

# Social support and its relation to mental well-being moderated by age and gender

*‘A study examining the importance of experienced social support in the Netherlands’*



June 24, 2022 – Rick Baeten

Master's thesis: Sociology, Contemporary Social Problems

Student number and e-mail: 6974597 / R.L.Baeten@students.uu.nl

Supervisor: Weverthon Barbosa Machado, PhD

Second reader: Luuk Mandemakers, PhD candidate



**Utrecht  
University**

## ***Abstract***

*Introduction:* With the mental healthcare sector being under pressure and the emergence of an extended waiting list for those seeking help, this study has examined the role of experienced social support on one's mental well-being. *Theory:* Hypotheses were derived from the Buffer theory and other more recent scientific literature. Three hypotheses were derived, with the first expecting that higher levels of social support will result in higher levels of one's mental well-being. Hypothesis two and three focused on the moderation effect of age and gender. *Methods:* The study consist of national data (n = 2775). To filter out possible confounds, level of education and level of psychical impairment were added to the multiple regression analyses. *Results:* Experienced social support has a significant positive effect on the level of mental well-being when controlling for the factors of age, gender, level of physical impairment and level of educational degree. No significant interaction effects were founds, meaning that there is no support found for moderating effects of age or gender. *Discussion:* This study has shown that those experiencing high levels of social support from their informal network (family or friends) are better off when it comes to mental well-being. Receiving support social from others could thereby encounter the growing waiting lists in mental healthcare. Future research is advised to include different forms of social support in their analysis to see whether there are differences in which forms of support people use or experience.

**Keywords:** mental well-being; experienced social support; mental healthcare; gender; age; multiple regression; waiting lists mental health

## ***Ethical statement***

This research has gone through the Ethical Review Board of the Faculty of Social & Behavioral Sciences (FERB) of Utrecht University. The FERB assumes that all the research done at the Faculty of Social and Behavioral Sciences is conducted in an ethically and responsible manner – in accordance with the prevailing conduct and professional codes and legislation (national and international). The approval of the FERB concerns ethical aspects - as well as data management and privacy concerns, including the European General Data Protection Regulation (GDPR). For this study, ethical approval was received on March 31, 2022 - and registered under reference number 22-1095.

## ***Introduction***

Current numbers are showing that mental healthcare in the Netherlands is under huge pressure and people are forced to be placed on a waiting list before they can be helped (Hardeman, 2022; Inspectie Gezondheidszorg en Jeugd, 2021). In late 2021, 100 thousand people were on a waitlist for a mental healthcare organization. From this group, 30 thousand had to wait circa 3 months – which is longer than allowed (Waarlo, 2021). The so-called ‘Treeknorm’ in the mental healthcare sector states that the maximum acceptable waiting time is 14 weeks - 4 weeks sign-up time and 10 weeks for treatment waiting time (Nederlandse Zorgautoriteit NZa, 2022). One of the reasons for the growing waiting list is that the sector is alarming understaffed – there is an estimated shortage of 3.500 to 6.800 employees such as psychiatrists, psychologists, and social psychiatric nurses. Another factor is that the demand for help has increased by 10 to 20% from 2020 to 2021 (Waarlo, 2021). In recent years, more than 4 out of 10 people had one or more forms of mental issues. Most present are mood issues, anxiety and substance use – each about equally common. Also, 1 out of 5 people has experienced one of these common issues at some point in their life. About as many men as women have experienced mental health issues at some point in their life, with women more often complaints such as anxiety and men more often issues regarding substance use. Having mental health issues varies by age and generation. People aged 25 had one or more mental health issues most often in their life time – those aged 55 to 65 least often. Mood disorders are most common in people aged 45 to 55, anxiety disorders in 35 to 45 years old, and substance use disorders in 18 to 35 years old. With regard to educational level, those with a low educational degree had more often mental complaints than those with a higher educational degree (Trimbos-instituut, 2021).

A possible reason for the increasing demand for mental healthcare services and the mental healthcare sector being under pressure is the Covid-19 pandemic, which resulted in several lockdowns and forced people to stay at home as much as possible. Recent numbers show that the number of suicides in 2021 has increased by 15% among people aging to 30 years old – mainly young men between 20 and 30 years old (Gilissen, 2022). Rijksinstituut voor Volksgezondheid en Milieu (RIVM), Trimbos and GGD GHOR have done a survey in the Spring of 2021 (in times of the third lockdown) among 28.000 students. The results showed that 51% experienced mental health problems such as anxiety and depression, of which 12% with severe extent. In addition, 80% felt lonely - 51% somewhat lonely and 29% strongly lonely (Nuijen et al., 2021). As the chairman of the Dutch Association for Psychiatry

states in the journal *Trouw*: “ While adults generally manage to recover mentally after a lockdown, this is much less the case with young adults. They reported twice as many mental complaints during the first lockdown, a few months later this was still one and a half times as many” (Van Egmond, 2022). Based on a systematic literature study from RIVM, findings show that during the Covid-19 crisis (globally) many people exercised less, ate less healthy and often suffered more from feelings of depression, anxiety and loneliness (Bosman et al., 2022). Also, people who already had mental or physical problems experienced more negative results of the Covid-19 crisis – i.e. it compounded the problems that already existed (Bosman et al., 2022; Moreno et al., 2020). Other factors that played a role in compounding mental health problems were poverty and poor family functioning. In addition, these effects on mental well-being are likely to be profound and long-lasting (Holmes, 2020; Hotopf, 2020).

A longitudinal study in the UK showed that the mental health and well-being of their respondents (3077 adults living in the UK) appeared to be affected in the initial phase of the Covid-19 crisis which resulted in increasing rates of suicidal thought – especially among young adult (O’Connor, 2020). Another longitudinal study done in Switzerland that took place at the time of the Covid-19 pandemic showed that mental issues such as depression, anxiety, stress and loneliness got worse - compared to the group in 2018 who did not experience the crisis (Elmer et al., 2020). In line with this also other international research pointed out the consequences of the crisis on mental well-being and health (Fegert et al., 2020; Talevi et al., 2020; Torales et al., 2020; Tsamakis et al., 2021).

The delay in receiving proper care can lead to serious consequences such as reduced quality of life, which in turn can lead to physical harm or suicide attempts (Fenema & Boesten, 2017). Waiting lists cause an accumulation of mental health issues, which can cause even more serious complaints (GGZ, 2016). Also, other (international) studies showed that exacerbated existing mental health problems are one of the most common complaints in relation to waiting lists (Punton, 2022).

Dutch municipalities are since the start of the decentralization in 2015 responsible for the youth care and Social Support Act (*Wet maatschappelijke ondersteuning*). The SSA law emerged intending to increase people’s self-reliance and to ensure that people can continue to be productive members of society while continuing to live in their own homes (Ministerie van Volksgezondheid, 2022). The Social Support Act (ESS) which was introduced initially in 2014 places a huge emphasis on people’s own strengths and support from people’s own social networks (Roeleveld, 2014). The idea behind this is that care and social support are first and

foremost the personal responsibility of citizens themselves. When people have difficulties with this they have to rely on their network of family, friends and neighbors. If they cannot help, it is possible to make use of a volunteer from outside their own network – possibly facilitated by the municipality. If these options are not doable, professional help can be provided.

Many studies point out the importance of social support on mental well-being, but many of them lack to look at other possible influential factors such as gender or age. Also, much of this research comes from abroad and is based on relatively small respondent groups. They also renounce adding moderation or mediation effects, which can bring meaningful information about the relation between social support and mental well-being. Hefner & Eisenberg (2009) showed that students with lower quality of social support were more likely to experience mental health issues – measured by the Multidimensional Scale of Perceived Social Support. Also Fasihi et al. (2017), Dalgard et al. (2018) and Klineberg et al. (2006) showed positive effects in relation to mental well-being and negative relations to namely stress. This study will therefore address the following descriptive research question: *To what extent does experienced social support influence mental well-being in the Netherlands?*

Although there are several studies done on the relation between social support and mental well-being, few of them took age or gender differences into account. For example, Sharif et al. (2018) look at the relation and how religiosity influenced this, while Choi & Noh (2019) took social media usage into account. Klineberg et al. (2006) and Holmes et al., (2020) looked at ethnicity. In addition, there is much research that focused on the factor of age (Gilissen, 2022; Nuijen et al., 2021; O'Connor et al., 2020; Tsamakidis et al., 2021) but they didn't look at possible interaction effects. This study will therefore examine the following explanatory research question: *To what extent does age and gender moderate the relation between experienced social support and mental well-being in the Netherlands?* As for the policy question, the following question will be taken into account: *Which steps can be taken by municipalities to enhance social support among their citizens?* In order to answer the research question, this study has used data from Centraal Bureau voor de Statistiek (CBS) and Centraal Plan Bureau (CPB). This study will examine whether and to what extent experienced social support influences someone's mental well-being. The goal of this study is to provide knowledge and insight on the importance of social support, which can be helpful for policymakers and others.

