**Examining psychological problems in adolescents: the associations with flourishing, resilience and social support**

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**Abstract**

*Background:* Compared to ten years ago, the percentage of young people between 12 and 25 years old reporting psychological problems has increased significantly from 7% to 8% (Centraal Bureau voor de Statistiek, 2018). Psychological problems can result in numerous short- and long-term problems. Therefore, it is of importance to examine potential protective factors.

*Aim:* Protective factors associated with psychological problems are amongst other things flourishing, resilience and social support. The present study aims to further examine the associations between these potential prospective factors and psychological problems. In addition, the moderating effect of gender within these associations is assessed.

*Methods:* Data from the national representative Dutch Sentinel Study is used (*N* = 5,398), including adolescents aged 12-16 (*M* = 14.45, *SD* =1.34).

*Results:* Results of the multivariate regression model indicate that flourishing and resilience are both associated with a decrease in psychological problems. Contrary to what was expected, social support was not significantly associated with psychological problems. When taking gender into account, the association between flourising and psychological problems appeared stronger for girls compared to boys.

*Conclusion:* Flourishing and resilience function as protective factors for psychological problems. Further research is needed to confirm and further clarify the stronger association between flourishing and psychological problems, especially for girls.

*Keywords:* flourishing, resilience, social support, psychological problems, gender, moderation

**Samenvatting**

*Achtergrond:* In 10 jaar tijd is het aantal jongeren tussen de 12 en 25 jaar die aangeven last te hebben van psychische problemen significant gestegen van 7% naar 8% (Centraal Bureau voor de Statistiek*,* 2018). Deze ontwikkeling is zorgelijk, omdat psychische problemen kunnen resulteren in verschillende korte en lange termijn problemen onder jongeren. Hierom is het van belang potentiële protectieve factoren te onderzoeken.

*Doel:* Deze studie beoogt de associatie tussen potentiële protectieve factoren en psychische problemen te onderzoeken. Protectieve factoren die geassocieerd worden met psychische problemen zijn onder andere floreren, veerkracht en sociale steun. Bovendien wordt het modererende effect van gender op deze relatie onderzocht.

*Methode:* De data is afkomstig van het landelijk representatieve Nederlandse Peilstationsonderzoek Scholieren (*N* = 5,398). De steekproef bestaat uit adolescenten tussen de 12 en 16 jaar oud (*M* = 14.45, *SD* = 1.34).

*Resultaten:* Floreren en veerkracht zijn beide geassocieerd met het verminderen van psychische problemen. Echter, is dit resultaat niet gevonden voor sociale steun. De relatie tussen floreren en psychische problemen is sterker voor meiden dan voor jongens.

*Conclusie:* Veerkracht en floreren functioneren beide als protectieve factoren voor psychische problemen. Vervolgonderzoek is nodig naar de associatie tussen floreren en psychische problemen, met name naar meiden.

*Kernwoorden:* Floreren, veerkracht, sociale steun, psychische problemen, gender, moderatie

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**Introduction**

In the Netherlands, one in twelve young people between 12-and-25-years old reported psychological problems. Compared to ten years ago, this percentage increased significantly from 7% to 8% (Centraal Bureau voor de Statistiek, 2018). Research showed that an increase in psychological problems among youth can be considered problematic, as adolescence is a critical and transitional developmental period in human beings (Brown et al., 2019; Wambua et al., 2018). Psychological problems during adolescence can comprise adolescents' development and future potential (Brown et al., 2019; Wambua et al., 2018). In the short-term, psychological problems might result in lower productivity and lower educational achievement, or risky behavior concerning one’s health like substance use (Brown et al., 2019; Dray et al., 2015). Long-term negative consequences are the increased risk of development of psychological disorders in adulthood like personality disorders (Van Droogenbroeck et al., 2018), but also suicide attempts or mortality (Brown et al., 2019; Tiller, 2013). Because of these detrimental consequences, it is important to intervene and prevent psychological problems early in life. The present study, therefore, aims to examine potential protective factors of psychological problems, namely flourishing, resilience, and social support

**Theoretical substantiation and review of empirical studies**

Psychological problems, sometimes also referred to as emotional or internalizing problems, can be defined as experiencing feelings of anxiety, stress, and/or depression (Van Droogenbroeck et al., 2018). In the remainder of this report, there will be referred to psychological problems. Van Droogenbroeck et al. (2018) stated that psychological problems result from a dynamic and complex interplay between individual attributes and behaviors, social and economic circumstances, and wider socio-cultural environmental factors. Therefore, in explaining psychological problems and in the search for protective factors hereof, both individual and environmental factors should be considered.

Various factors are negatively associated with psychological problems, among other things: flourishing (VanderWeele, 2017), resilience (Schoemaker et al., 2019), and social support (Rueger et al., 2016). To this researcher's knowledge, the independent association between psychological problems and these three factors in adolescents has not yet been studied.

The influence of these three factors can be explained on different levels by the process-person-context-time-model (PPCT-model) by Bronfenbrenner and Morris (1998). This bioecological model is a conceptual framework to understand human development within their contextual environment while including their individual and personal characteristics (Bronfenbrenner & Morris, 1998). According to the PPCT-model, individual development emerges from bidirectional influences between individual characteristics and the objects, symbols, and persons in one's immediate environment. These bidirectional influences are called proximal processes. Bronfenbrenner and Morris (1998) discussed three types of individual characteristics namely: Resource, demand, and force. Resource characteristics are an individual's experiential, biological, or mental resources like education. Demand characteristics include visible factors that evoke reactions from the social environment like gender. Force characteristics are dynamic personality traits that either foster or sustain proximal processes but could also interfere with or prevent their occurrence like self-efficacy. The proximal processes between individual characteristics and one's immediate environment occur in a certain context and over an extended period of time (Bronfenbrenner & Morris, 1998). Below the potential protective factors of psychological problems will be further introduced and linked to the PPCT-model.

**Review of empirical studies**

Flourishing is one potential protective factor for psychological problems in adolescents (VanderWeele, 2017; Schotanus-Dijkstra et al., 2016; Schotanus-Dijkstra et al., 2017). Flourishing has mostly been studied among adults and little research on the concept of flourishing has been conducted among adolescents (Schotanus-Dijkstra et al., 2016). Flourishing can be defined as both hedonic and eudaimonic well-being. Hedonic well-being comprises feelings of happiness, life satisfaction, and being virtuous. Eudaimonic well-being includes psychological well-being, e.g. having feelings of meaning and purpose, and social well-being, e.g. having fulfilling social relationships (VanderWeele, 2017; Schotanus-Dijkstra et al., 2016; Schotanus-Dijkstra et al., 2017). Taking the PPCT-model into account, flourishing can be attributed to an individual's personal force characteristics that can either preserve, interfere or prevent the occurrence of proximal processes on the personal level (Bronfenbrenner & Morris, 1998).

