The prevalence and predictors of flourishing among individuals with low, moderate, and high depressive symptoms

Nikka Golena

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1st Supervisor: Drossaert, Dr. C.H.C
2nd Supervisor: Lamers, Dr. S.M.A

University of Twente
Faculty of Behavioral Sciences
Psychology

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ABSTRACT

Flourishing describes a state where individuals are optimal functioning with high levels of emotional, psychological, and social well-being. Flourishing individuals show a better functioning in life and are even at a lower risk for developing mental illness. To the present day only a few studies has investigated the relation between the positive state of flourishing and mental illness, such as depression. The present study is one of the first which examine the prevalence of flourishing in people with low, moderate and high depressive symptoms and which factors are predictive for flourishing in each of these groups**.** The factors socio-demographics and personality were included in the current study. A representative sample of 1.804 Dutch adults from the Longitudinal Internet Studies for the Social sciences panel (LISS) was used. Respondents between the age of 16 and 87 years (M = 47.15) participated in this study. The level of flourishing was measured with the Mental Health Continuum-Short Form (MHC-SF). The level of depressive symptoms was measured with the Brief Symptom Inventory (BSI). Correlation and regression-analyses were made in order to identify associated factors for flourishing. The results show that 54.4% of the persons with low symptoms of depression fit the criteria for flourishing, 39.7% of the persons with moderate symptoms of depression fit the criteria for flourishing, and even 18.2% in the group with high symptoms of depression were flourishing. The results show associations between socio-demographics and flourishing in the group with moderate symptoms of depression. For persons with low and high symptoms of depression no significant findings were found. For personality weak associations were found for conscientiousness, in the group with low symptoms of depression, and for extraversion in the group with moderate symptoms of depression. In the group with high symptoms of depression no significant associations were found. Comparing to earlier studies, the present study found considerable more flourishers. Possible explanations can be found in different instrument use and in different populations. For the personality trait gender inconsistent findings were found across several studies. This underlines the importance for further research to find specific determinants for flourishing. Situational factors, cultural differences and social-economy advantages should be included in future studies. In general, more research is needed in the domain of positive mental health and well-being. Finally, a common use of an instrument to assess flourishing is recommended.

SAMENVATTING

Mensen, die floreren, tonen een optimaal functioneren en hoge niveaus van emotioneel, psychologisch, en sociaal welbevinden. Zij tonen tegelijkertijd een beter functioneren in hun leven en hebben minder last van mentale ziekten zoals depressie. Tot nu toe zijn er nog weinig studies verricht naar de relatie tussen floreren en mentale ziekten. De huidige studie kijkt naar de prevalentie van floreren bij mensen die last hebben van laag, gemiddeld, en hoge symptomen van depressie. Daarnaast worden in de huidige studie naar de voorspellende waarden van demografische factoren en persoonlijkheid gekeken. Er wordt een representatieve steekproef van 1.804 Nederlands volwassene hanteert. Deze hebben deelgenomen bij de Longitudonal Internet Studies for Social Sciences panel (LISS). De deelnemers zijn tussen 16 en 87 jaar oud (M = 47.15). Het niveau van floreren werd gemeten met behulp van de Mental Health Continuum- Short Form (MHC-SF). Het niveau van depressieve symptomen werd gemeten met behulp van de Brief Symptom Inventory (BSI). Om de voorspellende waarde van de demografische variabelen leeftijd, geslacht, leven in een relatie, en educatie te meten worden correlatie- en regressieanalysen gemaakt. De resultaten tonen aan dat 54.4% van de personen met lage symptomen van depressie floreren, 39.7% floreren van de personen met gemiddelde symptomen, en zelfs 18.2% van de personen die last hebben van hoge symptomen van depressie tonen aan te floreren. Verder zijn er correlaties gevonden tussen de demografische variabelen ‘een partner hebben’ en educatie voor de groep met gemiddelde symptomen van depressie. Voor de personen met lage of hoge symptomen van depressie werd er geen relatie gevonden. Persoonlijkheid toont een zwakke correlatie met floreren voor mensen met lage en gemiddelde symptomen van depressie. Er is een zwakke correlatie gevonden tussen de persoonlijkheidseigenschap vriendelijkheid (conscientiousness,) bij mensen met lage symptomen van depressie. Verder is er een correlatie gevonden voor de persoonlijkheidseigenschap extraversie en floreren bij mensen met gemiddelde symptomen van depressie. In de huidige studie zijn er opmerkelijk meer mensen gevonden die floreren dan in vroegere studies. Mogelijke verklaringen zijn te vinden in het instrumentengebruik om floreren te meten. Tot nu toe is er geen uniform instrumentengebruik om floreren te meten. Een ander verklaring heeft te maken met de populatie die gebruikt wordt in verschillende studies. Daarbij lijkt de afkomst van de populatie een groot rol te spelen in hoeverre iemand floreert of niet. Voor toekomstige studies wordt aanbevolen culturele achtergronden te benadrukken. Gebaseerd op vroegere studies lijken ook factoren zoals situationele- en sociaaleconomische factoren een belangrijke rol te spelen bij het onderzoek van floreren. Tot slot wordt er een uniform instrumentengebruik aanbevolen voor het meten van floreren.