## *Theory*

This chapter will start by giving an understanding definition of social support in the context of this study. In addition, it will explain the underlying mechanisms and theory of the relation between (experienced) social support and mental-wellbeing. While there is a consensus on the importance of social support for (improved) mental-wellbeing many studies lack a clear theory section where this relation is being explained.

Social support can be defined as “social resources that persons perceive to be available or that are actually provided to them” (Gottlieb & Bergen, 2010). These resources can be emotional, instrumental, informational, or appraisal. Furthermore, these resources can be divided into actual or perceived, family-based or not, sporadically or routine (Song et al., 2011). It's a concept that can be viewed very broadly which included the following types of support; social support networks, peer networks, family support, (formal) advisor support, and social connectedness and emotional closeness (McDonald, 2018). The concept is related to the notion of being a member of a supporting network that provides various types of assistance. Heerde & Hemphill (2017) described it as certain functions that are being performed by others such as family members, friends, co-workers, relatives or others that distress an individual. More dated research emphasized the exchange of recourses between individuals that normally are two-way - e.g. an individual can give or receive social support (Suurmeijer et al., 1995). This study will hold on to the more broad concept of social support, that is: “the perception or experience that one is cared for, esteemed, and part of a mutually supportive social network” (Taylor, 2011).

The buffer theory has its origin in the field of medicine. The theory states that people who receive social support are better able to cope in situations of illness or other physical conditions (Alloway & Bebbington, 1987). Mitchell et al. (2013) have shown that athletes who perceived social support had reduced feelings of restlessness and isolation. In relation to mental well-being, more psychological and sociological research showed it effects of social support. For example, Eichhorn (2008) showed its effect on people with an eating disorder, while Kong et al. (2013) showed its connection to increased self-esteem and more life satisfaction. In the context of this study, the buffer theory suggests that social support can reduce the impacts of stressful or negative life events on mental well-being. It occurs when social support protects (i.e. buffers) people from the harmful effects of stress on mental well-

being (Lakey & Orehek, 2011). It flows from the stress and coping theory of Lazarus & Folkman (1987) which they defined as ‘‘the cognitive and behavioral efforts made to master, tolerate, or reduce external and internal demand among them (Folman & Lazarus, 1980, p. 223). The buffer theory states that the link between stress and reduced mental well-being is stronger for people with low social support than for people with higher social support. It is built on some relevant assumptions; that life events are stressful to the extent that people perceive the events as stressful (i.e. threats). These events increase the risk of reduced mental well-being depending on people’s coping – which includes the ability of problem solving and support seeking. Social support is a stable source of help that buffers against stress, which includes what relatives and friends say and do, and is most effective in buffering when the support especially meets the demand of the stressor and individual itself (Lakey & Orehek, 2011). Taking hereby into account that stress is a strongly correlated factor associated with mental health (Lee et al., 2004; Thoits, 2012; Ciarrouchi et al., 2002).

From this, one can assume that people with higher levels of social support are in general better able to cope and buffer their stressful life events which result in higher levels of mental well-being than those with lower levels of social support. Taking all this into knowledge, the first hypothesis is derived:

**H1** Higher levels of experienced social support will have a positive effect on one’s mental-wellbeing.

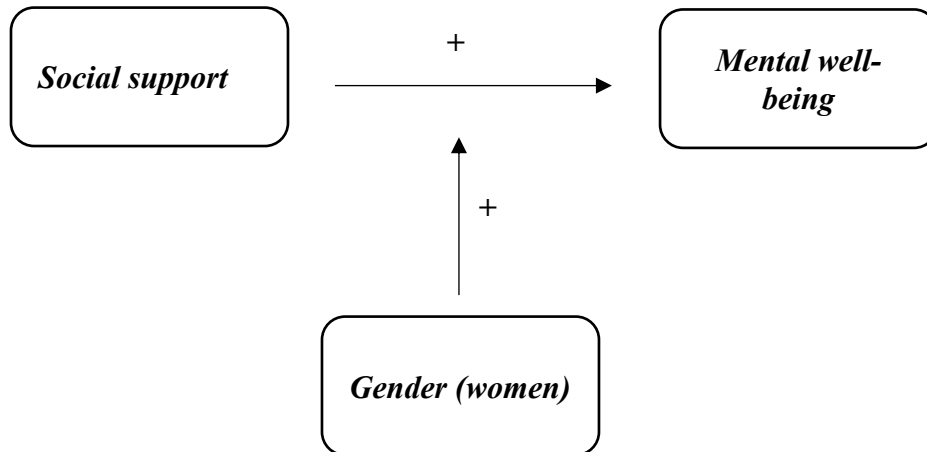


When looking at different forms of social support, the literature describes that there is evidence for gender differences regarding how men and women perceive this social support (Cheng & Chan, 2004; Rueger et al. 2002). One of the other findings suggests that women reported more friends but less family support than men (Cheng & Chan, 2004). Research from Rueger et al. (2002) found that parental support is a robust predictor of psychological and academic adjustment in adolescence – while classmates were a significant predictor for boys only. With regards to peer-social support (e.g. classmates) this was significant for boys but not for girls. Studies done on the relationship between social capital and emotion regulation regarding internet addiction have shown that this relation was stronger for women than for men participants. In other words, women were more capable of using social capital in a way to reduce internet usage and addiction and were better able to regulate their emotions (Mo et al., 2018). Also, with concern to the experiences of social support, differences arise. David-Pettus et al. (2017) looked at differences between men and women in a post-release juvenile setting and found that men reported higher rates of negative social support than women, while the amount of perceived social support (overall) was equal.

Apart from the fact that there are differences in the way men and women receive social support, there are also differences in the process of seeking and receiving social support. Women are more likely to seek and receive social support (in general) compared to men (Reevy & Maslach, 2001; Silverstein et al., 2002). Another (multinational) study done in five European countries that focused on the relation between negative life events and social support, showed that women are not more vulnerable to negative life events than men are. However, women with little to no social support who are exposed to these (negative) life events were more vulnerable than men with little or without social support (Dalgard et al., 2006).

These studies were primarily based on depressive symptoms, it nevertheless can be suggested that women use or experience social support differently than men do - which can result in a different relation between their experienced social support and its influence on mental-wellbeing. From the theory above the following hypothesis is being deduced:

**H2** The positive relation between experienced social support and one's mental-wellbeing will be stronger for women than for men.



*Figure 1: Moderation effect of gender on experienced social support and mental well-being*

Research on the difference in age regarding the effectiveness of social support showed that adults are more involved in a full range of social support than adolescents are (Denton & Zarbatany, 1996). For example, adolescents are more involved in social support strategies such as distraction which requires minimal social skills and effort. Distraction diverts attention from upsetting content and helps people to avoid negative emotions (Barbee et al., 1990). Compared to other forms of social support this form is low in intimacy. This form of social support had more effect on adolescents than adults (Denton & Zarbatany, 1996). In other words, adolescents cope effectively by ignoring their issues and diverting their attention to other external stimuli. Adults require more than distraction but thereby can rely on a more full and effective range of social support forms such as rationalization and excuses-validation - which can be seen as another form of psychological defense (Denton & Zarbatany, 1996). Research by Li et al. (2021) which looked at social support and mental health during the Covid-19 crisis showed that the older adults showed higher levels of mental health compared to the younger groups– despite they were at more risk of being seriously harmed by Covid.

Other research on (emotionally) well-being showed that age is a significant factor – due to shifting motivational priorities and placing more emphasis on emotion regulation (Carstensen, 2006). These findings suggest that age has a positive (main) effect on mental well-being.

A meta-analysis done by Chu (2010) made clear that age is significantly associated with the effect size between support of others and well-being, which means that for older participants the effect size became stronger. One potential reason for this is that vertical relations (which are more common for children) are less beneficial or effective than horizontal relations. Although this meta-analysis looked specifically at the differences between children and adolescents, it nevertheless is good to take into account. A possible reason for this is that when people become older they seek out relationships that are more emotionally close and strong (Fung & Carstensen, 2004). If social relations are deeper and emotionally meaningful as people grow older, they should become more beneficially and effective to cope with adversity and buffer against different forms of mental issues (Krause, 2005). Building on the theory and findings described above the third hypothesis has been derived:

**H3** The positive relation between experienced social support and one’s mental-wellbeing will be stronger for people with higher ages than with lower ages.

