

**The association between flourishing and anxiety in adolescents**

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### **Abstract**

Anxiety disorders are one of the most common mental disorders among young people in the Netherlands. Previous research showed that young people with a flourishing mental health experience less feelings of anxiety. However, little is known about the nature of this association and the possible roles of other protective factors within this association. The present study examined the association between flourishing and anxiety, and the possible moderating roles of resilience and social support within this association. A sample of 5,587 Dutch adolescents (aged 12-16 years) was used from the national representative study 'Geluk onder druk?' (in English: Happiness under pressure). Results showed that flourishing was negatively associated with anxiety. In addition, this association was moderated by both resilience and social support. The level of resilience did not seem to have a strong effect on the association between flourishing and anxiety, but for adolescents with lower levels of resilience, the negative association between flourishing and anxiety was slightly stronger. With regard to social support, the negative association between flourishing and anxiety was found only for adolescents high in social support. Longitudinal studies are needed to further investigate the direction of the association between flourishing and anxiety.

*Keywords:* anxiety, flourishing, resilience, social support, moderators

### **Samevatting**

Angststoornissen zijn één van de meest voorkomende psychische stoornissen onder jongeren in Nederland. Eerder onderzoek liet zien dat jongeren met een florerende mentale gezondheid minder gevoelens van angst ervaren. Er is echter weinig bekend over de mogelijke rol van andere beschermende factoren binnen deze associatie. Deze studie onderzoekt de associatie tussen floreren en angst en of de factoren veerkracht en sociale steun mogelijke moderatoren zijn binnen deze associatie. Er is gebruik gemaakt van een steekproef van 5587 Nederlandse adolescenten (12-16 jaar) uit het nationaal representatieve onderzoek 'Geluk onder druk?'. De resultaten van dit onderzoek toonden aan dat floreren negatief geassocieerd is met angst. Deze associatie werd gemodereerd door zowel veerkracht als sociale steun. Het niveau van veerkracht leek geen sterk effect te hebben op de associatie tussen floreren en angst. Echter, voor adolescenten met weinig veerkracht was het negatieve verband tussen floreren en angst iets sterker dan voor mensen met veel veerkracht. Voor sociale steun was de associatie tussen floreren en angst sterker bij een hoge mate van sociale steun dan bij een lage mate van sociale steun. Longitudinaal onderzoek is nodig om meer zicht te krijgen op hoe de richtingen van de associaties tussen floreren en angst precies verlopen.

*Steekwoorden:* angst, floreren, veerkracht, sociale steun, moderatoren

### Introduction

Feelings of anxiety or anxiety disorders are one of the most common mental disorders in the Netherlands (de Graaf et al., 2010). Mental health problems in general are increasing with age. Among young adolescents aged 12-17, the percentage of mental health problems is around 5% (Schoemaker et al., 2019). The percentage of people aged 18-24 that experienced any kind of anxiety in their lives is 19.6% (de Graaf et al., 2010). Anxiety is defined as a collective term for an unpleasant mood that goes hand in hand with feeling restless, experiencing sweating or shaking or being panicked and anxious about anxiety, what is called 'fear of fear' (Hovenkamp-Hermelink et al., 2019). In the Netherlands, the mean age at which young people develop an anxiety disorder is around 21 years old (de Lijster et al., 2016). Anxiety among children and adolescents can often result in depressive symptoms (Schotanus-Dijkstra et al., 2017) and young people who have anxiety often have more difficulties in their social and academic functioning which can lead to depression as well (Legerstee et al., 2011). Because of the potential detrimental effects of anxiety for the healthy development of adolescents, the aim of the present study is to investigate possible protective factors of feelings of anxiety among youth.

A possible protective factor that can be of importance in reducing feelings of anxiety is a flourishing mental health (Schotanus-Dijkstra et al., 2016). Flourishing can be described as being satisfied with life, being able to bounce back after difficult or stressful situations, experiencing a sense of fulfillment and feeling that things are going well or even better than expected (Gloria, 2013). A few important features of flourishing are experiencing positive emotions, having feelings of engagement and interest and experiencing meaning and purpose in life (Huppert & So, 2009). During adolescence young people go through a plethora of transitions which can go hand in hand with insecurities and difficulties, such as experiencing feelings of anxiety or depression (Legerstee et al., 2011; Ng et al., 2012). A higher degree of flourishing might be protective for increased feelings of anxiety (Schotanus-Dijkstra et al., 2016). However, the little research that has been done on flourishing and anxiety has been conducted among adults (Schotanus-Dijkstra et al. 2016). To date, it is unknown how flourishing is associated with anxiety among adolescents. Therefore, within the present study, the association between flourishing and feelings of anxiety in adolescents will be examined and possible moderators of this association will be investigated.