Another protective factor for psychological problems in adolescents is resilience (Schoemaker et al., 2019; Wille et al., 2008). Research showed that psychological resilience is associated with lower levels of psychological problems such as depression and anxiety in adolescents (Chung et al., 2020; Hjemdal et al., 2011). Resilience can be defined as the possibility of adjusting to, and coping with various stressors like stress, adversity, difficulties, and setbacks (Hjemdal et al., 2011; Schoemaker et al., 2019; Schultze-Lutter et al., 2016). It is a combination of emotional, cognitive, and social skills which enable individuals to lead a meaningful and productive life where they can successfully fulfill multiple social roles and functions during the different stages (Schoemaker et al., 2019; Schultze-Lutter et al., 2016). When taking the PPCT-model into account, resilience can be considered a personal force characteristic trait as well (Bronfenbrenner & Morris, 1998).

Social support is another protective factor against psychological problems in adolescents (Bi et al., 2021; Rueger et al., 2016), young adults (Guntzviller et al., 2020), and adults (Jacobson et al., 2017). Social support refers to the instrumental, informational, and emotional assistance received from others (Bukhari & Afzal, 2017; Gariepy et al., 2016). Perceived social support mediates symptoms of anxiety and depression. It acts as a buffer for stress and tension through feelings of support and the fulfillment of emotional needs (Bukhari & Afzal, 2017). This develops a sense of being understood, loved, and cared for (Roohafza et al., 2014). When taking the PPCT-model into account, social support is considered a proximal process or interaction for it encompasses close, interpersonal relationships between an individual and the persons in their environment (Bronfenbrenner & Morris, 1998). Based on these findings, it is hypothesized that flourishing, resilience, and social support are all negatively associated with psychological problems.

It is important to mention that adolescents are not a homogenous group regarding psychological problems and protective factors hereof. According to Afifi (2007) and Boson et al. (2016) gender differences in psychological problems exist consistently. Therefore, it is necessary to be sensitive to them. Research shows that the female gender, compared to the male gender, is a risk factor for psychological problems (Booker et al., 2018; Boson et al., 2016; Duinhof et al., 2015; Schoemaker et al., 2019). When studying protective factors for effective prevention strategies, one cannot be gender-neutral while psychological problems are gender-specific (Afifi, 2007; van Droogenbroeck et al., 2018).

Additionally, gender differences are present for the three potential protective factors as well, although multiple inconsistencies were found. Firstly, according to Schotanus-Dijkstra and colleagues (2016), the female gender is significantly related to higher flourishing. However, this is in contrast with the studies of Keyes (2002) and Keyes and Simoes (2012) who stated that the male gender was significantly associated with higher flourishing. Secondly, a recent study showed that girls scored significantly higher on resilience than boys as well (Yoon et al., 2022). However, the various studies by Moksnes and Lazarewicz (2019), Simón-Saiz et al. (2018), and Zhang et al. (2018) found the opposite results. Last, some studies found social support to be a protective factor for depressive symptoms (Ferreiro et al., 2012) and anxiety (Goodman et al., 1998) in boys only. However, various studies found that girls score higher on social support than boys (Bezek, 2010; Sun & Stewart, 2007) and that social support is a greater buffer for psychological problems among girls (Gariepy et al., 2016; Zhang et al., 2018).

The present study will therefore examine whether the associations between psychological problems and potential protective factors such as flourishing, resilience and social support, differ between male and female adolescents. Despite the abovementioned inconsistencies in research, there seems to be more evidence found for the following expected gender differences in the current study. It is hypothesized that boys score higher on flourishing and resilience and that girls score higher on social support.

**The gaps and the current study**

To summarize, the independent associations between flourishing, resilience, social support and psychological problems are understudied, specifically among adolescents. Especially research regarding flourishing in relation to psychological problems has mostly been carried out among adults. It is important to also focus on adolescents, seeing the prevalence and incidental risks of psychological problems within this group. Additionally, inconsistent results have been found regarding the moderating effect of gender within the associations between protective factors and psychological problems.

Therefore, this study aimed to research how the potential protective factors of flourishing, resilience, and social support were associated with psychological problems among adolescents. In addition, possible gender differences between the protective factors and psychological problems were assessed (Figure 1).

Based on the literature discussed above, it is hypothesized that flourishing, resilience, and social support are all negatively associated with psychological problems. In addition, it is expected that the associations of flourishing and resilience on psychological problems are stronger for boys while the association of social support on psychological problems is stronger for girls.

**Figure 1**

*The association between flourishing, resilience, social support and psychological problems in adolescents, and how these relations differ between boys and girls*



**Methods**

**Sample characteristics**

This study was based on data from the national representative Dutch Sentinel Study [in Dutch: Peilstationsonderzoek Scholieren]. The original sample of the study consisted of 5,532 participants and was randomly collected from 110 secondary schools in the Netherlands. Both boys (51.2%) and girls (48.8%) in the age range between 10-18 years old (*M* = 14.40, *SD* = 1.38) were included. In this study, only respondents of 12-16 years old were researched. Respondents who were not between the age range of 12-16 years old were excluded from the data as well as participants with unusual or missing values and outliers. A total of 5,398 participants remained.

**Procedure**

When selecting participating high schools, a cluster sampling method was applied. The sampling list was provided by The Education Executive Agency of the Dutch Ministry of Education, Culture and Science (in Dutch: Dienst Uitvoering Onderwijs) in coordination with the municipal health services. The questionnaires were administered during class under the supervision of a trained research assistant from the Trimbos-Institute. Parents were given the opportunity to give passive informed consent prior to the questionnaires. They received an informational letter about the research and the planned participation of their child. The Dutch Sentinel Study was approved by the Ethical Committee of the Trimbos Institute (registration number: #52-1906). This thesis was approved by the Ethics Review Board of the Faculty of Social & Behavioral Sciences (FETC21-2337).

**Measuring instruments**

***Demographic variables***

Demographic variables included education level, age and gender. The education level was of ordinal level and therefore transformed into a dummy variable. Theoretic and profession-oriented learning pathways of preparatory middle-level applied education were classified as “vocational = 0”. Preparatory scientific education and higher general continued education were classified as “pre-academic = 1”. Age is a continuous variable and ranges between 12 and 16. The dichotomous variable gender was also used as a moderator. The available options were “boy = 0” or “girl = 1”.

***Psychological problems***

To measure the dependent variable psychological problems, participants answered five statements concerning psychological problems in the Strength and Difficulties Questionnaire (SDQ), where adolescents reported their behavior and feelings of the past six months (Goodman et al., 1998). Examples of items were: ‘I often feel unhappy, blue, or in tears’, ‘I worry a lot', and ‘I am afraid of a lot of things, I am easily anxious’. Participants could answer on a three-point scale; *not true, a little true*, or *true*. The Cronbach’s Alpha was .717.

