.

12. I learned that I wanted to have some impact on the world.

13. I learned that it's OK to ask others for help.

14. I learned to stand up for my personal rights.

15. I learned that there are more people who care about me than I thought.