The association between flourishing and anxiety could potentially be affected by other factors associated with mental health and well-being. One such factor is resilience. The term 'resilience' can be defined as having a positive adaptation and resilience partly explains how

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a positive mental health status can be preserved even if people experience adversity in their lives (Herrman et al., 2011; Longstaff et al., 2013). According to the research of Hu and colleagues (2014) and Malkoç and Yalçın (2015), resilience is positively associated with a flourishing mental health and negatively associated with mental health problems, such as anxiety. The study of Malkoç and Yalçın (2015) was only among adults and the study of Hu and colleagues (2014) was both among adults and adolescents. However, the association between flourishing and mental health problems was stronger for the adult group than for the group of adolescents and there were less participants in the age category of adolescents than of adults. Smith et al. (2016) stated that young adults with higher levels of resilience reported less negative moods, less anxiety, more positive moods, and more satisfaction with life. This indicates that resilience could affect the relationship between flourishing and anxiety. In this study it will be investigated whether this premise also holds for adolescents, as previous studies mainly focused on the group of adults.

Another factor that can be of importance in the relationship between flourishing and anxiety is social support from parents and peers. Social support includes all the supportive ways in which different people can play a role in the social environment, such as the existence of relations and interconnections among people and the emotional part of social support. The above description of social support refers to what people themselves consider as important in social support (Helgeson, 2003). In adolescence, support from both parents and peers are important protective factors for the mental health of young people (Helsen et al., 2000). Perceived support from the father, mother and the siblings was previously found to be associated with higher levels of life satisfaction (Kleinjan et al., 2020). Social support from family and friends provides meaning to an individual's life and creates a bigger sense of belonging and helps to cope with stressful or anxious events (Malkoç & Yalçın, 2015).

To better understand the relationship between flourishing and anxiety, the following main research question is formulated: *How is flourishing associated with anxiety?* According to the Broaden-and-Build Theory described in the research of Gloria and Steinhardt (2013) individuals who have a more flourishing mental health experience more positive emotions and have an overall higher quality of life, which leads to lower levels of anxiety. This association is illustrated in Figure 1. Based on this, it is hypothesized that *young people who have a more flourishing mental health state will experience less feelings of anxiety.*

To support the main research question by looking at resilience and social support as possible moderators, two sub questions are formulated. The first sub question is: *How does resilience impact the relationship between flourishing and anxiety?* According to the research

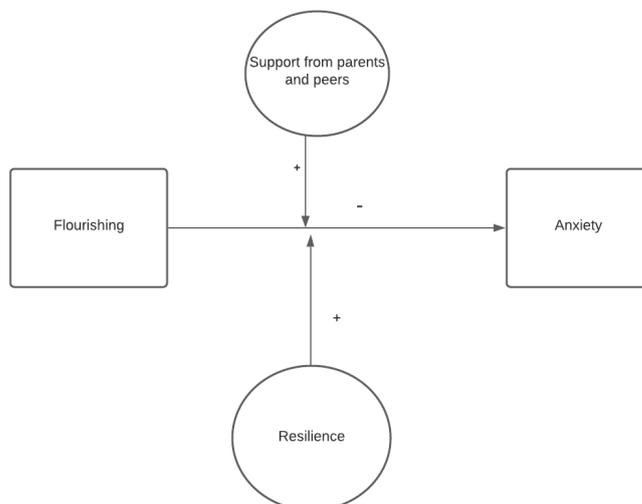
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of Trompeter et al. (2017), individuals who have a flourishing mental health possess higher levels of resilience, which results in lower levels of psychopathology, such as anxiety, stress, or depression. This could be explained by the notion that people who have a flourishing mental health are better able to think positively in situations that can have a negative influence and that they have better coping strategies to deal with difficult situations (Ng et al., 2012). Based on the literature about resilience in relation to flourishing and anxiety, it is hypothesized that *for adolescents who have a higher level of resilience, the negative relationship between flourishing and anxiety will be stronger.*

To obtain more insight into how social support influences the association between flourishing and anxiety, the second sub question is formulated: *How does social support impact the relationship between flourishing and anxiety?* As described above, young people who perceive more social support from their family and friends have a higher life satisfaction and are better able to cope with stressful or anxious events (Malkoç & Yalçın, 2015). Social support can have an effect on the relation between flourishing and anxiety. Based on the literature about social support in relation to flourishing and anxiety, it is hypothesized that *for adolescents who receive more social support from parents and peers, the negative relationship between flourishing and anxiety will be stronger.* The hypothesized relations between flourishing, resilience, social support and anxiety are illustrated in Figure 1.