***Flourishing***

‘Flourishing’ was measured by 13 items concerning the following concepts: a meaningful life, qualitative life, and experienced happiness from the questionnaire Positive Health (*Eenvoudige tool Mijn Positieve Gezondheid*, 2021). These items were based on interviews with youth. Examples of items are as follows: “Do you find life meaningful?” or “Are you happy?” Items were measured on a three-point scale; *not true, a little true* to *true*. The Cronbach’s Alpha was .866.

***Resilience***

‘Resilience’ was measured based on two statements from the Brief Resilience Questionnaire (Smith et al., 2008): “After a hard period I usually recover quickly” and “I am finding it difficult to endure stressful events”. Only the second item was included within the present study since the consistency between the two statements was low (⍺ = 0.30) and the second item best fitted the definition of resilience. Answers could be given on a five-point scale from *totally disagree* to *completely agree.*

***Social support***

‘Social support’ was measured by the following five items: ‘I have someone I can talk to if I am having a difficult time’, ‘I have someone who understands me’, ‘I have someone I can trust’, ‘My friends support me in what I do’, ‘My parents support me in what I do’. Items are measured on a three-point scale; *not true, a little true, true*. The Cronbach’s Alpha was .860

**Data analysis**

***Strategy for analysis***

For analyzing the data, IBM SPSS Statistics (version 26) was used. Several steps were taken prior to the analysis. Descriptive statistics were obtained for the demographic and model variables. Thereafter, the assumptions of multiple regression and moderation were checked. First, both linearity and homoscedasticity were examined by drawing and studying scatterplots of the model variables. For linearity, a linear pattern is needed, for homoscedasticity of the residuals the scatterplot must be cloud-shaped. Secondly, the normality of the residuals was examined by performing a histogram and P-P plot. The histogram was a little right-skewed. Thereafter, the absence of multicollinearity was established by conducting Spearman correlations for the dichotomous and ordinal variables and Pearson correlation for the continuous variable ‘age’. Lastly, multicollinearity between the variables was tested by performing a reliability test. For all independent variables, the VIF was < 1.6, hence no correlation was found between the variables in the model. For all control variables the VIF was < 4.9, therefore a moderate correlation between the control and (in)dependent variables was found. All assumptions were met. Besides this, the following interaction items were made: flourishing and gender, resilience and gender, and social support and gender. This was done by the multiplication of the centered variables of flourishing, resilience, and social support. A multiple regression analysis was performed. In model 1, the control variables education level, age and gender were included. In model 2, flourishing, resilience, and social support were included. Lastly, the potential moderating effect of gender was investigated. This was done by adding the interaction effect between flourishing and gender, resilience and gender, and social support and gender in model 3.

**Results**

**Descriptive statistics**

The descriptives of the control, independent and dependent variables are presented in Table 1. A total of 5,398 participants, boys (51.1%) and girls (48.9%) in the age range between 12-16 years old (*M* = 14.45, *SD* = 1.34) were included. About half of the participants followed a vocational education track (47.0%) and the other half a pre-academic track (53.0%). Participants scored relatively low to moderate on psychological problems, moderate on resilience, and relatively high on flourishing and perceived social support.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table 1** |  |  |  |  |  |  |
| *Descriptive statistics of the demographic variables and predictors of psychological problems*  |
|  | N | Min | Max | M | SD | % |
| Psychological Problems |  | 0 | 5 | 2.50 | 2.36 |  |
|  |  |  |  |  |  |  |
| Flourishing |  | 1 | 3 | 2.62 | .41 |  |
| Resilience |  | 1 | 3 | 1.59 | .49 |  |
| Social Support |  | 1 | 3 | 2.73 | .43 |  |
| **Demographic Variables** |  |  |  |  |  |  |
|  Vocational (VMBO-b/t) | 2537 |  |  |  |  | 47.0% |
|  Pre-academic (HAVO/VWO) | 2861 |  |  |  |  | 53.0% |
|  Age |  | 12 | 16 | 14.45 | 1.34 |  |
|

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Male |  |  |  |  |  |  |
| Female |  |  |  |  |  |  |

 | 27562642 |  |  |  |  | 51.1%48.9% |
|  |  |  |  |  |  |  |

**Correlations**

All obtained correlations for the model and control variables are displayed in Table 2. The control variables education level, age and gender were all positively and significantly correlated with psychological problems. This means that girls, higher educated and older adolescents experienced higher levels of psychological problems. Additionally, the predictors flourishing, resilience, and social support were all negatively and significantly correlated with psychological problems. Of the predictors, the correlation between flourishing and psychological problems was highest, however still weak. Remarkably, the correlation between the predictors flourishing and social support was highest of all variables, however weak as well.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 2** |  |  |  |  |  |  |  |
| *Correlation matrix of all model variables and the independent variable psychological problems*  |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Psychological problems | 1 |  |  |  |  |  |  |
| Flourishing | -.42\*\* | 1 |  |  |  |  |  |
| Resilience | -.35\*\* | .38\*\* | 1 |  |  |  |  |
| Social Support | -.23\*\*\* | .43\*\* | .25\*\* | 1 |  |  |  |
| Education level | .05\*\* | .05\*\* | .06\*\* | .04\*\* | 1 |  |  |
| Age | *.09\*\** | *-.05\*\** | *.01* | *-.03\** | *.08\*\** | *1* |  |
| Gender | .35\*\* | -.11\*\* | -.22\*\* | .04\*\* | .03\*\* | -.01 | 1 |
| *\*p<.05;\*\*p<.01;p\*\*\*<.001* |

 *Note.* Pearson correlations are italicized, and the Spearman correlations are represented straight.

**Multivariate regression analysis**

The obtained results of the multiple regression are displayed in Table 3. In the first model, the control variables gender, education level, and age were tested. Model 1 explains 13.6% of the variance and was a significant predictor of psychological problems, (*R²* = .137; *F*(3, 5394) = 284.91; *p* = < .001). Age contributed significantly to the model as well as gender. Education level, however, was not a significant predictor.