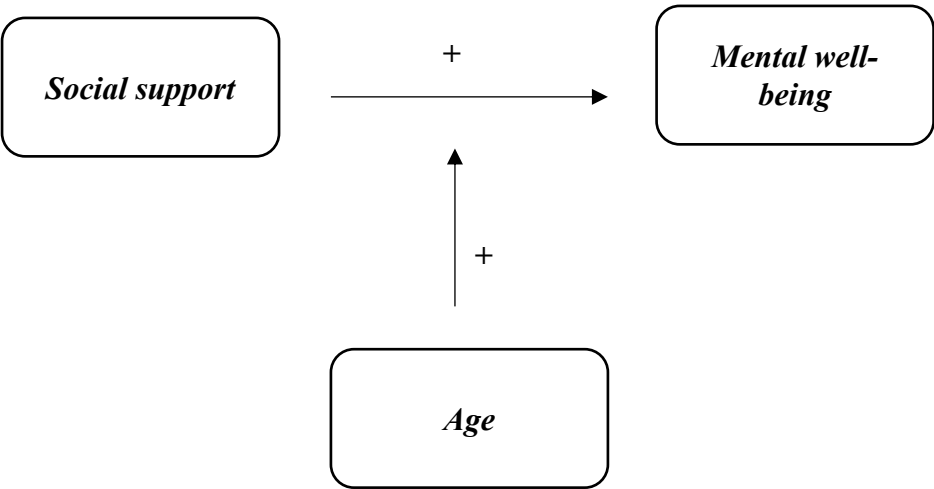


Figure 2: Moderation effect of age on experienced social support and mental well-being

## ***Methods and data***

For this study data from Centraal Bureau voor de Statistiek (CBS) and Centraal Plan Bureau (CPB) has been used. The origin of the survey was focused on healthcare usage in the Netherlands. The survey - also referred to as the Zorgenquête - was set up to estimate the use of care and nursing. It incorporated both demographic and policy developments and was conducted from April 2014 to May 2017. The survey is a follow-up to the Gezondheidsenquête (GE) and Onderzoek Sociale Samenhang (SocSam) which both are conducted monthly by CBS. Respondents consist of individuals with and without some kind of physical impairment. To be able to approach sufficient individuals within each of these groups, the survey is a follow-up from the GE and SocSam surveys. These respondents were then recruited for further research, by being asked in the previous surveys if they are willing to participate in follow-up research. Respondents from these surveys were selected by a stratified two-stage sampling method – municipally and persons. The sample was drawn based on the Gemeentelijke Basisadministratie (GBA). Individuals in these strata were then randomly selected by random sampling. Data were collected in three different ways, namely; computer-assisted web interviewing (CAWI), computer-assisted telephone interviewing (CATI), or computer-assisted personal interviewing (CAPI). 51% of the respondents have responded through CAWI, 26% through CATI and 23% through CAPI. Respondents that participated in the GE and SocSam survey in one of the above-described ways, were invited to the same way of taking part.

Respondents of these surveys that participated in CAWI were invited through a letter of registration for the current survey and received a voucher of 5 euros. Two weeks after the first letter of registration a reminder letter was sent to those who didn't respond already, and one week after again. Individuals who didn't respond (on the letter of invitation as well as the reminder letter) and didn't communicate at CBS that they no longer want to take part in the survey were re-approached through telephone contact. Individuals whose telephone number was unknown were re-approached at their homes. All respondents that took part through CATI or CAPI were also invited through a letter of invitation. For CATI respondents were tried to be approached during a time span of two weeks, with three contact attempts spread over two weeks. For these moments; the first was in the morning, the second during the day, and the last attempt in the evening.

For respondents that were invited for CAPI a time span of one month was managed. In the first half of the month, all respondents were visited and those at home were being tried to schedule an appointment for computer-assisted personal interviewing (CAPI). From the third attempt at their house, respondents were approached by telephone to schedule an appointment. When this also failed during the period of one month, the individual was removed from the list. In case respondents from CATI or CAWI were not able to take part due to a lack of language difficulties, respondents were also removed from the list. For CAPI this wasn't an option.

The survey consists of 2775 respondents in the Netherlands (n = 2775) all aged 18 years or older from the onset of the first day of survey-field work. The survey consists of information such as happiness and satisfaction, health and medical care, social support, and usage of formal and informal care. The overall response rate was 83,8%, and this is in line with the expectation that was set at 75%.

## ***Variables***

### ***Mental well-being (DV)***

This study has made use of seven statements to operationalize the concept of mental well-being. All questions together cover the concept of mental well-being based on experienced feelings of; nervousness, dejection, tiredness, loneliness, calm and peacefulness, and happiness.

The seven statements that have been used for measuring mental well-being are as followed;

- 1) 'During the past 4 weeks, how often have you felt (very) nervous?'
- 2) 'During the past 4 weeks, how often have you been feeling down that nothing could cheer you up?'
- 3) 'During the past 4 weeks, how often have you felt happy?'
- 4) 'During the past 4 weeks, how often did you feel tired?'
- 5) 'During the past 4 weeks, how often have you felt calm en peaceful?'
- 6) 'During the past 4 weeks, how often have you felt dejected and sad?'
- 7) 'During the past 4 weeks, how often have you felt lonely?'

For these statements, a six-point answers scale has been used ranging from 1 'continuously', 2 'mostly', 3 'often', 4 'sometimes', 5 'rarely' and 6 'never'. For questions 3 and 5, the values have been recoded in reverse to ensure the statements were measured correctly (i.e. a low score stands for low mental well-being and a high score stands for high mental well-being). Reliability analysis was conducted to check whether the multiple questions may form one scale. The analysis showed that the reliability was excellent (Cronbach's  $\alpha = .907$ ). The items then were merged into one variable 'mental well-being' that measures the average of all the scores on the 7 items.

#### Experienced social support (IV)

For measuring the level of experienced social support the following question has been used: 'To what extent do you agree or disagree with the following statement. I can always turn to my family or friends when I need it. Do you: 1 'completely agree with this', 2 'agree with this', 3 'neither agree nor disagree with this', 4 'disagree with this', 5 'completely disagree with this?'. The statement has been recoded in reverse in a way a low score stands for low experienced social support and a high score stands for high experienced social support.

#### Gender (moderator)

To measure gender differences the survey asked the respondent about their gender. Gender has been registered as 1 and 2, being 1) men and 2) women. For the analysis, this variable has been recoded into a dummy variable gender where 0 stands for 'men' and 1 'women'.

#### Age (moderator)

The variable age is ordered is a 7-point category, which each number having its age category. The seven categories are as followed: 1 = 18 to 24 years, 2 = 25 to 34 years, 3 = 35 to 44 years, 4 = 45 to 54 years, 5 = 55 to 64 years, 6 = 65 to 74 years, 7 = 75 years and older.

### Control variables

To filter out possible confounds, highest level of education and level of physical impairment were added as control variables. These variables are chosen because the literature shows that these factors correlate with mental-wellbeing. Educational level is a factor often applied in research since it is a broad estimate for several outcomes. Wadsworth & Achenbach (2005) state that children from low SES families, especially those with low educational levels contribute significantly to the initial appearance of mental health problems – with a mediation effect of access to structural resources of mental health care. Rather than income, educational level is a strong independent association of common mental disorders (Araya et al., 2002). This is in line with studies done on elderly people in relation to mental health which found that people with high education have a better psychological adjustment concerning wellbeing (Belo et al., 2020; Kavé et al., 2012; Foverskov et al., 2018). The variable educational degree is created by the question about the highest education completed. Answers ranged from low, middle to high. As for low educational level, this consists of primary education, vmbo, the first three years of havo or vwo or mbo-1 level. Middle concerns upper secondary havo or vwo, mbo-2, mbo-3 and mbo-4. High educational level consists of a university of applied sciences (hbo) or a university degree (wo).

The factor of physical health is often mentioned in the literature that has a direct effect on someone's mental health and wellbeing (Cho et al., 2011; Hawker, 2011). The level of physical or mental impairment was measured with the following screening question: 'Some people have difficulty carrying out certain actions, for example going up and down the stairs. Can you do this without difficulty, with some difficulty, with great difficulty, only with the help of others, or even with no help from others? The answer categories were as mentioned 'without difficult', 'with some difficult', 'with great difficulty', 'only with the help of others', and 'not even with the help of others'. Based on the given answers, the respondent then were assigned to a category of the level of impairment. These are as followed: 1) none, 2) almost none, 3) some, 4) impaired, and 5) severe impaired.

To test the hypotheses and to see to what extent social support and mental-wellbeing are correlated multiple regression analyses have been done. The analysis was done in three steps. The first analysis consists of the dependent variable (mental-wellbeing) and the independent variable. In this analysis, the total effect of social support on mental-wellbeing is shown. The second analysis also consists of the dependent and independent variables but includes also all other control variables (educational level and level of physical impairment). Lastly - to check the possible moderation effects - the interaction variables of age x social support, and gender x social support) have been added. Analysis was done with IBM SPSS Statistics software, version 27.