**Figure 1**

*Research model*



## Methods

### Participants and data

The sample consisted of 5,587 participants in total, of which 51% (N=2,824) were boys and 48.9% (N = 2,704) were girls. The participants' ages ranged from 12 years to 16 years. The mean age of the participants was 13.9. A percentage of 19.5% attended preparatory secondary education (the first category of lower education: basic learning), 28.2% attended the theoretical track of preparatory secondary education, 26.6% attended middle secondary education and 30.8% attended high education (scientific education). A percentage of 74.1% (N=4091) was born in the Netherlands.

### Procedure

The data used is from the national representative Peilstationsonderzoek (in English: Sentinel study), which was part of the larger study 'Geluk onder druk?' (in English: Happiness under pressure) (Kleinjan et al., 2020). This study of the Trimbos Institute was carried out on behalf of UNICEF Netherlands in collaboration with the Alexander foundation and Utrecht University to investigate the mental wellbeing of young people in the Netherlands. Schools were invited to participate in the study between April and September 2019 and data collection was carried out between October and November 2019. Participants filled out a questionnaire about their mental wellbeing in the classroom, under supervision of a research assistant. For the current study, the data of the age group 12-16 years is used, since that age group is nationally representative within the study. Adolescents had an important contribution in this study, which can be characterized as participative youth research. Adolescents provided input with regard to research questions and methods. This meant that in some instances the choice was made not to incorporate all items of validated questionnaires, because scales were considered as too long or items as unclear.

### Measures

#### *Anxiety*

Anxiety was measured by one item "*I have many fears, I am easily scared*" retrieved from the Strengths and Difficulties Questionnaire, which is a validated instrument to measure psychosocial problems among adolescents (Goodman et al., 1998). Answers could be given on a three-item scale consisting of *not true*, *a bit true*, and *very true*.

#### *Flourishing*

Flourishing was measured by twelve items about having a meaningful life, quality of life and happiness and on the basis of the results with a factor analysis a fourth concept of flourishing could be made (Kleinjan et al., 2020). Answers could be given on a three-point

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scale consisting of 1 ('no'), 2 ('a bit') and 3 ('yes'). Examples of statements that belong to flourishing are: "Do you enjoy life?", "I am happy", "Do you feel that your life is meaningful?" and "Do you like to learn new things?". The concept 'flourishing' had a high internal consistency with a Cronbach's alpha of 0.91.

### **Resilience**

Resilience was measured by using 2 statements from the Brief Resilience Questionnaire (Smith et al., 2008): "After a difficult period I mostly recover fast" and "I have difficulties with undergoing stressful situations". Answers could be given on a five-point scale ranging from 'totally not agree' to 'completely agree.' A dichotomous measure with two categories was used for the regression analysis. These items were analyzed separately, since the consistency between the items was low (Cronbach's alpha: 0.30). The item that was included in this study was the first item of resilience: "After a difficult period I mostly recover fast." Conform Kleinjan et al. (2020), this item was recoded into a dichotomous item, where 'agree' and 'completely agree' represented the presence of resilience.

### **Social support**

Social support was measured with five items about having someone you can trust and feeling supported by friends and parents. Examples of items include: "I have someone that I can talk to when I am having a hard time", "My friends support me with what I am doing" and "My parents support me with what I am doing". Answers could be given by a three-point scale consisting of 1 ('not true'), 2 ('a bit true') and 3 ('very true'). Social support also had a high internal consistency with a Cronbach's alpha of 0.86.

### **Data Analysis**

First, the data were checked and cleaned. For all the demographic variables, an average of 0-8 participants could be reported as a missing value. Second, descriptive statistics were obtained for all demographic and model variables. Third, Pearson and Spearman correlations were obtained between model variables. The relationships between the independent variables, the control variables (age, sex, education level and ethnicity) and the dependent variable were examined using a linear regression analysis. In the first step of the regression analysis the control variables were added in the model. In the second step of the analysis, the variable 'flourishing' was added to test the first hypothesis: "young people who have a more flourishing mental health state will experience less feelings of anxiety." To test the potential moderating effects of 'resilience' and 'social support', these variables were added as main effects in the third step. In the fourth step the product terms of these two

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variables with flourishing were added to test interaction effects. The interaction terms were made by multiplying the two centered variables of resilience and social support. Both interaction effects were tested in one run. Significant interaction effects were plotted to interpret the direction of the interaction effect.