INTRODUCTION

During the last decades the focus of psychology has shifted from an exclusive healing discipline to a discipline which also focuses on individual strengths, well-being, and the positive features that make life worth living (Seligman, 2011). A state of well-being and optimal functioning in life, also known as flourishing, represents the ultimate goal in positive psychology (see Keyes, 2002). Flourishing is defined as a state of high levels of well-being (Keyes, 2002). Several studies showed that flourishing individuals function better in life compared to individuals with lower levels of well-being, and are even shown to have a lower risk for suffering from mental illness or physical disease (Keyes, 2002, 2004; Keyes & Simoes, 2012). However, less is known about the effects of flourishing on specific types of mental illness, such as depression.

Most work on examining the effects of well-being on depression has focused on the relation between low levels of well-being and the occurrence of depression symptoms (Grant, Guille, & Sen, 2013; Wood & Joseph, 2010). The studies indicate that individuals with a low level of well-being are at substantially higher risk for developing depressive symptoms. These findings confirm the value of well-being for assessing and preventing depressive. Furthermore, Keyes (2002) found positive effects of flourishing on functioning in life, even for individuals who already suffer from depression. This is an interesting finding, because it shows that individuals with a depressive disorder are capable of experiencing high levels of well-being, despite of their mental illness. But what makes these people flourishing despite their mental illness? Subsequently, the aim of the present study is to examine associated factors which are responsible for flourishing among individuals with depressive symptoms. In the first step, the present study will investigate the prevalence of flourishing in individuals with depressive symptoms in order to examine how many individuals with high symptoms of depression are capable of flourishing. In this context, this study will compare individuals with low, moderate and high depressive symptoms. Secondly, in order to investigate determinants for flourishing among individuals with depression, the predictive value of socio-demographic factors and personality traits for flourishing will be included in the analysis.

Positive mental health

The understanding of mental health has changed enormously during the last decades. For a long time mental health care was mainly focused on the treatment of symptoms from mental illness (e.g. depression, general anxiety) (Seligman, 2011; Keyes, 2002; Lamers, 2012). Therefore, mental health was particularly associated with the absence of mental illness. However, the absence of symptoms from mental illness represents only a small part of mental health. Today, the World Health Organization (WHO, 2005, p. 2) defined mental health as ‘‘a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community’’. The focus lies here on the positive state of well-being which involves three core-components: (1) emotional well-

being, (2) psychological well-being, and (3) social well-being. These three core components of well-being are based on two traditions: *hedonism* and *eudaimonia* (Keyes, 2002; Ryan & Deci, 2001; Lamers, 2012). The hedonic tradition refers to positive feelings of happiness, satisfaction, and interest towards one's life, whereas the eudaimonic tradition focuses on optimal functioning of the individual in life and in society (Keyes, 2007).

Emotional well-being belongs to the hedonic tradition. It reflects the individual's perceptions and evaluations of their own lives in terms of their affective states (Keyes, 2002). According to the hedonic tradition emotional well-being includes the presence of positive affect (e.g. the individual is in good spirits), the absence of negative affect (e.g. individual is not hopeless) and the perceived satisfaction with one's own life (Keyes, 2002). Mental health is therefore increased by maximizing positive feelings of happiness and minimizing negative feelings. Psychological and social well-being belong to the eudaimonic tradition and reflect the extent to which an individual evaluates his functioning in life and in community. Within the eudaimonic tradition the empirical works of Ryff (1989) and Keyes (1998) has become the most influential. Ryff (1989) developed a model which includes six elements of psychological well-being. The six dimensions are defined as:

1. *Self-acceptance*: The acceptance of self and one's own life in present and in past.
2. *Positive relations with others*: Having warm, trusting, interpersonal relations with others.
3. *Autonomy*: The individual evaluates oneself by personal standards and does not look for others for approval.
4. *Environmental mastery*: The ability to choose or create an environment suitable to his or her own needs.
5. *Purpose in life*: Purposes or goals in life which give one the feeling that there is meaning to life.
6. *Personal growth*: The feeling to develop one's potentials, to expand and grow as a person.

Psychological well-being particularly focuses on optimal functioning in terms of subjective evaluations about life, whereas social well-being focuses on optimal functioning in society. Keyes (1998) has developed a model which refers to optimal functioning of the individual in terms of social functioning, social engagement and a positive attitude to society. Keyes (1998) defined five dimensions to reach optimal functioning in society:

1. *Social integration:* The feeling of being part of the society and to have something in common with the other members in the community.
2. *Social acceptance*: A positive attitude towards others in terms of thinking that other people are capable of kindness and industrious.
3. *Social contribution*: The belief of being a vital member of the society.
4. *Social coherence*: Understanding and perception of the quality, organization, and procedure of the social world.

Considering the three core-components of well-being, mental health can be best seen as a complete state involving of both the absence of mental illness and the presence of optimal levels of well-being (Keyes, 2002). Furthermore, positive mental health can be differentiated into three states: *flourishing*, *moderate mental health*, and *languishing* (Keyes, 2002).