The multiple regression analysis is suitable for this study and research question and the data meets all assumptions that must be checked before performing multiple regression analysis. Respondents are invited to the survey by random sampling ( $n = 2775$ ). The dependent variable (mental-wellbeing) is measured by a Likert-scale, which for this study is considered as an interval level. The independent variable is also measured by making use of a Likert-scale. For measuring the moderation effects of the variables age and gender; age consists of an ordinal variable and gender consists of a dummy variable (i.e. 0 en 1). The Variance Inflation Factors (i.e. VIF) that test multicollinearity all scored in a range of 1 to 3, meaning that there is little chance of multicollinearity problems. Taking into account that values  $< .2$  are potentially a problem, and values  $< .1$  or  $> 10$  are a problem (Field, 2018).



## Results

In table 1 all variables are presented that are used for the regression analyses. After taking out all the missing values for ensuring all the variables have the same amount of respondents the final sample consists of 2732 respondents. For age, the group of 55-64 years old (20,7%) and 45-54 years old (19,9%) was the highest in the total respondent group meaning that most of the respondents were aged between 45 and 64 years old. Most of the respondents conducted a middle educational level (40,1%), which stands for upper secondary havo or vwo, mbo-2, mbo-3 and mbo-4. Low (30,5%) and high (29,4%) educational degrees were almost equally distributed; with low educational degrees being slightly more represented.

	Min	Max	Mean or %	SD
Mental-wellbeing	1.00	6.00	4.65	.88
Social support	1.00	5.00	4.28	.88
Physical impairment	1.00	5.00	1.56	.96
Age 18-24 (reference)			6,8%	
Age 25-34			10,8%	
Age 35-44			12,9%	
Age 45-54			19,9%	
Age 55-64			20,7%	
Age 65-74			17,2%	
Age 75+			11,7%	
Low education (reference)			30,5%	
Middle education			40,1%	
High Education			29,4%	
Gender (women)			53%	
n = 2732				

Table 1: Descriptive statistics

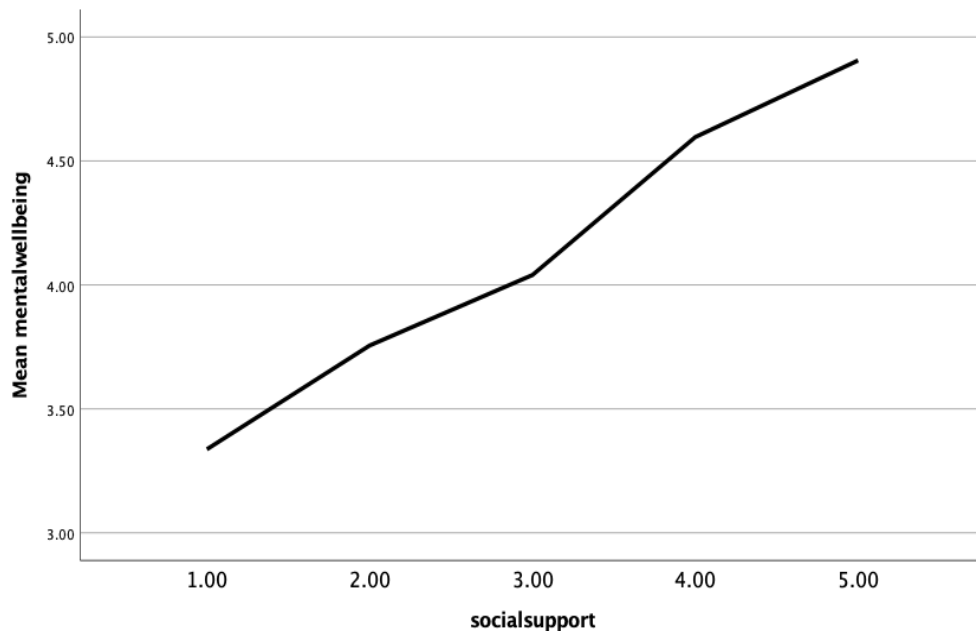
Most respondents didn't have severe physical impairments. The mean score was 1.56 which means most close to 'none' and 'almost none' physical impairment (min = 1, max = 5, SD = .96). For gender the mean lies almost in the middle with slightly more women (53%) in the sample (mean = .53, min = 0, max = 1, SD = .50). With regards to the dependent variable mental-wellbeing the mean is 4.65 which is quite high, meaning that in general respondents scored quite high on mental-wellbeing (mean = 4.65, min = 1, max = 6, SD = .88). Lastly, for the independent variable of experienced social support the mean is slightly lower than the depended variable (mean = 4.28, min = 1, max = 6, SD = .88). This indicates that overall, respondents experience relatively high levels of social support from others.

To examine the relationship between social support and mental well-being multiple regression analyses have been conducted. Table 2 shows all variables that are taken into account for measuring the correlation between social support on mental-wellbeing moderated by gender and age – and includes also all control variables. Three different analyses were conducted which are presented in table 2 as model 1, 2 and 3. The first model shows the total relation between social support (IV) and mental-wellbeing (DV) ( $R^2 = .152$ ,  $F = 491.091$ ,  $p < .001$ ). The unstandardized coefficient for the variable social support is positive and significant ( $B = .389$ ,  $p < .001$ ). This means that a one unit increase in social support predicts an increase by .389 in mental well-being. The bivariate relation between social support and mental well-being, without the control variables, is given in figure 3.

When including all control variables for model 2 (age, gender, education level and level of physical impairment), the overall explained variance increases to 22,3%. This means that the variables age, gender, education level and level of physical impairment add some of the explained variance in relation to mental-wellbeing ( $R^2 = .223$ ,  $F = 72.344$ ,  $p < .001$ ). Compared to the first model the unstandardized coefficient of social support slightly decreases when adding all other control variables ( $B = .374$ ,  $p < .001$ ). By adding the control variables the direct relation between social support and mental well-being can be measured, that is, the relation between the IV and DP with taking into account possible confounds. Based on these findings we can verify the first hypothesis that stated that higher levels of experienced social support will have a positive significant effect on one's mental-wellbeing measured. In other words, the more social support one receives the higher levels of mental-wellbeing are.

This is in line with the Buffer theory by Alloway & Bebbington (1987) that was discussed in the theory section, and the study Done by Kong et al. (2013) that showed the beneficial connection of social support to increased self-esteem and more life satisfaction.

With regard to the control variables, the level of physical impairment has a significant negative effect on mental-wellbeing ( $B = -.199, p = < .001$ ). This means that people with physical impairments have overall lower levels of mental-wellbeing than people without some kind of physical impairments. These findings are in line with many research papers that focused on the effects of some kind of physical impairment (Cho et al., 2011; Hawker, 2011). The factor age has a positive significant effect on mental-wellbeing compared to the reference group (aged 18 to 24 years old) - except for the age group of 25-34 years ( $B = .047, p = > .05$ ). I.e., age showed a positive significant main effect on mental well-being in 5 out of 6 age categories. The older respondents are, the stronger the effect becomes. I.e., with each increase in age group, the effect increases. The strongest effect can be found for respondents aging 75+ this effect is the strongest ( $B = .436, p = < .001$ ). Respectively, people aged between 65 and 74 ( $B = .389, p = < .001$ ), aging between 55-64 ( $B = .240, p = < .001$ ), aging 45-54 ( $B = .194, p = < .05$ ), and those with the age between 35 and 44 years old ( $B = .143, p = < .05$ ). This is consistent with research done on the sense of coherence and psychological well-being, which has shown that a large proportion of individuals experience age as a function of mental well-being (Nilsson, 2009). Note that these findings can be seen as valuable, but are main effects and don't say anything about a possible interaction effect of these variables (that is; if the relation of social support on mental well-being is different for these specific groups or not). When looking at gender, model two shows that this factor has a negatively significant effect. In general, this means that women have lower levels of mental-wellbeing compared to men ( $B = -.253, p = < .001$ ). A reason for this could be that women tend to report lower on self-reported questionnaires than men. A comparative study conducted by Merrill et al. (1997) which looked at self-reported and observed measures with regard to disability stated that more men than women generally underreported disability and more women overreported it. Lastly, neither middle or high educational level has a significant effect on mental-wellbeing: middle educational level ( $B = .011, p = > .05$ ) and high educational level ( $B = .036, p = > .05$ ).