### Results

#### Descriptive statistics

The means, standard deviations and percentages of the variables are presented in Table 1. The mean age of the participants was 13.9. A total of 51% (N=2824) were boys. Looking at ethnicity, most participants (N=4091) reported having a Dutch background (74.1%). A total of 19.1% attended a lower education level (preparatory middle-level applied education, profession-oriented learning path), 27.9% attended a low-middle education level (preparatory middle-level applied education, theoretic learning path), 25.7% attended a middle education level (higher general continued education) and 27.3% attended a higher education level (preparatory scientific education). Levels of anxiety seem to be low on average, while levels of flourishing, resilience and social support were relatively high.

**Table 1**

#### *Descriptive statistics*

	N	M	% total
<b>Anxiety (range 1-3)</b>	4080		
	1102	1.32	
	346		
<b>Gender</b>			
Male	2824		51.1
Female	2704		48.9
<b>School level</b>			
VMBO-b/t	1055		19.1
VMBO-t/HAVO	1544		27.9
HAVO/VWO	1421		25.7
VWO	1511		27.3
<b>Age</b>		13.90	
<b>Ethnicity</b>			
Dutch			74.1
Western	4091		7.5

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Non-Western	412		18.4
	1015		
<b>Flourishing</b> <b>(range 1-3)</b>		2.62	
<b>Social support</b> <b>(range 1-3)</b>		2.73	
<b>Resilience</b> <b>(range 1-2)</b>	2214	1.60	
	3312		

*Note:* N = number of respondents, M = mean

### Correlations

Table 2 shows the Pearson and Spearman correlations reported for all variables. The Pearson correlations are reported for continuous variables and Spearman for non-continuous variables. The correlations showed that the predictors flourishing, resilience and social support were relatively highly correlated with anxiety in a negative significant way. The highest correlation that was reported was between social support and flourishing, namely .52. Another high correlation of .40 was reported between resilience and flourishing. For the correlations between the predictors (flourishing, resilience and social support) and the control variables (gender, school level, age and ethnicity), the highest correlations were between flourishing and gender (.10) and social support and school level (.10). The other correlations between the predictors and control variables were positively or negatively small.

**Table 2**

*Pearson and Spearman correlations between all variables*

Variables	1	2	3	4	5	6	7	8
1. Anxiety	1.00							
2. Flourishing	-.25**	1.00						
3. Social support	-.13**	.52***	1.00					
4. Resilience	-.24**	.40***	.24***	1.00				

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5. Gender	.21***	-.10***	.04**	-.22***	1.00			
6. School level	.01	.06***	.10***	.08***	.06***	1.00		
7. Age	.00	-.06***	-.03*	.01	-.02	.03**	1.00	
8. Ethnicity	.04**	-.06***	-.07***	.00	.02	-.12***	-.03*	1.00

*Note:* Pearson correlations are used for continuous variables and Spearman correlations for non-continuous variables. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### Linear Regression analyses

#### The direct association between flourishing and anxiety

A linear regression analysis was conducted to see how flourishing and anxiety were associated, controlled for age, gender, school level and ethnicity. Before conducting the linear regression analysis, the assumptions were checked. First, linearity of the associations between flourishing and anxiety was tested by looking at scatterplots (Field, 2013). Second, a P-P plot (probability-probability) was examined to investigate if the residuals of the outcome variable ‘anxiety’ were normally distributed. And finally, the assumption of homoscedasticity was checked, which means that the variance of the outcome variable ‘anxiety’ is stable at all levels of the predicting variable ‘flourishing’ (Field, 2013). This assumption was checked by examining the scatterplot of standardized residuals and the predicted values. The assumptions of linearity, normality and homoscedasticity were violated. This means that the results of the regression analyses have to be interpreted with caution. Linear regression analyses were conducted in four steps. In the first step the four control variables ‘age’, ‘school level’, ‘gender’ and ‘ethnicity’ were added to the model with ‘anxiety’ as the dependent variable. In the second step the predictor ‘flourishing’ was added to the model. In the third step, the main effects of resilience and social support were included, while in the fourth step the two interaction variables ‘flourishing x resilience’ and ‘flourishing x social support’ were added to the model. The results of the regression analyses are depicted in Table 3. It can be concluded that there is a significant negative relationship between flourishing and anxiety, controlled for gender, age, school level and ethnicity, with an explained variance of  $R^2 = .10$ .