Flourishing

Flourishing refers to a state where individuals are filled with high levels of positive emotions (emotional well-being), are functioning well psychologically (psychological well-being) and in society (social well-being) (Keyes, 2002). In contrast, languishing individuals are conceived of emptiness and stagnation, and describe themselves and life as "hollow", "empty", "as a shell", and "a void". Individuals who are neither flourishing nor languishing are considered to have a moderate mental health (Keyes, 2002). To flourish, individuals must show high levels on at least one of the measures of emotional well-being (positive affect and satisfaction with life), and at least on six levels of the 11 items of psychological and social functioning (see above). To languish, individuals must show low levels on at least one of the measures of emotional well-being, and at least on six of the 11 items of psychological and social well-being.

How is positive mental health related to mental illness? In order to examine this question, the *two continua model of mental health and mental illness* (Keyes, 2005) has been developed. In the traditional view of mental health, mental illness and mental health are conceived as two opposite ends of the same continuum. Thus, people who do not suffer from mental illness are assumed to have automatically an optimal mental health, and vice versa. However, the two continua model illustrates that mental health and mental illness represent two distinct but correlated axes. In practice, a correlation exists between high symptoms of mental illness and low scores on well-being. But this correlation is not perfect. An individual who suffers from mental illness could also have an increased positive mental health status at the same time, and vice versa. Therefore, the presence of psychopathology means not automatically a worse mental health. Conversely, the absence of mental illness does not guarantee optimal mental health. Empirical findings support the validity of the two continua model (Keyes, 2004, 2005; Westerhof & Keyes, 2008; Lamers, 2012).

The implications of flourishing and languishing for mental illness

The two continua model and further studies about the impact of flourishing (Keyes, 2002, 2004; Keyes, Shmotkin, & Ryff, 2002) underscore the effect of flourishing among people who suffer from mental illness like depression. Keyes (2002) examined in a representative study of 3.032 American adults the relation between mental health and depression. The results showed that the risk for major depression is two times higher among people who are languishing than among people with a moderate mental health. Further, the risk for a major depression is about 6 times higher among languishing individuals than among flourishing individuals. But most important, the level of mental

health status determines the level of functioning (missed work-days) among individuals who suffer from depression. Individuals with pure depression missed 1 work-day, while languishing individuals with a major depressive episode even missed 2.6 work-days. Individuals who had a combination of languishing and major depression showed the worst implications of missed work-days. Thus, a very low mental health status (languishing) is associated with a higher risk for major depression.

In a further study, Keyes (2004) examined the linkage between mental health status and the prevalence of cardiovascular diseases (CVD). Independent of mental health status, demographic variables of a high age and a low education increased the risk for CVD. However, the prevalence of CVD was lowest among individuals with a good mental health and highest among individuals with depression or among those with a low mental health status. Interestingly, adults who are languishing had the same prevalence of developing CVD as adults who had a major depression. Taken together, flourishers are less likely for developing mental illness or physical diseases like CVD compared to individuals with a moderate mental health or languishers. Languishers show the worst implications even compared with individuals who had pure depression. The questions arise: What promotes flourishing? And how can it be promoted for individuals with mental illness? Are individuals with high depressive symptoms capable of experiencing high levels of well-being, such as flourishing? In accordance to these questions, the following paragraphs illustrate previous findings about the prevalence of flourisher among individuals with a depressive disorder. Additionally, possible predictors that are associated to flourishing will be illustrated in the following paragraphs.

The prevalence of flourishing among individuals with a depressive disorder

Only one study could be found that examined the prevalence of flourishing among adults with depressive symptoms. Keyes (2002) investigated in a representative survey of 3.032 American adults the prevalence of flourishing, languishing, and moderate mental health among individuals with a major depressive disorder and individuals without depression. Of the respondents 14.1 % had a major depression, and 85.9 % did not have a depressive episode. The results showed that of the individuals without a depressive disorder 17.2% were flourishing and 12.1% were languishing in life. Of the individuals who had a depressive episode during the past year 13.1% had a moderate mental health, and even 4.9% were flourishing in life. These results confirm that individuals who suffer from depressive symptoms are capable of flourishing despite their mental illness.

Influencing factors of socio-demographics and personality

Numerous studies focused on the linkage between socio-demographics and subjective and psychological well-being (Diener et al., 1995; Veenhoven, 2008; Ryff & Singer, 2008; Diener & Ryan, 2009). The studies suggest a significant correlation between well-being and the socio-demographics gender, age, education, income, a paid employment, and marriage (Diener, et al. 1995; Veenhoven, 2008; Diener & Ryan, 2009). The studies illustrate that males, adults between 45 and 54 years, adults with a higher education (16 or more years) and married adults are more likely to flourish

compared to females, younger adults, lower educated, and unwedded adults (Keyes, 2002; Keyes & Simons, 2012). Regarding to individuals with depression, Keyes (2002) found a higher prevalence of poor mental health among females, adults between 25 and 54 years, lower educated adults (fewer than 11 years of education), and divorced individuals (Keyes, 2002).

Further, personality traits are shown to be an important predictor for flourishing. Numerous studies have shown a strong predictive value of personality traits related to subjective and psychological well-being (DeNeve & Cooper, 1998; Steel, Schmidt & Schultz, 2008; Kotov et al., 2010). Especially, low neuroticism, high extraversion, and high conscientiousness, are suggested to be positive related to subjective and psychological well-being (Keyes, Shmotkin, & Ryff, 2002). Steel, Schmidt & Schulz (2008) argued in a meta-analysis that personality traits have a much greater influence on the level of mental health of a person than it was previously assumed. The analysis shows that extraversion is accountable for approximately 19% of variance for positive affect, and neuroticism is even accountable for 29% of variance for negative affect. These findings confirm the importance of personality traits on well-being.