In the second model, control variables and predictors were tested. This model explains 33.9% of the variance and was a significant predictor of psychological problems, (*R²* = .339; *F*(6, 5391) = 460.31; *p* = .000). When examined together in a model, only flourishing and resilience were significant predictors for psychological problems. Both were negatively related to psychological problems, which means that an increase of flourishing or resilience is associated with a decrease of psychological problems. Social support on the other hand was not found to be a significant predictor, when controlled for flourishing and resilience. When researched individually, social support was negatively associated with psychological problems.

|  |  |  |  |
| --- | --- | --- | --- |
| **Table 3** |  |  |  |
| *Multivariate regression analysis of flourishing, resilience and social support predicting psychological problems*  |
|  |  Unstandardized Coefficients |  | Standardized Coefficients |
|  | B | SE |  β |
| 1. |  |  |  |
| Constant | -2.48 | .34 |  |
| Education Level | .19 | .06 | .04\*\*\* |
| Age | .16 | .02 | .09\*\*\* |
| Gender | 1.67 | .06 | .35\*\*\* |
| 2. |  |  |  |
| Constant | -2.02 | .29 |  |
| Education Level | .33 | .05 | .07\*\*\* |
| Age | .12 | .02 | .07\*\*\* |
| Gender | 1.31 | .05 | .27\*\*\* |
| Flourishing | -2.12 | .07 | -.37\*\*\* |
| Resilience | -.81 | .06 | -.16\*\*\* |
| Social Support | .11 | .07 | .02 |
| 3. |  |  |  |
| Constant | -1.50 | .29 |  |
| Educational Level | .32 | .05 | .06\*\*\* |
| Age | 1.00 | .07 | .21\*\*\* |
| Gender | 1.00 | .07 | .21\*\*\* |
| Flourishing | .39 | .24 | .06 |
| Resilience | -.46 | .18 | -.09 |
| Social Support | .24 | .21 | .04 |
| Flourishing and Gender  | -1.67 | .15 |  -.47\*\*\* |
| Resilience and Gender | -.20 | .11 |  -.07 |
| Social Support and Gender | -.10 | .14 |  -.03 |
| *\*p<.05;\*\*p<.01;*\*\*\**p<.001* |  |  |  |

**Moderation**

In the third model of the linear regression analysis, the moderating effect of gender on the individual pathways was tested. As a whole, the third model explained 36.3% of the variance and was a significant predictor for psychological problems, (*R²* =.365; *F*(9, 5388) = 343.41; *p* = .000). As is shown in Table 3, a significant moderation effect of gender was found between flourishing and psychological problems. However, no significant moderation effect of gender was found between resilience and psychological problems, or social support and psychological problems. To examine how gender moderated the relationship between flourishing and psychological problems, the relationship was plotted as can be seen in Figure 1.

**Figure 1**

*The effect of flourishing on psychological problems for boys and girls*



In Figure 1 the relation between flourishing and psychological problems and how this relationship differs between girls and boys is displayed. Girls had more psychological problems compared to boys. Nonetheless, when flourishing increases, psychological problems decrease was stronger for girls compared to boys. Therefore, the negative association between flourishing and psychological problems was stronger for girls.

**Discussion**

The main objective of the present study is to examine whether flourishing, resilience, and social support are potential protective factors for psychological problems, for little research is done on this association. Additionally, the influence of gender on these associations between the protective factors and psychological problems is studied. Below, the main findings are discussed.

First, a negative association between flourishing and psychological problems is found. This result indicates that the more an adolescent flourishes, the less psychological problems they experience. Therefore, flourishing seems to function as a protective factor for psychological problems. This is in line with the research of Schotanus-Dijkstra et al. (2017) and VanderWeele (2017) among adults. To this researcher's knowledge, this is the first study that confirms the association between flourishing and psychological problems in a nationwide adolescent sample. Additionally, comparable results are found regarding resilience. The results indicate that resilience is negatively associated with psychological problems as well. The more resilient adolescents are the less psychological problems they experience. Therefore, resilience also seems to function as a protective factor. This coincides with the findings of the previous studies by Schoemaker et al. (2019) and Schultze-Lutter et al. (2016) among adolescents. However, no significant association is found between social support and psychological problems in adolescents when included in one multivariate model together with flourishing and resilience. This is contrary to the previous studies by Bi et al. (2021), Guntzviller et al. (2020), and Rueger et al. (2016). Remarkably, a significant correlation is found when social support is studied individually as a protective factor of psychological problems. Although combined in a model with resilience and flourishing, it no longer is significantly associated. Therefore, the first hypothesis that flourishing, resilience, and social support are independently associated with psychological problems is partly confirmed.

Several explanations can clarify the absence of the association between social support and psychological problems in the multivariate model. Firstly, social support as a construct is often considered part of and proved relevant for both the construct of resilience (Conner & Davidson, 2003; Dantzer et al., 2018, Tusaie & Dyer, 2004) and the construct of flourishing (Burns et al., 2022; Cho & Docherty, 2020; De la Fuente et al., 2020; VanDerWeele, 2017; Witten et al., 2019). In addition to the latter, the PERMA-model by Seligman (2012), which outlines the characteristics of a flourishing individual and Wellbeing Theory (WBT), even considers relationships and experiencing support from social relationships one of the five components of flourishing, the others being positive emotions, engagement, meaning, and achievement. Indeed, although weak, the correlation between social support and flourishing is highest of all individual correlations. On the other hand, no evidence for multicollinearity is found when checking the model assumptions. However, considering everything, it cannot be ruled out that the fact that social support no longer emerges as a significant predictor in the overall model, might partly be explained by an overlap in construct.

Secondly, another explanation for the absence of the association between social support and psychological problems could be that social support is a more indirect or distal predictor compared to flourishing and resilience. According to the PPCT-model (Bronfenbrenner & Morris, 1998), individual force characteristics can foster or sustain proximal processes. Therefore, force characteristics can mediate proximal processes. In this study, the relationship between social support and psychological problems could be fully mediated by the force characteristics of resilience or flourishing. This explanation is found for the protective factor resilience in both young adults (Yildirim & Tanriverdi, 2021) and adult lung cancer patients (Hu et al., 2018). It is interesting for future studies to research whether this could also apply to generally healthy adolescents.

Lastly, the previous mentioned studies which do confirm that social support is negatively associated with psychological problems do not fully coincide with the present study's research design and population. The research design differs, for the present study combines flourishing, resilience, and social support in one model while the abovementioned studies researched social support individually (Bi et al., 2021; Rueger et al., 2016). Besides, the population of the previous mentioned studies do not fully coincide with the population of the present study. The present study includes only 12-and-16-year-old Dutch adolescents in the analysis while the other studies also include young adults (Guntzviller et al., 2020) and adults (Jacobson et al., 2017). This might also partly explain the difference in outcome.

Besides the direct relationships between the model variables and psychological problems, the moderating effect of gender within these associations is studied. The results imply that the relationship between flourishing and psychological problems is influenced by gender. Compared to boys, girls tend to have more psychological problems, but their psychological problems seem to decrease stronger with higher levels of flourishing. The results of this study confirm the expected gender differences in psychological problems, as previous studies indicate that compared to boys, girls have higher levels of psychological problems (Booker et al., 2018; Boson et al., 2016; Duinhof et al., 2015; Schoemaker et al., 2019). Although, not in accordance with the hypothesis, girls seem to have higher levels of flourishing as well. However, this result does coincide with the studies of De la Fuente et al. (2020) and Schotanus-Dijkstra et al. (2016) among adults. The found interaction effect seems to indicate that flourishing and psychological problems appear more strongly connected among girls compared to boys. This finding among adolescents is new and indicates that investing in flourishing might be a potential avenue to decrease psychological problems or the chances of developing psychological problems, especially among girls.