**Table 3**

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### *Summary of regression analysis flourishing predicting anxiety*

	Model	Unstandardized coefficients		Standardized coefficients
		<i>B</i>	<i>SE B</i>	$\beta$
1	Constant	.983	.086	
	Gender	.244	.016	.208***
	School level	-.003	.007	-.005
	Age	.002	.006	.004
	Ethnicity	-.025	.010	-.034*
2	Constant	1.996	.102	
	Gender	.215	.015	.159***
	School level	.005	.007	.018
	Age	-.005	.005	-.007
	Ethnicity	-.035	.010	-.043*
	Flourishing	-.339	.022	-.184***
3	Constant	2.197	.108	
	Gender	.208	.015	.177***
	School level	.004	.007	.019
	Age	-.006	.005	-.011
	Ethnicity	-.035	.010	-.045***
	Flourishing	-.288	.026	-.203***
4	Resilience x flourishing	.124	.044	.044*
	Social support x flourishing	-.222	.028	-.123***

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### ***Regression analysis: the moderating effect of resilience on the relation between flourishing and anxiety***

In the fourth step of the regression analysis the two interaction terms ‘flourishing x resilience’ and ‘flourishing x social support’ were added to the model to see if resilience and social support combined with flourishing had a stronger negative relationship than flourishing on anxiety. As shown in Table 3, both interaction variables were significant.

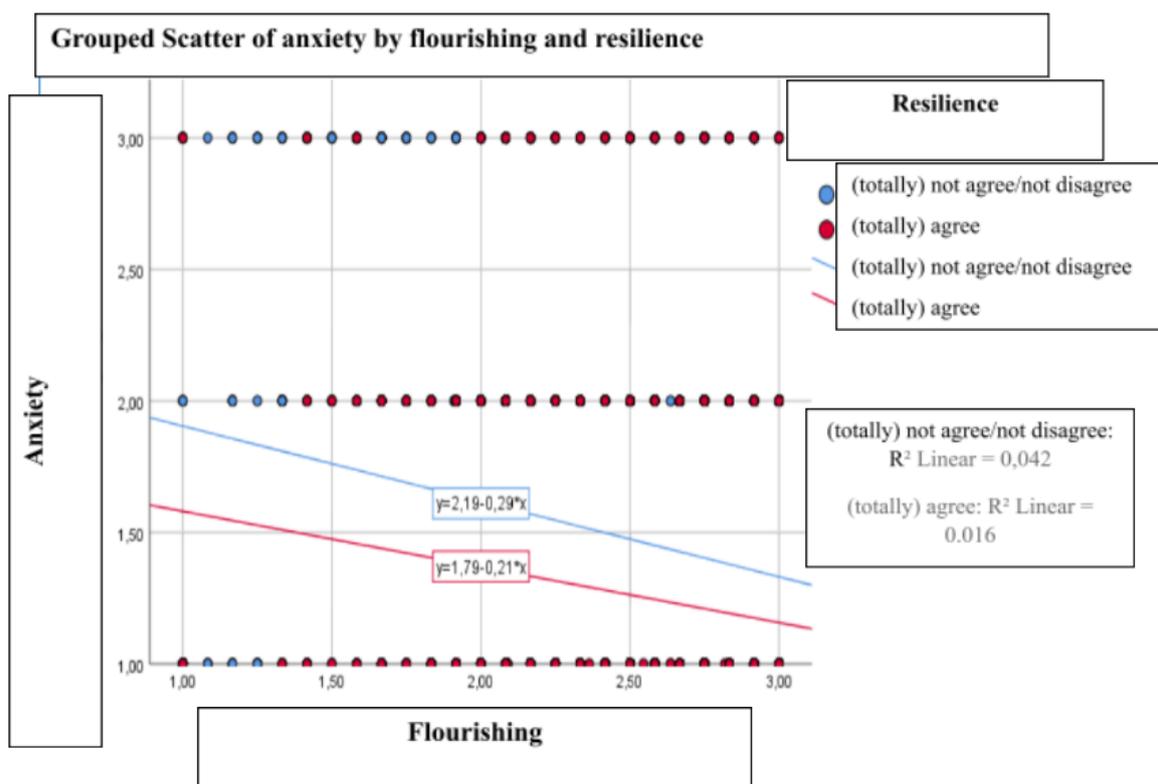
To test if hypothesis 2 could be verified, a scatter plot was made to investigate the nature of the interaction effect between flourishing and resilience. Figure 2 shows the scatter plot of the effect of resilience on the association between flourishing and anxiety. The blue

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line represents low resilience and the red line represents high resilience. The two lines do not run parallel to each other, and the explained variances (0.04 for low resilience and 0.02 for high resilience) do not differ to a large extent. However, for adolescents with lower levels of resilience, the negative association between flourishing and anxiety was slightly stronger.