Research question and sub-questions

Considering the aim of the present study, the following research question has been developed: *What is the prevalence of flourishing in persons with low, moderate and high depressive symptoms, and can flourishing be predicted in each of these groups by socio-demographics and personality variables?*

In order to investigate the research question, the following sub-questions have been developed:

1) *What is the prevalence of flourishing among persons with low, moderate and high depressive symptoms?*

   Based on the findings it can be expected that among persons with low symptoms of mental illness more flourishers will be found than among individuals with moderate or high depressive symptoms. Expectations about the difference between the three groups are difficult to make because of the absence of earlier studies.

2) *To what extent are the socio-demographics gender, educational level, and living with a partner related to flourishing, and is this relation different for people with low, moderate, and high levels of depressive symptoms?*

   Based on the findings it can be expected that males, adults with a higher educational level, and adults who are living with a partner are more likely to flourish compared to females, adults with lower educational level, and alone living adults among individuals with low depressive symptoms. Expectations about the difference between the three groups are difficult because of the absence of earlier studies.

3) *To what extent are the personality traits extraversion, neuroticism, conscientiousness, agreeableness and openness to experience related to flourishing, and is this relation different for people with low, moderate, and high levels of depression?*

Based on the findings, it will be expected the personality traits extraversion and conscientiousness, are positively related to flourishing, whereas neuroticism is negatively related to flourishing.

METHOD

Procedure and participants

This study draws on data of the LISS (Longitudinal Internet Studies for the Social sciences) panel administered by CentERdata (Tilburg University, The Netherlands). The LISS panel is based on a random sample drawn from the population register in Netherlands. It consists of a representative sample of 5000 households, comprising 8000 individuals. Panel members are invited to complete online questionnaires every month and receive a small payment per hour time or for each completed questionnaire. For the current study data was extracted from two surveys. The first survey describes a module on positive mental health, consisting of two questionnaires: the Mental Health Continuum-Short Form (MHC-SF) to measure positive mental health, and the Brief Symptom Inventory (BSI) to screen psychopathology. The survey was conducted in December 2007. The second survey deals with the Big Five personality traits, consisting of the IPIP scale. The survey was conducted in August 2008. The overall response of both surveys was almost 78%. Information about the demographic characteristics of the participants was extracted from data from December 2007.

The present study consists of a representative sample of 1.804 Dutch respondents with an equivalent balance between males and females (50.7% females). Respondents between the age of 16 and 87 years (M = 47.15) participated in this study. Table 1 shows the descriptive results of the participants. Two-thirds of the participants are living in a relationship (70.2 %, n = 1266). The age groups (16-29, 30-49, 50-64, 65 +) and the educational categories (low, moderate, high) are approximately equally distributed.

Instruments

Flourishing

Flourishing was measured with the Dutch version of the Mental Health Continuum-Short Form (MHC-SF) (Keyes et al., 2008). The MHC-SF measures positive mental health by 14 items on three subscales: psychological well-being (6 items), emotional well-being (3 items), and social well-being (5 items). The respondents were asked to rate how often they had experienced each of the three subscales of well-being on a six-point Likert scale in the past month (1 = never; 2 = once or twice; 3 = about once a week; 4 = two or three times a week; 5 = almost every day; 6 = every day). Example

items are respectively: “During the past month, how often did you have the feeling...: …satisfied; …that our society is becoming a better place for people; …that you have expressed your own views and ideas with confidence?” Higher scores indicate higher levels of positive mental health. The MHC-SF has shown good internal reliability for the MHC-SF total as well for the three subscales of well-being (α = .78) (Keyes et al. 2008). A reliability analysis of data in the present study confirmed the internal consistency of the MHC-SF (α = .89).

Table 1. *Demographics of the participants (n = 1.804)*

Demographics	*n*	*%*
Age (*M* = 47.15)		
16-29	420	23.3
30-49	526	29.2
50-64	437	26.2
65+	385	21.3
Gender		
Male	889	49.3
Female	915	50.7
Lives with a Partner		
Yes	1266	70.2
No	538	29.8
Educational level		
Low	666	36.8
Moderate	601	33.3
High	537	29.7

For the classification of the respondents in ‘flourishing’ and ‘not flourishing’ the categorization from Keyes (2009) was used. The respondents were categorized as flourishing if at least one of the three items of the subscale emotional well-being was rated as “every day” (6) or “almost every day” (5), and at least six items of the eleven items scale of the subscales psychological well-being and social well-being were rated as “every day” (6) or “almost every day” (5). Respondents were coded as languishing if at least one of the three items of hedonic well-being scale was rated as “never” or “once or twice”, and at least six items of the eleven eudemonic scales were rated as “never” or “once or twice” in the past month. Individuals who are neither languishing nor flourishing were

coded as moderately mentally healthy. Respondents who were categorized as languishing or moderately mentally healthy were coded as 'not flourishing'.