*Figure 3: Distribution of mean mental-wellbeing by the level of social support*

Model three addresses the effect of social support on mental-wellbeing moderated by gender and age. The model is significant and explained slightly more variance (23%) than model two ( $R^2 = .230$ ,  $F = 46.420$ ,  $p = < .001$ ). First, the interaction effect of social support and gender was computed to test whether the relation between social support and mental-wellbeing differs for men and women. The results show that there was no significant interaction effect ( $B = -.041$ ,  $p = > .05$ ). Therefrom the second hypothesis can be rejected, which stated that the positive relation between experienced social support and one's mental-wellbeing would be stronger for women than for men. For the interaction effect between social support and mental well-being moderated by age, for each age category an interaction term is being computed. Again, no significant moderation effect for the factor of age has been found. Based on this, no support for the third hypothesis can be found, which stated that the positive relation between experienced social support and one's mental-wellbeing would be stronger for respondents of higher ages.

	Model 1		Model 2		Model 3	
	B	SE	B	SE	B	SE
Constant	2.986***	.077	3.247***	.105	3.457***	.460
Social support	.389***	.018	.374***	.017	.331***	.099
Age 25-34			.047	.074	-.766	.532
Age 35-44			.143**	.072	-.653	.499
Age 45-54			.194**	.067	-.460	.479
Age 55-64			.249***	.067	.093	.481
Age 65-74			.389***	.069	.337	.486
Age 75+			.436***	.076	.779	.490
Gender (women)			-.253***	.030	-.075	.147
MiddleEducation			.011	.037	.005	.037
HighEducation			.036	.041	.022	.041
Physicalimpairment			-.199***	.017	-.201***	.017
Social support x gender					-.041	.034
Social support x age 25-34					.180	.115
Social support x age 35-44					.180	.109
Social support x age 45-54					.149	.104
Social support x age 55-64					.032	.105
Social support x age 65-74					.006	.106
Social support x age 75+					-.088	.107
R <sup>2</sup>	.152		.223		.230	
F	491.091***		72.344***		46.420***	

\*\* p < .05 \*\*\* p < .001

*Table 2: Multivariate regression analyses for variables predicting the level of mental-wellbeing*

In summary, this study has found support for the first hypothesis. That is, social support has a significant positive effect on one's mental-wellbeing. However, with regards to the second and third hypothesis no support has been found – which means that neither age or gender influence the relation of social support on mental-wellbeing significantly.

## ***Discussion***

This study has analyzed the effect of experienced social support on one's mental well-being in the Netherlands and thereby taking age and gender into account as a moderator. Several issues underlie the relevance of this study. The central descriptive research question of this study was; *to what extent does experienced social support influence mental well-being in the Netherlands?* As mentioned before, the health care sector (including mental health) is under huge pressure because of the shortage of staff and increasing demand for mental health care (Hardeman, 2022; Inspectie Gezondheidszorg en Jeugd, 2021). While this study has been conducted in 2022 with data from before Covid-19, many studies have shown that the Covid-19 crisis with all its consequences has a serious impact on people's mental well-being – especially those of young people (Nuijen et al., 2021). The hypotheses were derived from theories such as the Buffer theory from Alloway & Bebbington (1987) and other more recent studies done on the effects of social support.

Findings have shown that the experienced social support one receives has a great effect on that person's mental well-being. The finding that people with higher levels of experienced social support score high on mental well-being, support the first hypothesis that was derived. With regards to the moderation effects that were being examined, no support has been found support that suggests that age or gender affects the relation between experienced social support and mental well-being. With these findings, the explanatory research question has been answered. Nevertheless, this study has shown that for both age and gender there are significant main effects. The older people get, the higher they score on mental well-being, indicating that age has a positive (main) effect on one's mental well-being. Also, in general, women tend to score lower than men on the level of mental well-being. By adding several control variables for the analysis we found that the level of psychical impairment one has, harms that person's mental well-being. To state this in general, those who suffer from physical impairments often also experience adverse effects on their mental well-being. These results indicate the importance of social support and other factors on mental well-being. In times where a huge emphasis is placed by government and municipalities on one's 'own strength' and 'network', this study has shown that those experiencing high levels of social support from their informal network (family or friends) are better off when it comes to mental well-being.

Receiving support social from others could encounter the growing waiting lists in mental healthcare since it has a positive influence on people's mental health and well-being. Research done on the relation between social support and mental health services showed that those with smaller social network and less social support were associated with more use of mental health services (Maulik et al., 2009). We found certain groups (such as young adolescents, women, and those suffering from physical impairment) tend to have worse mental well-being than others. For these groups it's especially important to pay attention one, whether it is by helping them to set up their own supportive (informal) network – or when necessary, supporting them with professional mental health services. When it comes to professional mental health services, a supportive social network can also play a role in encouraging one to seek out for help (Vogel et al., 2007).

This research was conducted based on a national survey from CBS and CPB and comes with some strong and weaker points. Firstly, the total group of respondents used for the analysis is quite high ( $n = 2775$ ), with the final sample consisting of 2732 respondents. The sample size is one of the crucial elements of a research design that has a significant effect on the validity and relevance of the findings identified by a research study (Burmeister & Leanne, 2012). For measuring the DV of mental well-being 7 questions were being used which had excellent reliability ( $\alpha = .907$ ). It should be added that for the IV of social support only one 5-point Likert statement is being used – which can be seen as a primary limitation. In addition, the variables of age and educational level consisted of ordinal values – which resulted in making different dummy variables for each category. Also, for the variables of social support, mental well-being and level of physical impairment Likert scales are being used. Using Likert scales as interval variables is under debate – and when doing it's advised to use at least 11-point Likert scales from 0 to 10 (Wu & Leung, 2017). Follow-up research is advised to take cultural differences, and differences between countries into account. It would be interesting to investigate whether and in what kind of cultures, the relation between social support and mental well-being is different compared to other cultures. Also, conducting more intergenerational research (that is; comparing different age generations) would contribute to the body of knowledge, since there are not many studies that focused on it. This study has lacked looking at different forms of social support such as, instrumental, informational and companionate (Gottlieb & Bergen, 2010). Future research could contribute to the body of knowledge by including these different forms of social support in their analysis and exploring possible correlations with specific groups of people (e.g. women, those with a physical impairment, or specific age groups).

## ***Policy advice***

The policy question; *which steps can be taken by municipalities to enhance social support among their citizens?* has been formulated to give local government (municipalities) advice concerning the outcomes of this study. This study has shown to what extent social support influences one's mental well-being – and thereby emphasizing its importance. Based on the findings we would suggest that municipalities pay specific attention to vulnerable groups such as women, people with some kind of physical impairment, or younger adolescents. As stated before, a lot of emphases is placed on people's social and supportive networks by government and municipalities. Primary initiatives (e.g. accessible for everyone, without an indication) that can informally support people by building a social network should be encouraged by municipalities. For example, initiatives such as Buurtcirkel can play an important role in this (Buurtcirkel, n.d.). These sorts of initiatives bring vulnerable people together so that they can meet each other, do social activities or help each other out with some small help request. Meetings are usually supervised by a professional, but have the goal the eventually organizing the meetings and activities by the people themselves. Also, being involved in a community usually is associated with good social support; so people are willing to interact with each other for mutual help (Liang et al., 2011). Initiatives that can enhance this community feeling such as associations and clubs should be supported and encouraged by the local municipality. Many of these clubs, for example, sports clubs also have a direct effect on mental well-being since they are working on their psychical health – which influences mental health and well-being (Cho et al., 2011; Hawker, 2011). For municipalities, it can have financial benefits when people are more capable of managing their life with support from the community and informal social support – and for people in general it can be a sustainable way of coping with negative life events.