Gender does not seem to influence the relationship between resilience and psychological problems. This is in accordance with the study of Hjemdal and colleagues (2011). They found that overall resilience is unrelated to gender differences, although components of resilience might be expressed differently for each gender. For instance, girls score lower on personal competence, which includes among other things self-esteem, self-acceptance, hope, and determination, than boys (Hjemdal et al., 2011). Also, gender does not seem to influence the relationship between social support and psychological problems. This coincides with the study of Dalgard and colleagues (2006). They state that boys and girls experience different kinds of social support and that girls report to rely more on social support than boys. However, no difference in the effect thereof regarding experiencing psychological problems is found.

The present study has several strengths. First of all, the research sample is large and nationally representative. This decreases sampling bias and contributes to external validity. The results can be considered generalizable to school-going youth between 12-and-16-years-old. However, the study findings need to be interpreted in light of some limitations. First of all, the cross-sectional design of the study excludes temporal inferences. Therefore

no statements about causality can be made. Secondly, from the literature, it is known that there are various protective factors for psychological problems (see also, Cairns et al., 2014; Dooley et al., 2015), this study only includes three. Other protective factors might explain more variance or may prove stronger protective factors for psychological problems. Additionally, with regard to the moderator gender, it should be mentioned that in the questionnaire adolescents could only indicate whether they were male or female. Adolescents who do not identify with being either male or female are not adequately considered in this study. This limits the variation in identity of those studied, although transgender or non-binary individuals are part of the current research population (Medeiros et al., 2020). Besides, non-binary or genderqueer people, who identify with a gender that does not exclusively fall in male/female categories, often suffer from more psychological problems than people who are gender conform. It is therefore important to include this group in researching possible protective factors, because they are at greater risk for psychological problems and associated consequences (Scandurra et al., 2019). Additionally, resilience is measured by only one item of the larger Brief Resilience Scale (Smith et al., 2008). Therefore, not all components of resilience have been considered which is important if gender differences are taken into account as boys and girls differ on multiple aspects of resilience (Hjemdal et al., 2011).

Lastly, the data of this research is exclusively self-reported via questionnaires, which might increase the risk of response bias. Participants might weaken, strengthen or give socially desirable answers rather than being truthful when asked about their mental health.

Future research should consider a longitudinal design with multiple time points of data collection. With multiple points in time, it is possible to study changes over a certain period and make statements about causality. In this study only statements about associations can be made. Besides this, future research could consider other protective factors of psychological problems than the ones researched in this study, such as self-confidence (Askeland et al., 2020; Costello et al., 2008), school connectedness (Costello et al., 2008), religion (Bond et al., 2005; Oman & Lukoff, 2018) or physical activity (Borland et al., 2022; Lu et al., 2020). Also, to increase the reliability, future research could use additional sources of information such as parents. This might decrease self-report bias and give a different perspective on whether an adolescent suffers from psychological problems. For future research, this study raises new questions to investigate. It is recommended to further study the relationship between flourishing and psychological problems in relation to gender. The found interaction effect is new and needs to be confirmed and further investigated.

This study might also provide some practical indications that could be useful for interventions. Taking the PPCT-model (Bronfenbrenner & Morris, 1998) and these results into account, it is recommended to focus interventions on personal force characteristics like flourishing or resilience instead of proximal processes like social support. An example of an intervention that focuses on fostering well-being and happiness, but also prevents depressive complaints among adolescents is the Happyles-training (Van der Zanden & Van der Linden, 2013). This training already concentrates on increasing resilience of adolescents, but the focus on flourishing, especially for girls, could be added to the program.

In sum, the results of the current study contribute to knowledge about protective factors associated with psychological problems in adolescents. The more an adolescent flourishes or is resilient, the less psychological problems they seem to experience. When taking gender into account, girls in particular benefit from flourishing with regard to the decrease of their psychological problems. This interaction effect warrants further investigation.

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**Appendix A: Interdisciplinarity**

Theoretical insights from several scientific disciplines contribute to understanding how the possible protective factors resilience, social support and flourishing are associated with psychological problems. Interdisciplinary research is the combination of two or more disciplines or academic fields. Every discipline has limitations, an interdisciplinary approach creates an opportunity to let them complement each other (Aboelela et al., 2007). Concepts from different disciplines are needed to build the above mentioned model. First of all, the protective factors of psychological problems find their origin in different disciplines. Second of all, the protective factors are on an individual or an environmental level, which means they are explained by different disciplines.

Social support finds its basis in sociology and psychology. Both disciplines study and explain human behavior. However, sociology is the study of human interaction and social relations, also in relation to systems and the society. Psychology is the study of understanding the human mind and behavior. The social support adolescents feel from their parents and friends can be explained by both studies.

Resilience can be defined and explained by psychology.

Flourishing is a concept which can be assigned to three disciplines: Psychology, philosophy and ethics. It can be defined as hedonic and eudaimonic. The former includes being virtuous, which finds its roots in philosophy and ethics.The latter is a concept which stems from ancient Greek philosophy. However, eudaimonic well-being also includes psychological and social well-being. Which can be explained by psychology.

Psychological problems can be defined and explained by psychology. Like flourishing, is gender in itself an interdisciplinary concept. Studying gender is included in arts, humanities and social science disciplines like sociology.

The above mentioned factors can be found on different levels. Sameroff (2009) states there are three levels, personal, group and society or culture level. Conditions or phenomenons can be explained on these levels. Resilience, flourishing and psychological problems are factors that can be found on the personal level. Social support can be found on the family or group level. Gender can be found on the cultural level, it includes the cultural and social construction of male and female.

In sum, my model is interdisciplinary for the factors find their origin in multiple disciplines and multiple disciplines are combined to research them.

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Page Break

**Appendix B: Contract data-use TED track**

Utrecht, 2022

This letter constitutes formal confirmation of the fact that the data from the Utrecht University Peilstationsonderzoek Scholieren/ESPAD 2019 have been made available to Irene Pel 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 Prof. dr. Marloes Kleinjan. Irene Pel 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 are the potential protective factors of resilience, flourishing and social support associated with psychological problems?

The second research question: Does the association between these potential protective factors and psychological problems differ for boys and girls?