Demographics

Demographics were presented by age, gender, education level, and if the respondent lives with a partner. In the last category, no differences were made between married or unmarried partnerships. Age was divided in four groups: 16-29, 30-49, 50-64, 65 and older. The educational level of the respondents was categorized in three groups: low (Primary school or Intermediate Secondary education degree), moderate (Higher secondary education or Intermediate vocational degree), and high (Higher vocational education or University).

Personality

Personality was measured with the International Personality Item Pool (IPIP) (Goldberg et al., 2006). The IPIP measures the Big Five personality traits: Extraversion, agreeableness, conscientiousness, emotional stability (reversed neuroticism), and openness to experience. The IPIP consists of 10 items per subscale, each item rated on a five-point Likert scale from 1 (totally disagree) to 5 (totally agree). For each personality trait a total score was computed (10 – 50). Example items are: "I am the life of the Party", "Get stressed easily", "I am interested in people." Higher scores indicate a higher degree of the personality trait.

The IPIP has shown good psychometric properties with a high internal consistency ($\alpha > .80$) (Lim & Ployhart, 2006). A reliability analysis of the data in the current study showed an internal consistency for extraversion ($\alpha = .86$), agreeableness ($\alpha = .81$), and emotional stability ($\alpha = .88$). The subscales conscientiousness ($\alpha = .78$) and openness to experience ($\alpha = .78$) showed acceptable internal consistency.

Depressive symptoms

The level of depressive symptoms was measured with the Brief Symptom Inventory (BSI) (Dutch version: de Beurs, 2009). The BSI represents the most commonly used instrument for screening and assessing psychopathology for adults, consisting of nine subscales which measure the nine dimensions of psychopathology: Depression, Anxiety, Phobic Anxiety, Interpersonal Sensitivity, Obsessive,-Compulsive Disorder, Hostility, Paranoid Ideation, Psychoticism, and Somatization.

In order to compare individuals with low, moderate and high depressive symptoms this study only used the responses from the subscale depression. The subscale depression consists of six items which examine the main depressive symptoms: suicidality, negative affect (e.g. hopeless, melancholy), and anhedonia (i.e. loss of interest). Respondents rated on a five-point Likert Scale to what extend they have suffered from following depressive symptoms in the past week: thoughts of suicide, feelings of loneliness, and feelings of melancholy. The average score of all symptoms were computed, whereby higher scores indicate higher levels of depressive symptoms. The Dutch version of the BSI

has shown high internal reliability (α > .80) (de Beurs, 2009). In the present study the internal reliability of the BSI could not be computed, because only the standardized scores were available.

For the present thesis, the responses of the subscale depression of the BSI were categorized in three groups: low, moderate, and high depressive symptoms. In the existing data from the LISS panel, the responses of the respondents were already divided in seven categories: 1. Very low; 2. Low; 3. Below average; 4. Average; 5. Above average; 6. High; and 7. Very high. Based on this classification, the categorization for the present study was made as follows. For the first category the scores of (1) very low, (2) low, and (3) below average depressive symptoms were summarized as 'low depressive symptoms'. For the second category the scores of (4) average, and (5) above average depressive symptoms were summarized as 'moderate depressive symptoms'. For the last category the scores of (6) high and (7) very high depressive symptoms were summarized as 'high depressive symptoms'.

Statistical Analysis

For the analysis the program Statistical Program for Social Sciences (SPSS) version 22.0 was used. Firstly, cross-tabs between 'the level of depressive symptoms (low, moderate, high) and the dummy variable 'flourishing' were computed in order to examine the presence of flourishing in each category of depressive symptoms. Respondents who were categorized as languishing or moderately mentally healthy were coded as 'not flourishing'. Secondly, the prevalence and associations between demographics and the dummy variable flourishing were computed by using cross-tabs. Further, in order to investigate the association between personality and flourishing, a Spearman's Rho correlation between personality and the dummy variable flourishing were conducted. Finally to investigate the predictors of flourishing a set of logistic regression analyses were conducted to examine the associations of gender, age, educational level, marital status, and personality with the dummy variable flourishing in each category of depressive symptoms.

RESULTS

Table 2 presents the prevalence estimates and the association between flourishing and the level of depressive symptoms. In the first hypothesis it was expected that among persons with low symptoms of mental illness more flourishers will be found than among individuals with moderate or high depressive symptoms. The results show a significant association between flourishing and the level of depressive symptoms. In line with the first hypothesis most of the flourishers can be found in the group with low symptoms of depression (54.4 %). Of the persons with moderate depressive symptoms 39.7 % fit the criteria for flourishing, and 18.2 % of the persons in the group with high depressive symptoms fit the criteria for flourishing.

Table 2. *The prevalence estimated and associations between flourishing and the level of depressive symptoms.*

	Level of depressive symptoms			
	Low (n = 275)	Moderate (n =1110)	High (n = 419)	Total
Mental Health Status	N %	N %	N %	N %
Flourishing	143	409	62	614
	54.4	39.7	18.2	100.0
Not Flourishing	120	620	279	1019
	45.6	60.3	81.8	100.0

Note. $\chi^2 = 88.36$, $p < .001$ (two tailed).