**Figure 2**

*Scatter plot of the interaction between flourishing x resilience*



### ***Regression analysis: the moderating effect of social support on the relation between flourishing and anxiety***

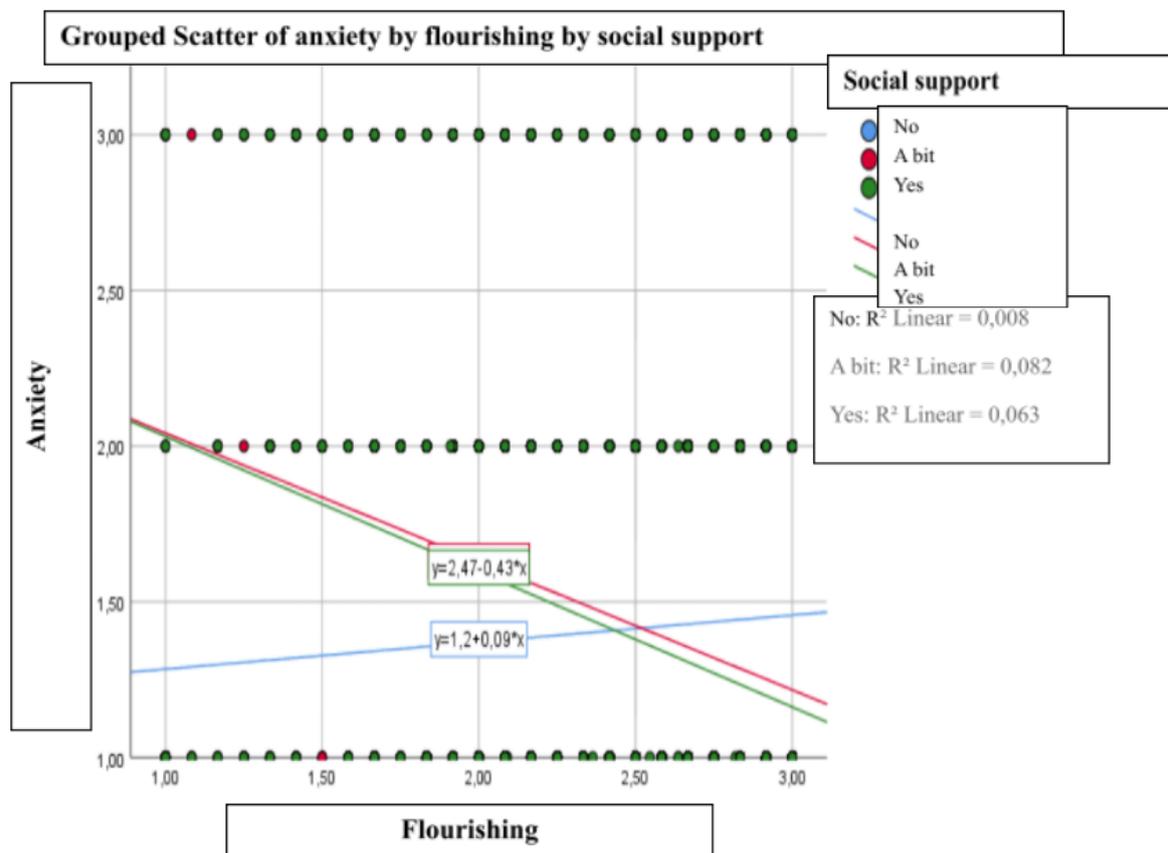
To test if hypothesis 3 could be verified, a second scatter plot was made to investigate the impact of social support on the association between flourishing and anxiety (see Figure 3). The blue line represents low social support from parents and peers and the red line represents high social support from parents and peers. The red line and the blue line were not parallel, but crossed each other, which means there was a difference in the effects of high social support and low social support. The negative association between flourishing and anxiety was found only for adolescents high in social support. The explained variances were

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0.01 for low social support and 0.06 for high social support, which was a somewhat bigger difference than the explained variances for resilience.