## References

- Alloway, R., & Bebbington, P. (1987). The buffer theory of social support – a review of the literature. *Psychological Medicine*, 17(1), 91–108.  
<https://doi.org/10.1017/s0033291700013015>
- Araya, R. (2003). Education and income: which is more important for mental health? *Journal of Epidemiology & Community Health*, 57(7), 501–505.  
<https://doi.org/10.1136/jech.57.7.501>
- Barbee, A. P., Gulley, M. R., & Cunningham, M. R. (1990). Support Seeking in Personal Relationships. *Journal of Social and Personal Relationships*, 7(4), 531–540.  
<https://doi.org/10.1177/0265407590074009>
- Belo, P., Navarro-Pardo, E., Pocinho, R., Carrana, P., & Margarido, C. (2020). Relationship Between Mental Health and the Education Level in Elderly People: Mediation of Leisure Attitude. *Frontiers in Psychology*, 11.  
<https://doi.org/10.3389/fpsyg.2020.00573>
- Buurtcirkel voor elkaar. (z.d.). *Over Buurtcirkel*. <https://buurtcirkel.nl/over-buurtcirkel/>
- Burmeister, E., & Aitken, L. M. (2012). Sample size: How many is enough? *Australian Critical Care*, 25(4), 271–274. <https://doi.org/10.1016/j.aucc.2012.07.002>
- Carstensen, L. L. (2006). The Influence of a Sense of Time on Human Development. *Science*, 312(5782), 1913–1915. <https://doi.org/10.1126/science.1127488>
- Cheng, S. T., & Chan, A. C. (2004). The multidimensional scale of perceived social support: dimensionality and age and gender differences in adolescents. *Personality and Individual Differences*, 37(7), 1359–1369. <https://doi.org/10.1016/j.paid.2004.01.006>
- Cho, J., Martin, P., Margrett, J., MacDonald, M., & Poon, L. W. (2011). The Relationship between Physical Health and Psychological Well-Being among Oldest-Old Adults. *Journal of Aging Research*, 2011, 1–8. <https://doi.org/10.4061/2011/605041>
- Ciarrochi, J., Deane, F. P., & Anderson, S. (2002). Emotional intelligence moderates the relationship between stress and mental health. *Personality and Individual Differences*, 32(2), 197–209. [https://doi.org/10.1016/s0191-8869\(01\)00012-5](https://doi.org/10.1016/s0191-8869(01)00012-5)
- Chu, P. S., Saucier, D. A., & Hafner, E. (2010). Meta-Analysis of the Relationships Between Social Support and Well-Being in Children and Adolescents. *Journal of Social and Clinical Psychology*, 29(6), 624–645. <https://doi.org/10.1521/jscp.2010.29.6.624>

- Denton, K., & Zarbatany, L. (1996). Age Differences in Support Processes in Conversations between Friends. *Child Development*, 67(4), 1360. <https://doi.org/10.2307/1131705>
- Elmer, T., Mepham, K., & Stadtfeld, C. (2020). Students under lockdown: Comparisons of students' social networks and mental health before and during the COVID-19 crisis in Switzerland. *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0236337>
- Dalgard, O. S., Björk, S., & Tambs, K. (1995). Social Support, Negative Life Events and Mental Health. *British Journal of Psychiatry*, 166(1), 29–34. <https://doi.org/10.1192/bjp.166.1.29>
- Dalgard, O. S., Dowrick, C., Lehtinen, V., Vazquez-Barquero, J. L., Casey, P., Wilkinson, G., Ayuso-Mateos, J. L., Page, H., & Dunn, G. (2006). Negative life events, social support and gender difference in depression. *Social Psychiatry and Psychiatric Epidemiology*, 41(6), 444–451. <https://doi.org/10.1007/s00127-006-0051-5>
- Fatima, S., Sharif, S., & Khalid, I. (2018). How does religiosity enhance psychological well-being? Roles of self-efficacy and perceived social support. *Psychology of Religion and Spirituality*, 10(2), 119–127. <https://doi.org/10.1037/rel0000168>
- Fasihi Harandi, T., Mohammad Taghinasab, M., & Dehghan Nayeri, T. (2017). The correlation of social support with mental health: A meta-analysis. *Electronic Physician*, 9(9), 5212–5222. <https://doi.org/10.19082/5212>
- Fegert, J. M., Vitiello, B., Plener, P. L., & Clemens, V. (2020b). Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality. *Child and Adolescent Psychiatry and Mental Health*, 14(1). <https://doi.org/10.1186/s13034-020-00329-3>
- Field, A. (2018). *Discovering Statistics Using IBM SPSS Statistics*. SAGE Publications.
- Folkman, S., & Lazarus, R. S. (1980). An Analysis of Coping in a Middle-Aged Community Sample. *Journal of Health and Social Behavior*, 21(3), 223. <https://doi.org/10.2307/2136617>
- Foverskov, E., Glymour, M. M., Mortensen, E. L., Holm, A., Lange, T., & Lund, R. (2018). Education and Cognitive Aging: Accounting for Selection and Confounding in Linkage of Data From the Danish Registry and Survey of Health, Ageing and Retirement in Europe. *American Journal of Epidemiology*, 187(11), 2423–2430. <https://doi.org/10.1093/aje/kwy162>

- Gottlieb, B. H., & Bergen, A. E. (2010). Social support concepts and measures. *Journal of Psychosomatic Research*, 69(5), 511–520.  
<https://doi.org/10.1016/j.jpsychores.2009.10.001>
- Gilissen, R. (2022, January 14). *Meer suïcides onder jongvolwassenen tussen 20 en 30 jaar*. 113 Zelfmoordpreventie. <https://www.113.nl/actueel/meer-suïcides-onder-jongvolwassenen-tussen-20-en-30-jaar>
- Hawker, C. L. (2012). Physical activity and mental well-being in student nurses. *Nurse Education Today*, 32(3), 325–331. <https://doi.org/10.1016/j.nedt.2011.07.013>
- Hardeman, E. (2022). “Zorg voor betere aansluiting master op de gz-opleiding”. *GZ - Psychologie*, 14(1), 6–11. <https://doi.org/10.1007/s41480-022-0871-2>
- Hefner, J., & Eisenberg, D. (2009b). Social support and mental health among college students. *American Journal of Orthopsychiatry*, 79(4), 491–499.  
<https://doi.org/10.1037/a0016918>
- Holmes, E. A., O’Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., Ballard, C., Christensen, H., Cohen Silver, R., Everall, I., Ford, T., John, A., Kabir, T., King, K., Madan, I., Michie, S., Przybylski, A. K., Shafran, R., Sweeney, A. Bullmore, E. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *The Lancet Psychiatry*, 7(6), 547–560.  
[https://doi.org/10.1016/s2215-0366\(20\)30168-1](https://doi.org/10.1016/s2215-0366(20)30168-1)
- Kave, G., Shrira, A., Palgi, Y., Spalter, T., Ben-Ezra, M., & Shmotkin, D. (2012). Formal Education Level Versus Self-Rated Literacy as Predictors of Cognitive Aging. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 67(6), 697–704. <https://doi.org/10.1093/geronb/gbs031>
- Kerres Malecki, C., & Kilpatrick Demary, M. (2001). Measuring perceived social support: Development of the child and adolescent social support scale (CASSS). *Psychology in the Schools*, 39(1), 1–18. <https://doi.org/10.1002/pits.10004>
- Kong, F., Zhao, J., & You, X. (2012). Self-Esteem as Mediator and Moderator of the Relationship Between Social Support and Subjective Well-Being Among Chinese University Students. *Social Indicators Research*, 112(1), 151–161.  
<https://doi.org/10.1007/s11205-012-0044-6>
- Krause, N. (2005). Exploring age differences in the stress-buffering function of social support. *Psychology and Aging*, 20(4), 714–717. <https://doi.org/10.1037/0882-7974.20.4.714>

- Klineberg, E., Clark, C., Bhui, K. S., Haines, M. M., Viner, R. M., Head, J., Woodley-Jones, D., & Stansfeld, S. A. (2006). Social support, ethnicity and mental health in adolescents. *Social Psychiatry and Psychiatric Epidemiology*, 41(9), 755–760.  
<https://doi.org/10.1007/s00127-006-0093-8>
- Lazarus, R. S., & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personality*, 1(3), 141–169.  
<https://doi.org/10.1002/per.2410010304>
- Lakey, B., & Orehek, E. (2011). Relational regulation theory: A new approach to explain the link between perceived social support and mental health. *Psychological Review*, 118(3), 482–495. <https://doi.org/10.1037/a0023477>
- Lee, J. S., Koeske, G. F., & Sales, E. (2004). Social support buffering of acculturative stress: a study of mental health symptoms among Korean international students. *International Journal of Intercultural Relations*, 28(5), 399–414.  
<https://doi.org/10.1016/j.ijintrel.2004.08.005>
- Liang, T. P., Ho, Y. T., Li, Y. W., & Turban, E. (2011). What Drives Social Commerce: The Role of Social Support and Relationship Quality. *International Journal of Electronic Commerce*, 16(2), 69–90. <https://doi.org/10.2753/jec1086-4415160204>
- Maulik, P. K., Eaton, W. W., & Bradshaw, C. P. (2009). The Role of Social Network and Support in Mental Health Service Use: Findings From the Baltimore ECA Study. *Psychiatric Services*, 60(9), 1222–1229.  
<https://doi.org/10.1176/ps.2009.60.9.1222>
- McDonald, K. (2018). Social Support and Mental Health in LGBTQ Adolescents: *A review of the literature*. *Issues in Mental Health Nursing*, 39(1), 16–29.  
<https://doi.org/10.1080/01612840.2017.1398283>
- Merrill, S. S., Seeman, T. E., Kasl, S. V., & Berkman, L. F. (1997). Gender Differences in the Comparison of Self-Reported Disability and Performance Measures. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 52A(1), M19–M26.  
<https://doi.org/10.1093/gerona/52a.1.m19>
- Mo, P. K., Chan, V. W., Chan, S. W., & Lau, J. T. (2018). The role of social support on emotion dysregulation and Internet addiction among Chinese adolescents: A structural equation model. *Addictive Behaviors*, 82, 86–93.  
<https://doi.org/10.1016/j.addbeh.2018.01.027>