The following variables will be used:

**Dependent variable**: Psychological problems

**Independent variables:** Resilience, social support, flourishing

**Other variables:** Gender

No report based on the data from the project Peilstationsonderzoek Scholieren/ESPAD will be made public, unless permission has been obtained in advance from the Project Coordinator for the Prof. dr. Marloes Kleinjan. After the expiration of this contract, dated 30 August, 2022, Irene Pel shall delete the Peilstationsonderzoek Scholieren/ESPAD data.

**Dates and signature:**

13/01/2022



 Name of student: Irene Pel

Name of Project Coordinator:



**Appendix C: Syntax**

\*\*\* PREPARATION DATA SELECT RIGHT AGE (12-16)

FREQUENCIES lft.

SELECT IF(lft>11) and (lft<17).

FREQUENCIES lft.

\*\*\*PREPARATION DATA DELETE MISSING VALUES

USE ALL.

COMPUTE filter\_$=(NMISS(floreren) < 1).

VARIABLE LABELS filter\_$ 'NMISS(floreren) < 1 (FILTER)'.

VALUE LABELS filter\_$ 0 'Not Selected' 1 'Selected'.

FORMATS filter\_$ (f1.0).

FILTER BY filter\_$.

EXECUTE.

FILTER OFF.

USE ALL.

SELECT IF (NMISS(sociale\_steun) < 1).

EXECUTE.

FILTER OFF.

USE ALL.

SELECT IF (NMISS(veerkracht1) < 1).

EXECUTE.

FILTER OFF.

USE ALL.

SELECT IF (NMISS(v2) < 1).

EXECUTE.

FILTER OFF.

USE ALL.

SELECT IF (NMISS(sdqem1) < 1).

EXECUTE.

\*\*\*PREPARATION DATA: CENTRE PREDICTORS, MAKE INTERACTIONTERMS

DATASET ACTIVATE DataSet2.

FREQUENCIES VARIABLES=floreren sociale\_steun veerkracht1

 /FORMAT=NOTABLE

 /STATISTICS=MEDIAN

 /ORDER=ANALYSIS.

COMPUTE Floreren\_c=floreren - 2.75.

EXECUTE.

COMPUTE Socialesteun\_c= sociale\_steun - 3.

EXECUTE.

COMPUTE Veerkracht1\_c=veerkracht1 - 2.

EXECUTE.

COMPUTE Floreren\_sex=Floreren\_c \* v2.

EXECUTE.

COMPUTE Socialesteun\_sex=Socialesteun\_c \* v2.

EXECUTE.

COMPUTE Veerkracht1\_sex=Veerkracht1\_c \* v2.

EXECUTE.

\*\*\*CHANGE SCHOOLLEVEL INTO A DUMMY VARIABLE

DATASET ACTIVATE DataSet1.

RECODE schnivo (1=0) (2=0) (3=1) (4=1) INTO Opleidings\_niveau.

VARIABLE LABELS Opleidings\_niveau 'Vocational 0 Preacademic 1'.

EXECUTE.

\*\*\*CALCULATE CRONBACHS ALPHA

RELIABILITY

 /VARIABLES=v82\_13 v82\_14 v82\_15 v82\_16 v82\_17

 /SCALE('SocialeSteun') ALL

 /MODEL=ALPHA

 /STATISTICS=CORR

 /SUMMARY=TOTAL.

RELIABILITY

 /VARIABLES=v80\_06 v80\_10 v80\_13 v80\_19

 /SCALE('EmotioneleProblemen') ALL

 /MODEL=ALPHA

 /STATISTICS=CORR

 /SUMMARY=TOTAL.

RELIABILITY

 /VARIABLES=v85\_01 v85\_02 v85\_03 v85\_04 v85\_05 v85\_06 v85\_07 v85\_08 v85\_09 v85\_10 v85\_11 v85\_12

 v85\_13

 /SCALE('Floreren') ALL

 /MODEL=ALPHA

 /STATISTICS=CORR

 /SUMMARY=TOTAL.

\*\*\* CHECK ASSUMPTIONS MULTIPLE REGRESSION

\*\*\*CONTROL VARIABELES

\*\*\*ASSUMPTION: LINEARITY AND HOMOSCEDASTICITY VIA SCATTERPLOT

\* Chart Builder.

GGRAPH

 /GRAPHDATASET NAME="graphdataset" VARIABLES=age sdqem1 MISSING=LISTWISE REPORTMISSING=NO

 /GRAPHSPEC SOURCE=INLINE

 /FITLINE TOTAL=NO SUBGROUP=NO.

BEGIN GPL

 SOURCE: s=userSource(id("graphdataset"))

 DATA: age=col(source(s), name("age"), unit.category())

 DATA: sdqem1=col(source(s), name("sdqem1"), unit.category())

 GUIDE: axis(dim(1), label("age"))

 GUIDE: axis(dim(2), label("emotionele problemen"))

 GUIDE: text.title(label("Scatter Plot of emotionele problemen by age"))

 ELEMENT: point(position(age\*sdqem1))

END GPL.

\* Chart Builder.

GGRAPH

 /GRAPHDATASET NAME="graphdataset" VARIABLES=v2 sdqem1 MISSING=LISTWISE REPORTMISSING=NO

 /GRAPHSPEC SOURCE=INLINE

 /FITLINE TOTAL=NO SUBGROUP=NO.

BEGIN GPL

 SOURCE: s=userSource(id("graphdataset"))

 DATA: v2=col(source(s), name("v2"), unit.category())

 DATA: sdqem1=col(source(s), name("sdqem1"), unit.category())

 GUIDE: axis(dim(1), label("Geslacht"))

 GUIDE: axis(dim(2), label("emotionele problemen"))

 GUIDE: text.title(label("Scatter Plot of emotionele problemen by Geslacht"))

 SCALE: cat(dim(1), include("1.00", "2.00"))

 ELEMENT: point(position(v2\*sdqem1))

END GPL.

\* Chart Builder.

GGRAPH

 /GRAPHDATASET NAME="graphdataset" VARIABLES=Opleidings\_niveau sdqem1 MISSING=LISTWISE

 REPORTMISSING=NO

 /GRAPHSPEC SOURCE=INLINE

 /FITLINE TOTAL=NO SUBGROUP=NO.

BEGIN GPL

 SOURCE: s=userSource(id("graphdataset"))

 DATA: Opleidings\_niveau=col(source(s), name("Opleidings\_niveau"), unit.category())

 DATA: sdqem1=col(source(s), name("sdqem1"), unit.category())

 GUIDE: axis(dim(1), label("Vocational 0 Preacademic 1"))

 GUIDE: axis(dim(2), label("emotionele problemen"))

 GUIDE: text.title(label("Scatter Plot of emotionele problemen by Vocational 0 Preacademic 1"))

 ELEMENT: point(position(Opleidings\_niveau\*sdqem1))

END GPL.