Table 3 represents the prevalence estimates and associations between the demographics age, gender, partner, educational level and flourishing among persons with low, moderate and high depressive symptoms. In the second hypothesis it was expected that males, adults with a higher educational level, and adults who are living with a partner are more likely to flourish compared to females, adults with lower educational level, and alone living adults among individuals with low depressive symptoms. The results show significant associations for the demographics partner and educational level in the group with low symptoms of depression. A significant relation between having a partner, educational level and flourishing was found, but only in people with moderate depressive symptoms. In the group with moderate depressive symptoms persons with a partner are more flourishing (66.2 %) than persons who live not with a partner (33.7%). Further, in the same group education was significantly related to flourishing. Persons with a higher educational level were more often flourishing (38.9 %) than persons with moderate (32.1%) or low (29%) educational level. In the other groups with low or high depressive symptoms these relations were not found.

Table 4 presents the results of the Spearman correlations between the dummy variable flourishing and the personality traits extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience among persons with low, moderate, and high depressive symptoms. In the last hypothesis it was expected that the personality traits extraversion and conscientiousness, are positively related to flourishing, whereas neuroticism is negatively related to flourishing. In general the correlations between flourishing and personality factors were not significant. Only two significant relations were found for conscientiousness, (r = .16, p = .05) in the group with low symptoms of depression and extraversion (r = .13, p = .01) in the group with moderate symptoms of depression. However, both correlations were weak. For the group with high symptoms of depression, no significant correlations were found.

Table 3. *Number and percentages of demographics and flourishing among persons with low (n = 275), moderate (n = 1110), and high depressive symptoms (n = 419).*

	Level of depressive symptoms and mental health status					
	Low n = 275		Moderate n = 1110		High n = 419	
Demographics	No Flour. N %	Flour. N %	No Flour. N %	Flour. N %	No Flour. N %	Flour. N %
Age						
16-29	28	30	143	88	76	9
	23.3	21.0	23.1	21.5	27.3	14.5
30-49	33	50	173	123	83	18
	27.5	35.0	27.8	30.1	29.7	29.0
50-64	32	34	164	107	75	20
	26.7	23.7	26.5	26.2	26.8	32.3
65+	27	29	140	91	45	15
	22.5	20.3	22.6	22.2	16.2	24.2
Total	120	143	620	409	279	62
	100.0	100.0	100.0	100.0	100.0	100.0
χ^2	1.68, p = .64		.69, p = .88		5.71, p = .13	
df	3		3		3	
Gender						
Male	—	—	392	260	133	25
			63.2	63.6	47.7	40.3
Female	120	143	228	149	146	37
	45.6	54.4	36.8	36.4	52.3	59.7
Total			620	409	279	62
			100.0	100.0	100.0	100.0
χ^2			.013, p = .91		1.1, p = .29	
df			1		1	
Partner						
Yes	98	105	471	271	168	39
	81.7	73.4	76.0	66.3	60.2	62.9
No	22	38	149	138	111	23
	18.3	26.6	24.0	33.7	39.8	37.1
Total	120	143	620	409	279	62
	100.0	100.0	100.0	100.0	100.0	100.0
χ^2	2.52, p = .11		11.55, p = .00		.15, p = .70	
df	1		1		1	
Educational level						
Low	56	48	209	114	93	23
	48.7	34.7	35.2	29.0	34.8	38.3
Mod.	27	47	208	126	113	18
	23.5	34.1	35.1	32.1	42.4	30.0
High	32	43	176	153	61	19
	27.8	31.2	29.7	38.9	22.8	31.7
Total	115	138	593	393	267	60
	100.0	100.0	100.0	100.0	100.0	100.0
χ^2	5.58, p= .06		9.51, p =.01		3.58, p = .17	
df	2		2		2	

Note. Flour. = Flourishing.

Table 5 presents the results of the multivariate logistic regression analysis of the demographics and personality onto flourishing. The results show only significant findings for the group with moderate depressive symptoms. Extravert persons were 1.05 times more likely to flourish than introvert persons in the group with moderate symptoms of depression. In the same group the odds to flourish for persons who are living with a partner decreases by the factor of .63. Further, persons with a higher educational level are 1.23 times more likely to flourish than persons with a lower educational level. However, the explained variance is only 5% (Nagelkerke's $R^2 = .05$). For the groups with low or high symptoms of depression no significant findings were found.

Table 4. *Spearman correlations between mental health status and personality among persons with low (n = 739), moderate (n = 646), and high depressive symptoms (n = 419).*

	Level of depressive symptoms			
	Low (n = 275)	Moderate (n = 1110)	High (n = 419)	Total (n = 1.804)
Measures	Flourishing/ No flourishing	Flourishing/ No flourishing	Flourishing/ No flourishing	Flourishing/ No flourishing
Extraversion	.03	.13**	-.02	.05
Agreeableness	.09	.05	-.04	.01
Conscientiousness	.16*	.05	-.05	.03
Emotional stability	-.05	.04	-.04	-.03
Openness to experience	-.11	.03	-.08	.00

Note. *$p < .05$, **$p < .01$, (two tailed).