- Moreno, C., Wykes, T., Galderisi, S., Nordentoft, M., Crossley, N., Jones, N., Cannon, M., Correll, C. U., Byrne, L., Carr, S., Chen, E. Y. H., Gorwood, P., Johnson, S., Kärkkäinen, H., Krystal, J. H., Lee, J., Lieberman, J., López-Jaramillo, C., Männikkö, M. Arango, C. (2020). How mental health care should change as a consequence of the COVID-19 pandemic. *The Lancet Psychiatry*, 7(9), 813–824.  
[https://doi.org/10.1016/s2215-0366\(20\)30307-2](https://doi.org/10.1016/s2215-0366(20)30307-2)
- Mitchell, I., Evans, L., Rees, T., & Hardy, L. (2013). Stressors, social support, and tests of the buffering hypothesis: Effects on psychological responses of injured athletes. *British Journal of Health Psychology*, 19(3), 486–508. <https://doi.org/10.1111/bjhp.12046>
- Ministerie van Volksgezondheid, Welzijn en Sport. (2022, January 6). *Social Support Act (Wmo 2015)*. Care and Support at Home | Government.nl.  
<https://www.government.nl/topics/care-and-support-at-home/social-support-act-wmo>
- Ministerie van Volksgezondheid, Welzijn en Sport. (2022, February 3). *Toezicht op aanpak wachttijden geestelijke gezondheidszorg (ggz)*. Geestelijke gezondheidszorg | Inspectie Gezondheidszorg en Jeugd. <https://www.igi.nl/zorgsectoren/geestelijke-gezondheidszorg/wachttijden-in-de-ggz>
- Nederlandse Zorgautoriteit (NZa). (2022, January). *Informatiekaart Wachttijden ggz 2021*.  
[https://puc.overheid.nl/nza/doc/PUC\\_648825\\_22/1/](https://puc.overheid.nl/nza/doc/PUC_648825_22/1/)
- Nilsson, K. W., Leppert, J., Simonsson, B., & Starrin, B. (2009). Sense of coherence and psychological well-being: improvement with age. *Journal of Epidemiology & Community Health*, 64(4), 347–352. <https://doi.org/10.1136/jech.2008.081174>
- Nuijen, J., Dopmeijer, J.M., Busch, M.C.M., Tak, N.I. (2021). *Monitor Mentale gezondheid en Middelengebruik Studenten hoger onderwijs*. RIVM, Trimbos-instituut en GGD GHOR Nederland. <https://www.trimbos.nl/aanbod/webwinkel/af1955-monitor-mentale-gezondheid-en-middelengebruik-studenten-hoger-onderwijs/>
- O'Connor, R. C., Wetherall, K., Cleare, S., McClelland, H., Melson, A. J., Niedzwiedz, C. L., O'Carroll, R. E., O'Connor, D. B., Platt, S., Scowcroft, E., Watson, B., Zortea, T., Ferguson, E., & Robb, K. A. (2020). Mental health and well-being during the COVID-19 pandemic: longitudinal analyses of adults in the UK COVID-19 Mental Health & Wellbeing study. *The British Journal of Psychiatry*, 218(6), 326–333.  
<https://doi.org/10.1192/bjp.2020.212>

- Punton, G., Dodd, A. L., & McNeill, A. (2022b). 'You're on the waiting list': An interpretive phenomenological analysis of young adults' experiences of waiting lists within mental health services in the UK. *PLOS ONE*, *17*(3), e0265542.  
<https://doi.org/10.1371/journal.pone.0265542>
- Roeleveld, E., Remmelink, L., Huber, M., Dessain, L. (2014, January). *Op Eigen Kracht*. Hogeschool van Amsterdam, Lectoraat Outreachend werken en innoveren.  
[https://www.hva.nl/binaries/content/assets/subsites/wmo/op-eigen-kracht-vooronderzoek-tbv-fort-k-maart-2014\\_definitieve-versie\\_aug.pdf](https://www.hva.nl/binaries/content/assets/subsites/wmo/op-eigen-kracht-vooronderzoek-tbv-fort-k-maart-2014_definitieve-versie_aug.pdf)
- Rueger, S. Y., Malecki, C. K., & Demaray, M. K. (2008). Relationship Between Multiple Sources of Perceived Social Support and Psychological and Academic Adjustment in Early Adolescence: Comparisons Across Gender. *Journal of Youth and Adolescence*, *39*(1), 47–61. <https://doi.org/10.1007/s10964-008-9368-6>
- Reevy, G., Maslach, C., 2001. *Use of social support: gender and personality differences*. *Sex. Roles* *44*, 437e459.
- Song, L., Son, J., & Lin, N. (2011). Social support. *The SAGE handbook of social network analysis*, *9*, 116-128.
- Silverstein, M., Conroy, S. J., Wang, H., Giarrusso, R., & Bengtson, V. L. (2002). Reciprocity in Parent-Child Relations Over the Adult Life Course. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *57*(1), S3–S13.  
<https://doi.org/10.1093/geronb/57.1.s3>
- Suurmeijer, T. P., Doeglas, D. M., Briançon, S., Krijnen, W. P., Krol, B., Sanderman, R., Moum, T., Bjelle, A., & Van den Heuvel, W. J. (1995). The measurement of social support in the 'European research on incapacitating diseases and social support': The development of the Social Support Questionnaire for Transactions (SSQT). *Social Science & Medicine*, *40*(9), 1221–1229.  
[https://doi.org/10.1016/0277-9536\(94\)00253-p](https://doi.org/10.1016/0277-9536(94)00253-p)
- Shumaker, S. A., & Brownell, A. (1984). Toward a Theory of Social Support: Closing Conceptual Gaps. *Journal of Social Issues*, *40*(4), 11–36.  
<https://doi.org/10.1111/j.1540-4560.1984.tb01105.x>
- Talevi, D., Soggi, V., Carai, M., Carnaghi, G., Faleri, S., Trebbi, E., De Bernardo, A., Capelli, F., Pacitti, F. Mental health outcomes of the CoViD-19 pandemic. *Rivista di psichiatria*. <http://dx.doi.org/10.1708/3382.33569>
- Taylor, S. E. (2011). Social support: A review. In H. S. Friedman (Ed.), *The Oxford handbook of health psychology* (pp. 189–214). Oxford University Press.

- Thoits, P. A. (2012). Self, Identity, Stress, and Mental Health. *Handbooks of Sociology and Social Research*, 357–377. [https://doi.org/10.1007/978-94-007-4276-5\\_18](https://doi.org/10.1007/978-94-007-4276-5_18)
- Tough, H., Siegrist, J. & Fekete, C. Social relationships, mental health and wellbeing in physical disability: a systematic review. *BMC Public Health* 17, 414 (2017). <https://doi.org/10.1186/s12889-017-4308-6>
- Trimbos-instituut. (2021, December 2). *Cijfers psychische gezondheid*. <https://www.trimbos.nl/kennis/cijfers/psychische-gezondheid-ggz/>
- Tsamakis, K., Tsiptsios, D., Ouranidis, A., Mueller, C., Schizas, D., Terniotis, C., Nikolakakis, N., Tyros, G., Kypouropoulos, S., Lazaris, A., Spandidos, D., Smyrnis, N., & Rizos, E. (2021). COVID-19 and its consequences on mental health (Review). *Experimental and Therapeutic Medicine*, 21(3). <https://doi.org/10.3892/etm.2021.9675>
- Torales, J., O’Higgins, M., Castaldelli-Maia, J. M., & Ventriglio, A. (2020b). The outbreak of COVID-19 coronavirus and its impact on global mental health. *International Journal of Social Psychiatry*, 66(4), 317–320. <https://doi.org/10.1177/0020764020915212>
- Vogel, D. L., Wade, N. G., Wester, S. R., Larson, L., & Hackler, A. H. (2007). Seeking help from a mental health professional: The influence of one’s social network. *Journal of Clinical Psychology*, 63(3), 233–245. <https://doi.org/10.1002/jclp.20345>
- Van Egmond, J. (2022, January 12). *Blijvende psychische schade dreigt voor studenten door lockdown*. Trouw. <https://www.trouw.nl/binnenland/blijvende-psychische-schade-dreigt-voor-studenten-door-lockdown~b26b6eb5/>
- Waarlo, N. (2021, 6 november). *Voorzitter GGZ over oplopende wachtlijsten: ‘Mentale gezondheid is niet alleen ons terrein’*. de Volkskrant. <https://www.volkskrant.nl/nieuws-achtergrond/voorzitter-ggz-over-oplopende-wachtlijsten-mentale-gezondheid-is-niet-alleen-ons-terrein~b5321150/>
- Wadsworth, M. E., & Achenbach, T. M. (2005). Explaining the Link Between Low Socioeconomic Status and Psychopathology: Testing Two Mechanisms of the Social Causation Hypothesis. *Journal of Consulting and Clinical Psychology*, 73(6), 1146–1153. <https://doi.org/10.1037/0022-006x.73.6.1146>
- Wu, H., & Leung, S. O. (2017). Can Likert Scales be Treated as Interval Scales?—A Simulation Study. *Journal of Social Service Research*, 43(4), 527–532. <https://doi.org/10.1080/01488376.2017.1329775>