\*\*\* ASSUMPTIONS NORMALITY CHECKED VIA HISTOGRAM

REGRESSION

 /MISSING LISTWISE

 /STATISTICS COEFF OUTS R ANOVA CHANGE

 /CRITERIA=PIN(.05) POUT(.10)

 /NOORIGIN

 /DEPENDENT sdqem1

 /METHOD=ENTER v2 age Opleidings\_niveau

 /SCATTERPLOT=(\*ZRESID ,\*ZPRED)

 /RESIDUALS HISTOGRAM(ZRESID) NORMPROB(ZRESID).

\*\*\* CHECK ASSUMPTIONS PREDICTORS MULTIPLE REGRESSION

\*\*\*ASSUMPTION: LINEARITY AND HOMOSCEDASTICITY VIA SCATTERPLOT

DATASET ACTIVATE DataSet1.

\* Chart Builder.

GGRAPH

 /GRAPHDATASET NAME="graphdataset" VARIABLES=Socialesteun\_c sdqem1 MISSING=LISTWISE

 REPORTMISSING=NO

 /GRAPHSPEC SOURCE=INLINE

 /FITLINE TOTAL=NO SUBGROUP=NO.

BEGIN GPL

 SOURCE: s=userSource(id("graphdataset"))

 DATA: Socialesteun\_c=col(source(s), name("Socialesteun\_c"))

 DATA: sdqem1=col(source(s), name("sdqem1"), unit.category())

 GUIDE: axis(dim(1), label("Socialesteun\_c"))

 GUIDE: axis(dim(2), label("emotionele problemen"))

 GUIDE: text.title(label("Scatter Plot of emotionele problemen by Socialesteun\_c"))

 ELEMENT: point(position(Socialesteun\_c\*sdqem1))

END GPL.

\* Chart Builder.

GGRAPH

 /GRAPHDATASET NAME="graphdataset" VARIABLES=Veerkracht1\_c sdqem1 MISSING=LISTWISE REPORTMISSING=NO

 /GRAPHSPEC SOURCE=INLINE

 /FITLINE TOTAL=NO SUBGROUP=NO.

BEGIN GPL

 SOURCE: s=userSource(id("graphdataset"))

 DATA: Veerkracht1\_c=col(source(s), name("Veerkracht1\_c"))

 DATA: sdqem1=col(source(s), name("sdqem1"), unit.category())

 GUIDE: axis(dim(1), label("Veerkracht1\_c"))

 GUIDE: axis(dim(2), label("emotionele problemen"))

 GUIDE: text.title(label("Scatter Plot of emotionele problemen by Veerkracht1\_c"))

 ELEMENT: point(position(Veerkracht1\_c\*sdqem1))

END GPL.

\* Chart Builder.

GGRAPH

 /GRAPHDATASET NAME="graphdataset" VARIABLES=Floreren\_c sdqem1 MISSING=LISTWISE REPORTMISSING=NO

 /GRAPHSPEC SOURCE=INLINE

 /FITLINE TOTAL=NO SUBGROUP=NO.

BEGIN GPL

 SOURCE: s=userSource(id("graphdataset"))

 DATA: Floreren\_sex=col(source(s), name("Floreren\_sex"))

 DATA: sdqem1=col(source(s), name("sdqem1"), unit.category())

 GUIDE: axis(dim(1), label("Floreren\_sex"))

 GUIDE: axis(dim(2), label("emotionele problemen"))

 GUIDE: text.title(label("Scatter Plot of emotionele problemen by Floreren\_sex"))

 ELEMENT: point(position(Floreren\_sex\*sdqem1))

END GPL.

\*\*\* ASSUMPTIONS: NORMALITY CHECKED VIA HISTOGRAM

REGRESSION

 /MISSING LISTWISE

 /STATISTICS COEFF OUTS R ANOVA CHANGE

 /CRITERIA=PIN(.05) POUT(.10)

 /NOORIGIN

 /DEPENDENT sdqem1

 /METHOD=ENTER age Opleidings\_niveau v2

 /METHOD=ENTER Socialesteun\_c Veerkracht1\_c Floreren\_c

 /SCATTERPLOT=(\*ZRESID ,\*ZPRED)

 /RESIDUALS HISTOGRAM(ZRESID) NORMPROB(ZRESID).

\*\*\* CHECK ASSUMPTIONS INTERACTIETERMS: MODERATION

\*\*\*ASSUMPTION: LINEARITY AND HOMOSCEDASTICITY VIA SCATTERPLOT

\* Chart Builder.

GGRAPH

 /GRAPHDATASET NAME="graphdataset" VARIABLES=Socialesteun\_sex sdqem1 MISSING=LISTWISE

 REPORTMISSING=NO

 /GRAPHSPEC SOURCE=INLINE

 /FITLINE TOTAL=NO SUBGROUP=NO.

BEGIN GPL

 SOURCE: s=userSource(id("graphdataset"))

 DATA: Socialesteun\_sex=col(source(s), name("Socialesteun\_sex"))

 DATA: sdqem1=col(source(s), name("sdqem1"), unit.category())

 GUIDE: axis(dim(1), label("Socialesteun\_sex"))

 GUIDE: axis(dim(2), label("emotionele problemen"))

 GUIDE: text.title(label("Scatter Plot of emotionele problemen by Socialesteun\_sex"))

 ELEMENT: point(position(Socialesteun\_sex\*sdqem1))

END GPL.

\* Chart Builder.

GGRAPH

 /GRAPHDATASET NAME="graphdataset" VARIABLES=Veerkracht1\_sex sdqem1 MISSING=LISTWISE

 REPORTMISSING=NO

 /GRAPHSPEC SOURCE=INLINE

 /FITLINE TOTAL=NO SUBGROUP=NO.

BEGIN GPL

 SOURCE: s=userSource(id("graphdataset"))

 DATA: Veerkracht1\_sex=col(source(s), name("Veerkracht1\_sex"))

 DATA: sdqem1=col(source(s), name("sdqem1"), unit.category())

 GUIDE: axis(dim(1), label("Veerkracht1\_sex"))

 GUIDE: axis(dim(2), label("emotionele problemen"))

 GUIDE: text.title(label("Scatter Plot of emotionele problemen by Veerkracht1\_sex"))

 ELEMENT: point(position(Veerkracht1\_sex\*sdqem1))

END GPL.

\* Chart Builder.

GGRAPH

 /GRAPHDATASET NAME="graphdataset" VARIABLES=Floreren\_sex sdqem1 MISSING=LISTWISE REPORTMISSING=NO

 /GRAPHSPEC SOURCE=INLINE

 /FITLINE TOTAL=NO SUBGROUP=NO.