Table 5. *Multivariate Logistic Regression of demographics, educational level, and personality onto flourishing (n = 1804) for persons with low, moderate, and high symptoms of depression.*

	Level of depressive symptoms					
	Low (n = 275)		Moderate (n = 1110)		High (n = 419)	
Predictor	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
Demographics						
Age	.99	(.98 – 1.01)	.99	(.98 – 1.01)	.99	(.97 – 1.01)
Gender	_	_	.94	(.71 – 1.23)	1.44	(.80 – 2.57)
Partner	.62	(.28 – 1.02)	.63 *	(.47 – .84)	1.21	(.67 – 2.20)
Educational Level	1.30	(.95 – 1.80)	1.23 *	(1.04 – 1.45)	1.12	(.77 – 1.62)
Personality						
Extraversion	.99	(.95 – 1.04)	1.05 ***	(1.02 – 1.07)	1.01	(.96 – 1.06)
Agreeableness	.98	(.92 – 1.04)	.99	(.96 – 1.02)	1.02	(.94 – 1.10)
Conscientiousness	1.04 *	(.99 – 1.10)	1.01	(.98 – 1.04)	.98	(.93 – 1.03)
Emotional stability	.96	(.92 – .99)	1.00	(.98 – 1.02)	.98	(.94 – 1.03)
Openness to experience	1.05	(.98 – 1.01)	.99	(.96 – 1.02)	.95	(.88 – 1.03)
Nagelkerke's R^2	.08		.05		.03	
χ^2	29.6 **		47.7 ***		5.6	
df	8		9		9	

Note. OR = Odds Ratio; CI = Confidence interval; *p < .05, **p < .01, ***p < .001.

DISCUSSION

The aim of the present study was to investigate to what extent individuals with low, moderate, and high depressive symptoms are capable of experiencing flourishing, and to what extent the predictor demographics and personality traits are related to flourishing in each of these groups.

The prevalence of flourishing among persons with low, moderate, and high depressive symptoms

The results of the present study revealed more flourishers among individuals with low depressive symptoms (54.4%) compared to individuals with moderate depressive symptoms (39.7%) and individuals with high depressive symptoms (18.2%). This is in line with the first hypothesis. It confirms that individuals with high depressive symptoms are capable of flourishing despite their mental illness. Considering the high percentage of flourishers (54.4%) this study found considerably more flourishers than in the study from Keyes (2002). A possible explanation for the considerably high percentage of flourishers in the present study could be found in the different instruments for assessing flourishing in both studies (Schotanus-Dijkstra et al., 2015). Keyes (2002) used a variety of self-administered instruments, while the present study used the MHC-SF to assess flourishing. A recent study from Hone et al. (2014) demonstrated that different approaches to measure flourishing leads to different results. By comparing the Huppert & So's framework (2013), the MHC-SF, the Flourishing Scale from Diener et al. (2010) and the PERMA Profiler from Seligman (2011), Hone et al. (2014) showed that the amount of flourishers varies depending on the instrument which was used. He found that the prevalence of flourishing in the same population ranged from 24% when using the Huppert & So's framework, to 39% when using the MHC-SF, to 41% using the Flourishing Scale, and to 47% using the PERMA Profiler.

Another possible explanation could be found in different populations from different countries in the studies. Hone et al. (2014) showed that studies using the MHC-SF have demonstrated wide variations in prevalence rates of flourishing from 8% among South Korean adults (Lim, Ko, Shin, & Cho, 2013), to 20% among South Africans adults (Keyes et al., 2008), 23% among Egyptian adolescents (Salama-Younes, 2011) to 49% among US college students (Keyes et al., 2012) and 23% among Chinese adults (Yin, He & Fu, 2013). Keyes (2002) used data from a population of American adults while the present study used a population with Netherland adults. Comparing the population from Netherlands with the USA of other countries like South Korean differences could be found in the higher socio-economic advantages like a good social insurance system. Further factors like social equality, higher levels of individualism and human rights could be important factors in examining well-being (Schotanus-Dijkstra et al., 2015). The findings underscore the necessity for a standardized measurement method to assess flourishing, which also considers cultural differences.

A further possible explanation could be found in the different instruments, which were used in the present study and in the study from Keyes (2002), to assess depression. Keyes (2002) used the Composite International Diagnostic Interview Short Form (CIDI-SF) scales which assess diagnoses of depression, while the present study used the Brief Inventory Scale (BSI) which measures only

symptoms of depression. Consequently, the present study did not use clear diagnoses for depression. Possibly, the prevalence of flourishers among individuals with a diagnosis of major depression would be generally lower comparing to individuals who did not fit the criteria for a major depression.

The predictive value of socio-demographics on flourishing

From earlier studies it was expected to find associations between the demographics males, a higher educational level (more than 14 years of education), adults between 45-54 years, having a partner and flourishing (high levels of well-being) (Ryff & Singer, 2008; Diener & Ryan, 2009; Keyes, 2002, 2004; Keyes & Simons, 2012). The results of the present study revealed significant associations for the demographics partner and educational level in the group with moderate symptoms of depression. This is in line with earlier findings (Ryff & Singer, 2008; Keyes. 2002; 2004). However, the present study found no relations for the demographics gender and age among low, moderate, and high depressive symptoms and flourishing, which is in contrast to the findings from Keyes (2002; 2004). Comparing to other studies, inconsistent findings regarding to the relation between gender, age and high levels of well-being were found. A study from Khumalo et al. (2012) explored the relation of socio-demographic variables on well-being in an African context. He found also no significant associations for the demographics gender, age on high levels of well-being. But he found significant associations for the variables "living in an urban setting", level of education, marital status and employment. This indicates that by comparing wealth countries with poorer countries (i.e. Africa) cultural differences, such as socio-economic advantages, could play a greater role for well-being than previously was thought.