## *Appendix (SPSS Syntax)*

```
DESCRIPTIVES GevZenuw GevPut GevSomb GevKalm GevSomb GevGeluk GevMoe  
GevEenz.
```

```
FREQUENCIES GevZenuw GevPut GevSomb GevKalm GevSomb GevGeluk GevMoe  
GevEenz.
```

```
DESCRIPTIVES BehFam.
```

```
FREQUENCIES BehFam.
```

```
DESCRIPTIVES kdr_Afl_MatBelem.
```

```
FREQUENCIES kdr_Afl_MatBelem.
```

\*Recode variable GevKalm and GevGeluk so that a low score stands for less mental-wellbeing.

```
RECODE GevKalm GevGeluk (1=6) (2=5) (3=4) (4=3) (5=2) (6=1) INTO rGevKaml  
rGevGeluk.
```

```
EXECUTE.
```

\*Checking the reliability i.e. Cronbach's alpha for all variables that form the variable of mental-wellbeing.

```
RELIABILITY
```

```
  /VARIABLES GevZenuw GevPut GevSomb rGevKaml GevSomb rGevGeluk GevMoe  
GevEenz
```

```
  /STATISTICS CORRELATIONS
```

```
  /SUMMARY TOTAL.
```



\*Compute the variable of mental-wellbeing based on the mean of all the variables.

```
COMPUTE mentalwellbeing = MEAN (GevZenuw, GevPut, GevSomb, rGevKaml,  
rGevGeluk, GevMoe, GevEenz).
```

```
EXECUTE.
```

```
DESCRIPTIVES mentalwellbeing.
```

```
FREQUENCIES mentalwellbeing.
```

\*Recode variable BehFam so that a low score stands for less social support.

```
RECODE BehFam (1=5) (2=4) (3=3) (4=2) (5=1) INTO socialsupport.
```

```
EXECUTE.
```

```
MISSING VALUES socialsupport (9).
```

```
DESCRIPTIVES socialsupport.
```

```
FREQUENCIES socialsupport.
```

```
DESCRIPTIVES Afl_Geslacht_OP.
```

```
FREQUENCIES Afl_Geslacht_OP.
```

\*Compute new dummy variable were 0 stands for 'men' and 1 'women'.

```
RECODE Afl_Geslacht_OP (1=0) (2=1) INTO gender.
```

```
VALUE LABELS gender 0 'men' 1 'women'.
```

```
DESCRIPTIVES gender.
```

```
FREQUENCIES gender.
```

\*Computing the variable of physical impairment and taking out the missings.

```
COMPUTE physicalimpairment = Sren2SCP.
```

```
EXECUTE.
```

```
DESCRIPTIVES physicalimpairment.
```

```
FREQUENCIES physicalimpairment.
```

```
MISSING VALUES physicalimpairment (9).
```

```
DESCRIPTIVES physicalimpairment.
```

```
FREQUENCIES physicalimpairment.
```

\*Adding the labels of the levels of physical impairment.

```
VALUE LABELS physicalimpairment 1 'none' 2 'almostnone' 3 'some' 4 'impaired' 5  
'severeimpaired'.
```

```
DESCRIPTIVES physicalimpairment.
```

```
FREQUENCIES physicalimpairment.
```

\*Computing the variable of level of education and taking out the missings.

```
COMPUTE educationlevel = Afl_OpleidingsniveauVoltooid.
```

```
EXECUTE.
```

```
RECODE educationlevel (1=1) (3=2) (4=3).
```

```
MISSING VALUES educationlevel (9).
```

```
DESCRIPTIVES educationlevel.
```

```
FREQUENCIES educationlevel.
```

\*Computing the variable of age.

```
COMPUTE age = Afl_Lft_OP.  
EXECUTE.
```

```
DESCRIPTIVES age.  
FREQUENCIES age.
```

\*Ensuring that all variables have the same n.

```
COMPUTE nomiss = nmiss (mentalwellbeing, socialsupport, educationallevel, age, gender,  
physicalimpairment) = 0.  
FILTER BY nomiss.
```

```
DESCRIPTIVES mentalwellbeing.  
DESCRIPTIVES socialsupport
```

```
VALUE LABELS educationallevel.
```

\*Adding the levels of education into three levels.

```
VALUE LABELS educationallevel 1'low' 2 'middle' 3 'high'.
```

```
DESCRIPTIVES educationallevel.  
FREQUENCIES educationallevel.  
DESCRIPTIVES physicalimpairment.  
DESCRIPTIVES gender.
```

```
DESCRIPTIVES mentalwellbeing.  
DESCRIPTIVES socialsupport.  
DESCRIPTIVES age.  
FREQUENCIES age.  
DESCRIPTIVES educationallevel.  
FREQUENCIES educationallevel.
```

DESCRIPTIVES physicalimpairment.

DESCRIPTIVES gender.

\*Making dummy variables for different levels of educational level.

RECODE educationlevel (2=1) (ELSE=0) INTO MiddleEducation.

EXECUTE.

RECODE educationlevel (3=1) (ELSE=0) INTO HighEducation.

EXECUTE.

\*Making dummy variables for different levels of age.

RECODE age (2=1) (ELSE=0) INTO Age25to34.

EXECUTE.

RECODE age (3=1) (ELSE=0) INTO Age35to44.

EXECUTE.

RECODE age (4=1) (ELSE=0) INTO Age45to54.

EXECUTE.

RECODE age (5=1) (ELSE=0) INTO Age55to64.

EXECUTE.

RECODE age (6=1) (ELSE=0) INTO Age65to74.

EXECUTE.

RECODE age (7=1) (ELSE=0) INTO Age75plus.

EXECUTE.

DESCRIPTIVES mentalwellbeing.

DESCRIPTIVES socialsupport.

DESCRIPTIVES Age25to34.

DESCRIPTIVESS Age35to44.

DESCRIPTIVES Age45to54.

DESCRIPTIVESS Age55to64.

DESCRIPTIVES Age65to74.

DESCRIPTIVES Age65to74.

DESCRIPTIVES Age75plus.  
DESCRIPTIVES MiddleEducation.  
DESCRIPTIVES HighEducation.  
DESCRIPTIVES physicalimpairment.  
DESCRIPTIVES gender.

#### GRAPH

/LINE(SIMPLE)=MEAN (mentalwellbeing) BY socialsupport.

\*Regression analysis model 1 for testing total effect.

#### REGRESSION

/DEPENDENT mentalwellbeing  
/METHOD ENTER socialsupport.

\*Regression analysis model 2 with control variables.

#### REGRESSION

/DEPENDENT mentalwellbeing  
/METHOD ENTER socialsupport Age25to34 Age35to44 Age45to54 Age55to64  
Age65to74 Age75plus gender MiddleEducation HighEducation physicalimpairment.

\*Computing interaction term.

COMPUTE socialsupportxgender = socialsupport\*gender.

\*Computing interaction terms.

COMPUTE socialsupportxAge25to34 = socialsupport\*Age25to34.  
COMPUTE socialsupportxAge35to44 = socialsupport\*Age35to44.  
COMPUTE socialsupportxAge45to54 = socialsupport\*Age45to54.  
COMPUTE socialsupportxAge55to64 = socialsupport\*Age55to64.  
COMPUTE socialsupportxAge65to74 = socialsupport\*Age65to74.  
COMPUTE socialsupportxAge75plus = socialsupport\*Age75plus.

\*Regression analysis model 3 with moderation effect.

REGRESSION

/DEPENDENT mentalwellbeing

/METHOD ENTER socialsupport Age25to34 Age35to44 Age45to54 Age55to64  
Age65to74 Age75plus gender MiddleEducation HighEducation physicalimpairment  
socialsupportxgender socialsupportxAge25to34 socialsupportxAge35to44  
socialsupportxAge45to54  
socialsupportxAge55to64 socialsupportxAge65to74 socialsupportxAge75plus.