**Figure 3**

*Scatter plot of the interaction between flourishing x social support*



## Discussion

The goal of the present study was to examine how flourishing was related to anxiety among adolescents, and whether resilience and social support were possible moderating factors in the relationship between flourishing and anxiety. The results have shown that the association between flourishing and anxiety was negative, which means that the more someone flourishes, the less anxiety a person experiences. This negative association is in line with the study of Schotanus-Dijkstra and colleagues (2016), indicating that a higher degree of flourishing might be protective against feelings of anxiety. The study of Schotanus-Dijkstra and colleagues (2016) was among adults, the present study confirmed the negative association between flourishing and anxiety for the first time among adolescents.

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Furthermore, the results are in line with the Broaden-and-Build Theory from the study of Gloria and Steinhardt (2013) explaining that individuals who have a more flourishing mental health experience more positive emotions and overall have a higher quality of life leading to lower levels of anxiety. The first hypothesis *“young people who have a more flourishing mental health state will experience less feelings of anxiety”* can therefore be confirmed.

Both resilience and social support appeared to be moderators within the association between flourishing and anxiety. The interpretation of the interaction effect showed that for people who are low in resilience, the negative association between flourishing and anxiety is somewhat stronger than for people high in resilience. The effect of resilience on the association between flourishing and anxiety seems to be marginal however. This is not completely in line with previous research by Ng and colleagues (2012), where it was found that a person with higher levels of resilience has a more positive mindset in difficult situations leading to a more flourishing mental health which then leads to less feelings of anxiety. In addition, the research of Trompeter and colleagues (2017) explained that individuals who have a flourishing mental health, possess higher levels of resilience and this results in lower levels of mental problems, such as anxiety. It was found that a flourishing mental health seems to have a small protective effect with regard to anxiety in adolescents with a lower level of resilience. The second hypothesis *‘for adolescents who have a higher level of resilience, the negative relationship between flourishing and anxiety will be stronger’* is therefore not confirmed, both in terms of the direction of the association, as in terms of the strength of the interaction effect. The absence of a strong interaction effect between resilience and flourishing, might be partly explained by the research of Gloria (2013), which described resilience as part of the broader term flourishing and not as a term by itself. The study of (Yildirim & Belen, 2019) confirms the important role of resilience in relation to externality of happiness, feelings of anxiety and flourishing by stating that being able to ‘bounce back’ from stressful situations results in the ability to cope with stress, which then leads to lower levels of fear of happiness and higher levels of flourishing. If flourishing and resilience may in part overlap as constructs, it could be harder to find a strong interaction effect between the two.

The interpretation of the interaction effect between flourishing and social support shows that the negative association between flourishing and anxiety only exists for adolescents with higher levels of social support. The third hypothesis *‘for adolescents who receive more social support from parents and peers, the negative relationship between flourishing and anxiety will be stronger’* is therefore confirmed. For adolescents with low

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levels of social support there seemed to be no or even a slightly positive association between flourishing and anxiety. The results that flourishing is only a protective factor for anxiety in combination with high social support is in line with previous research about social support explaining that young people who perceive more social support from their family and friends have a higher life satisfaction and are better able to cope with difficult or stressful situations (Malkoç & Yalçın, 2015). The finding that in the absence of social support, flourishing is not a protective factor for anxiety, once more indicates that having social support in one's life is essential for mental health and well-being (Yildirim & Belen, 2019; Dubois et al., 2002).

The present study has a few strengths and limitations. A first strength of this study is its large and representative sample of young people in the Netherlands aged 12-16 years old. Second, the aspect of participative youth research in which adolescents co-created the research questions and methods can be considered a strength. A participative study like this is more relevant for young people themselves, because they get more insight into the topics flourishing and anxiety and by directly influencing research young people are also able to influence changes and improvements in the current system (Abma et al., 2019). This study also has limitations. First, the present study is cross-sectional, which means that when looking at risk and protective factors, only statements can be made about associations between variables and not about directions or causality. Second, self-reports are used in which there could be social desirability in answering the questions which can lead to over- or underreport (Kleinjan et al., 2020). Third, anxiety was only measured with one statement ("*I have many fears, I am easily scared*"), which might impact the reliability and validity of the measure. What is known from previous studies is that anxiety is a broad term that often goes hand in hand with feelings of depression (Stockings et al., 2015). Resilience was also measured with one statement ("*After a difficult period I mostly recover fast*") retrieved from the Brief Resilience Scale (Smith et al., 2008), but previous studies have shown that resilience is broader, namely about also having a positive adaptation despite experiencing adversity (Herrman et al., 2011) and being persistent, adaptive and transformable in complex adaptive socio-ecological systems (Folke, 2016).