In another study from Schotanus-Dijkstra et al. (2015), further inconsistent findings for gender and flourishing can be found. They found a significant association between females and high levels of well-being. This is in contrast to earlier findings from Keyes (2002) who showed significant associations between males and flourishing. These inconsistent findings for the relation between gender and well-being indicated that further studies are needed to confirm the present results. Therefore, it is difficult to draw conclusions for the predictive value of gender on well-being. Furthermore, no conclusions about the impact of demographics on flourishing could be made for the individuals with low or high depressive symptoms. A possible explanation could be found in situational factors, such as negative life events and social support. Schotanus-Dijkstra et al. (2015) showed a significant relation between positive life events and social support on flourishing. They also found no relations with negative life-events and flourishing. This is an interesting finding, because it could be assumed that negative life events could have a great impact on the individual's well-being. Situational factors constitute another factor which should be investigated in further studies about mental illness and flourishing. Nevertheless, it is difficult to reflect about possible explanations because of the absence of earlier studies. Further studies are needed for the relation between demographics, well-being and mental illness in order to compare the present findings with other

studies and be able to make clear conclusions about different levels of depressive symptoms. Additionally, the findings indicate that socio-economic advantages could play a bigger role for experiencing high levels of well-being than previously expected.

The predictive value of personality on flourishing

Earlier studies have shown that personality is a strong predictor for well-being (DeNeve & Cooper, 1998; Steel et al., 2008; Lamers, 2012; Schotanus-Dijkstra et al., 2015). Based on these studies it was expected that the personality traits low neuroticism, high extraversion, and high conscientiousness, are associated with flourishing. In the present study weak associations were found for the personality traits conscientiousness, in the group with low symptoms of depression, and for extraversion in the group with moderate symptoms of depression. For neuroticism no associations were found, which is in contrast to earlier studies (DeNeve & Cooper, 1998; Steel et al., 2008). A recent study from Schotanus-Dijkstra et al. (2015) found a possible explanation for the strong association of conscientiousness, on flourishing. Conscientious persons are shown to set challenging goals for themselves and are disciplined in reaching their goals (Schotanus-Dijkstra et al., 2015). This is in line with the definition of the WHO about positive mental health (WHO, 2005) that also stresses the importance of realizing the own abilities and working productively and fruitfully to experience high levels of well-being. A possible explanation for the finding that only significant associations could be found for individuals with low and moderate depressive symptoms can be found in the symptom characteristic of depression. Individuals with depression are characterized to show increased feelings of inferiority (DSM-IV, 4th edition, 2000). Therefore, higher levels of depressive symptoms would be associated with lower levels of conscientiousness. According to that, individuals who were rather conscientious in the time before they suffer from depressive symptoms would be less conscientious because of the symptoms of the mental illness.

Strengths and limitations

The current study involves three strengths. First, the study used a large representative data set of 1.804 participants. Second, this study is one of the first that investigated the levels of positive mental health in terms of flourishing of people with low, moderate, and high symptoms of depression. Finally, the present study used the MHC-SF which is a widely validated and reliable instrument to measure well-being and flourishing.

There are also limitations to this study. First, the degree of depression is only measured by symptoms of depression. Using an instrument which measures major depression could give more information about the relation between the level of flourishing and depression. Thereby, the results cannot be compared with individuals who are diagnosed with depression. Finally, this study used a cross-sectional design which makes it difficult to draw a conclusion about causality.

Recommendations for further research and practice

In general, more research is needed to find significant determinants for flourishing. Most studies include only emotional well-being measures (see Steel et al., 2008). The present findings underline the importance of also psychological-, and social well-being and high levels of flourishing. Considering the core components of well-being and the definition of the World Health Organization (WHO, 2005) of mental health, well-being can be best seen as a set of high levels of emotional-, psychological-, and social well-being and the absence of mental illness. Thus, future studies about mental health should involve all three parts of well-being and consider high levels of flourishing.

In additional, more research is needed to find specific determinants for flourishing. Determinants, such as situational factors and socio-economic advantages should be investigated in future studies. Future validations for situational factors could have great impact on interventions for mental illness. Interventions could be matched to the specific factors for experiencing flourishing among individuals with mental illness. Interventions could be more oriented on social support and in a more close involvement of loved ones in therapies and intervention programs. Further, common activities for individuals in clinical settings could be more promoted during leisure time. Specific for depressive symptoms most individuals feel lonely because they neglect social contacts.

Furthermore, a common use of instruments to assess flourishing is needed in order to compare studies about flourishing. Hone et al. (2014) demonstrated the impact of different instrument use on the findings about flourishing. A widely used and validated instrument is represented by the MHC-SF (Keyes, 2008). Future studies about mental illness and well-being should use instruments, such as the Diagnostic Interview Short Form (CIDI-SF), to get an accurate diagnose of mental illness. Additionally, longitudinal designs in future studies are necessary to investigate specific determinants for flourishing and also for individuals with mental illness. In summary, much more research is necessary in the studies of well-being.

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