BEGIN GPL

 SOURCE: s=userSource(id("graphdataset"))

 DATA: Floreren\_sex=col(source(s), name("Floreren\_sex"))

 DATA: sdqem1=col(source(s), name("sdqem1"), unit.category())

 GUIDE: axis(dim(1), label("Floreren\_sex"))

 GUIDE: axis(dim(2), label("emotionele problemen"))

 GUIDE: text.title(label("Scatter Plot of emotionele problemen by Floreren\_sex"))

 ELEMENT: point(position(Floreren\_sex\*sdqem1))

END GPL.

\*\*\* ASSUMPTIONS: NORMALITY CHECKED VIA HISTOGRAM

REGRESSION

 /MISSING LISTWISE

 /STATISTICS COEFF OUTS R ANOVA CHANGE

 /CRITERIA=PIN(.05) POUT(.10)

 /NOORIGIN

 /DEPENDENT sdqem1

 /METHOD=ENTER age Opleidings\_niveau v2

 /METHOD=ENTER Socialesteun\_c Veerkracht1\_c Floreren\_c

 /METHOD=ENTER Socialesteun\_sex Veerkracht1\_sex Floreren\_sex

 /SCATTERPLOT=(\*ZRESID ,\*ZPRED)

 /RESIDUALS HISTOGRAM(ZRESID) NORMPROB(ZRESID).

\*\*\*FREQUENTION TABLE

FREQUENCIES VARIABLES=v2 age Opleidings\_niveau sdqem1 floreren sociale\_steun veerkracht1 sdqem1

 /STATISTICS=STDDEV MEAN

 /ORDER=ANALYSIS.

OUTPUT MODIFY

 /SELECT TABLES

 /IF COMMANDS=["Frequencies(LAST)"] SUBTYPES="Frequencies"

 /TABLECELLS SELECT=[VALIDPERCENT CUMULATIVEPERCENT] APPLYTO=COLUMN HIDE=YES

 /TABLECELLS SELECT=[TOTAL] SELECTCONDITION=PARENT(VALID MISSING) APPLYTO=ROW HIDE=YES

 /TABLECELLS SELECT=[VALID] APPLYTO=ROWHEADER UNGROUP=YES

 /TABLECELLS SELECT=[PERCENT] SELECTDIMENSION=COLUMNS FORMAT="PCT" APPLYTO=COLUMN

 /TABLECELLS SELECT=[COUNT] APPLYTO=COLUMNHEADER REPLACE="N"

 /TABLECELLS SELECT=[PERCENT] APPLYTO=COLUMNHEADER REPLACE="%".

\*\*\* ASSUMPTIONS: MULTICOLLINEARITY CHECKED - CORRELATION MATRIX FLOURISHING, RESILIENCE AND SOCIAL SUPPORT AND PSYCHOLOGICAL PROBLEMS

CORRELATIONS

 /VARIABLES=sdqem1 Floreren\_c Socialesteun\_c Veerkracht1\_c v2 Opleidings\_niveau age

 /PRINT=TWOTAIL NOSIG FULL

 /MISSING=PAIRWISE.

NONPAR CORR

 /VARIABLES=sdqem1 Floreren\_c Socialesteun\_c Veerkracht1\_c v2 Opleidings\_niveau age

 /PRINT=SPEARMAN TWOTAIL NOSIG FULL

 /MISSING=PAIRWISE.

\*\*\* MULTIPLE REGRESSION, FLOURISHING, RESILIENCE AND SOCIAL SUPPORT AND PSYCHOLOGICAL PROBLEMS

REGRESSION

 /MISSING LISTWISE

 /STATISTICS COEFF OUTS R ANOVA

 /CRITERIA=PIN(.05) POUT(.10)

 /NOORIGIN

 /DEPENDENT sdqem1

 /METHOD=ENTER age Opleidings\_niveau v2

 /METHOD=ENTER Socialesteun\_c Veerkracht1\_c Floreren\_c

 /SCATTERPLOT=(\*ZRESID ,\*ZPRED).

\*\*\* MODERATION FLOURISHING X GENDER, RESILIENCE X GENDER AND SOCIAL SUPPORT X GENDER AND PSYCHOLOGICAL PROBLEMS

REGRESSION

 /MISSING LISTWISE

 /STATISTICS COEFF OUTS R ANOVA

 /CRITERIA=PIN(.05) POUT(.10)

 /NOORIGIN

 /DEPENDENT sdqem1

 /METHOD=ENTER age Opleidings\_niveau v2

 /METHOD=ENTER Socialesteun\_c Veerkracht1\_c Floreren\_c

 /METHOD=ENTER Socialesteun\_sex Veerkracht1\_sex Floreren\_sex

 /SCATTERPLOT=(\*ZRESID ,\*ZPRED).

\*\*\* PLOT FLOURISHING, PSCYHOLOGICAL PROBLEMS AND GENDER (I CHANGED THE LABEL OF SDQEM1 TO PSYCHOLOGICAL PROBLEMS TO FIT THE CONCEPTS IN THE THESIS)

DATASET ACTIVATE DataSet1.

GRAPH

 /SCATTERPLOT(BIVAR)=Flourishing WITH PsychologicalProblems BY v2

 /MISSING=LISTWISE

 /TITLE='Effect of gender on the relationship between Flourishing and Psychological Problems'.

**Appendix D: Igitur Form**

# scripties_fsw_onlineInformation about your thesis

Please save this form, modify it and e-mail it to your supervisor together with the digital final version of your thesis. For further questions see: <http://studion.fss.uu.nl/helpdesk/student/scrol>

|  |  |
| --- | --- |
| Student nummer: | 6318320 |
| Initials & prefixes: | I.C.A. |
| Family name: | Pel |
| Master: | Youth Studies |

*Begeleider*

|  |  |
| --- | --- |
| Name supervisor/assesor: \* | Marloes Kleinjan |
| Name 2th assesor: |  |

*Scriptie*

|  |  |
| --- | --- |
| Title thesis: \* | Examining psychological problems in adolescents: the associations with flourishing, resilience and social support  |
| Language thesis: \* | English |
| Abstract: |  |
| Key words:(seperated by ;) |  |
| Make public: \* | **Yes**/ No |
| Make public after date: |  |

Ingevuld op: \* 10-06-2022

Door: \* I.C.A. Pel

\* = Obliged to fill in

**Appendix F: Mini-internship 60 hours**

**Registrationform research activities for TED-students (60 hours)**

**Name: Irene Pel**

**Studentnumber: 6318320**

|  |  |  |
| --- | --- | --- |
| **Research Activities** | **Total number of hours** | **Signature YS staff** |
| Leeronderzoek ASW(twee middagen ondersteuning aangeboden en twee middagen stand-by gestaan voor vragen via de mail) | 30 hours |  |
| Research Loneliness Luzia Heu | 10 hours(still to be made) |  |
| Research Ina Koning and Damian | 20 hours(still to be made) |  |
|  |  |  |
|  |  |  |