More longitudinal research is needed to investigate the directions between the variables that are used in the present study and more research is needed into the role of flourishing in anxiety among young adolescents, especially with regard to the potentially important role of social support in this association. Previous studies have mainly focused on (young) adults instead of younger people from 12-18 years old (Schotanus-Dijkstra et al., 2016). Studies among children and adolescents, with stronger research designs might be able

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to shed more light on the dynamic interplay between flourishing, social support and anxiety. A possibility might be to use ecological momentary assessment studies (Shiffman et al., 2008). An ecological momentary assessment study involves the repeated sampling of participants' current behaviors and experiences in their natural environments. It can be used to enable the assessment of day to day fluctuations and temporal relations between the variables flourishing, social support, resilience and anxiety. Also, it is advised to further study how the concepts flourishing and resilience are related and whether these are distinct concepts or indeed partly or mostly overlap.

The current study might also have some practical implications. Considering the roles of flourishing and social support in reducing anxiety, interventions aimed at increasing flourishing and social support might be beneficial in reducing anxiety. An intervention that could be used to increase flourishing is Happyles (Van der Zanden & van der Linden, 2013). Happyles is targeted to young people with symptoms of depression, ranging from 13 to 17 years old from preparatory middle-level applied education in The Hague. It is an online intervention for young people to foster their mental health and to prevent depression. It consists of a classroom discussion lesson and of e-learning lessons in which stimulating and effective exercises are given about the mental resilience of all young people, regardless of their mental state. Next to the exercises, there is also a group course for young people with higher levels of depression and these sessions are guided by a mental health care-prevention worker. The level of depression of a young person is measured by the Happyles-test, which is a questionnaire about wellbeing, depression and about the home-situation. Before and after measurements of the e-learning lessons of Happyles showed significant positive results on the wellbeing of the pupils (Van der Zanden & van der Linden, 2013). An intervention that might help in strengthening social support and that has proven to be effective in reducing anxiety disorders in children and young adolescents is the VRIENDEN (In English: FRIENDS) intervention (Liber et al., 2008; van der Leeden et al., 2011). Young people who participate in this intervention attend ten group or individual lessons. In these lessons they learn how to deal with feelings of anxiety or depression by practicing different skills and techniques. These practices are about three areas that are of influence in developing anxiety or depression: physical reactions, thoughts and learning-, social- and behavior processes. There are also two or four lessons available for parents. According to the World Health Organization (2004), this intervention has also proven to be an effective treatment- and prevention program for children and young adolescents with an anxiety disorder. A

combination of these above mentioned interventions can be helpful in strengthening all of the factors that were investigated in this study among adolescents.

### Conclusion

The results of the present study showed that flourishing was negatively associated with anxiety, and that this association was moderated by resilience and social support. Flourishing, resilience and social support seem to be protective factors with regard to anxiety. More research and insights are needed regarding the term resilience in relation to flourishing and more longitudinal research is needed to examine the directions between flourishing, social support and anxiety in more detail, including studies that enable the investigation of these relations on a day to day basis.

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### **Appendix B: Contract data use (TED)**

Utrecht, 2021

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This letter constitutes formal confirmation of the fact that the data from the Utrecht University ‘Happiness Under Pressure, 2020’ have been made available to Emmi Borsboom of Utrecht University.

These data will not be made available to others, and the data may be used only for analysis and reporting on topics for the thesis, about which agreement has been reached with Marloes Kleinjan. Emmi Borsboom will receive access to the data from the dataset in order to answer the following research questions within the framework of the thesis: Research question: “How is flourishing associated with anxiety?”

The following variables will be used:

Dependent variable: ‘Anxiety’, question number 80

Independent variables: ‘Flourishing’, question number 12, 82 and 85

Other variables: ‘Resilience’, question number 83 and ‘Social Support’, question number 82

No report based on the data from the project entitled ‘The association between flourishing and anxiety in adolescents’ may be made public, unless permission has been obtained in advance from the Project Coordinator for the ‘Happiness under pressure’ project.

After the expiration of this contract, dated 25-06-2021, Emmi Borsboom shall delete the ‘Happiness under pressure’ data.

Dates and signature:

20-01-2021

Emmi Borsboom:

Marloes Kleinjan:

