Master's Thesis

THE MEDIATING ROLE OF SOCIAL CAPITAL IN ETHNIC DISPARITIES IN MENTAL HEALTH

by

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Abstract

Background: Depression is the most common mental disorder, affecting 322 million people globally. Ethnic minorities in particular are shown to be more vulnerable, with higher chances of struggling with depression. Research suggests that social capital might be one of the factors that play a role in these disparities.

Objective: To study the association between ethnicity, social capital, and mental health in the general population of the Netherlands. More specifically, to test if social capital mediates the association between ethnicity and depression.

Methods: For this study, data from the sixth wave of the European Social Survey (ESS) were used (N = 1845). The association between ethnicity (native Dutch and ethnic minorities) on depression (measured by an eight-item version of the Center for Epidemiologic Studies Depression Scale) was tested using regression analysis. The mediating effect of social capital (measured using several questions assessing the levels of structural and cognitive social capital) in this association was tested using PROCESS Macro.

Results: The total effect of X (ethnicity) on Y (depression) in the PROCESS Macro analysis was $b = 1.88$, p < .001. After including three mediating variables of social capital (social cohesion, social network, and social participation), the direct effect of ethnicity on depression score was decreased to 1.53 p < .001. This suggests a partial mediation, with total indirect effect of $b = 0.35$, 95% CI [0.16, 0.58].

Conclusions: Results in this study showed that people with minority background in the Netherlands had significantly higher prevalence of depressive symptoms, compared to native Dutch as a reference population. Moreover, it showed that social capital partly mediates this association. Around 19% of this difference on prevalence of depressive symptoms is explained by the indicators of cognitive and structural social capital.

Keywords: Social capital, mental health, ethnic minority

Introduction

Depression is the most common mental disorder, affecting 322 million people globally (World Health Organization, 2017). This number has been constantly increasing over the years. According to the World Health Organization (WHO), the number of people struggling with depression increased by 18.4% between 2005 and 2015 (World Health Organization, 2017). In the Netherlands approximately one in five people (18%) experience mental health disorders every year, with mood disorder being the most prevalent (de Graaf, ten Have, van Gool, & van Dorsselaer, 2012).

Depression rates are shown to be higher among ethnic minorities in particular. In a review of eight papers, Close et al. (2016) found that seven of them reported a higher prevalence of depressive symptoms in first generation migrants (Close, et al., 2016). Similarly, in a study using data from 23 European countries, Missine and Bracke (2012) found in seven of them a significant difference, where immigrants and ethnic minorities scored higher in depressive symptoms, compared to native populations (Missinne & Bracke, 2012). In the Netherlands, a study that explored the prevalence of mental health problems reported that ethnic minorities with non-western background in particular had higher prevalence of common mental health disorders, including depression (de Wit, et al., 2008). These disparities in mental health become even more important when considering the growing number of people who migrate. From 2000 to 2019, the number of international migrants was increased for almost 100 million (IOM, 2019). Based on global estimates, there were 272 million international migrants in 2019, with nearly one-third of them being in Europe (IOM, 2019).

Research shows that stressors related to migration may increase the vulnerability to poor mental health, leading to higher prevalence of common mental disorders (Hall, Pangan, Chan, & Huang, 2019; Loue 2009). During the migration process the loss of relationships, assets, and support, grouped as social capital, may become relevant (Bughra, 2004). Studies that investigated the difference of levels of social capital in different ethnic groups, report that social capital is significantly lower in ethnic minorities. For instance, a study by Lindstroom (2005) found that ethnic minorities from non-EU countries in Sweden participate to a significantly lower extent in a variety of civic and social activities, compared to the reference population born in Sweden (Lindstroom, 2005). The differences in participation in these groups compared to the group born

in Sweden were observed both for social participation items at the core of the definition of social capital, but also for cultural and other activities unrelated to social capital (Lindstroom, 2005).

Social capital on the other hand, is shown to have a negative correlation with mental health problems, meaning that people with high levels of social capital score lower on mental health problems (Ehsan & De Silva, 2015). It is suggested that social capital influence mental health outcomes in several pathways. First, it may provide normative guidance about health-relevant behaviours, such as physical activity (Kawachi & Berkman, 2001). Second, social networks may provide individuals with the sense of purpose, belonging, and security, which are linked to a better mental health. Lastly, being part of a broader social structure may also promote more rapid transmission of health information, which in turn may increase the chances for access to formal or informal mental health care (Lindstroom, 2005; Kawachi & Berkman, 2001).

The aim of the study is to assess if ethnic minorities in the Netherlands have higher prevalence of depressive symptoms, compared to the native Dutch as a reference population. It also aims to test if social capital mediates the association between ethnicity and depression. In doing so, this study seeks to further expand the understanding of the significance of social capital in the mental health and its influence in ethnic disparities in mental health.

Migration and mental health

Research shows that the mental health of migrants is better in the initial years after immigration in comparison with the counterparts in the native country (Liu & Cheng, 2011). This is aligned with the healthy migrant effect, which entails that people in good health self-select themselves to migrate (Lu, 2008). For instance, large scale studies conducted in the United States have consistently found a lower lifetime prevalence of anxiety, mood, and substance use disorders among Mexican, Hispanic, Asian and non-Hispanic white immigrants, than among US-born population of the same national origin (Liu & Cheng, 2011). Such lower rates were further observed only in the first foreign-born generation in the early years of migration. These findings suggest that the advantage reverses over time, possibly as a result of migration-related stressors (Liu & Cheng, 2011).

The health of migrating individuals and groups can be influenced by each stage of the migration process (Loue, 2009). The process is often divided in three phases: pre-migration, migration, and post-migration (Bughra, 2004). Pre-migration involves the decision to migrate and the preparation. The migration itself is the process of relocation of individuals from one place to another, while the third stage – post-migration – is defined as the adjustment of the immigrant to the social, political, economic and cultural framework of the receiving society (Bughra, 2004).

In the period preceding migration there is a distinction between factors that influence the decision to migrate. Individuals may choose to migrate because of 'push' factors, such as poverty, unemployment, persecution, internal civil strife, a change in government or regime, and natural disasters (Loue, 2009). Refugees in particular migrate due to these factors. Individuals may also migrate because they feel a 'pull' toward the intended destination. This may be as a result of perceived employment prospects, the ability to reunify with other family members, expectations of a better economic and/or political situation, freedom from persecution, or a safe haven from the ravages of man-made or natural disasters (Loue, 2009). Distinctions have accordingly been made between those immigrants who are 'voluntary', such as students, tourists, and migrant workers, and those who are 'forced' to migrate as the result of displacement due to internal conflict, environmental disaster, famine, or development projects (Loue, 2009). In recent studies on migration and health, there is another distinction related to 'push' and 'pull' factors, between immigrants from 'Western', 'high income', 'developed' countries, and those from 'low-income' or 'developing countries' (Malmusi, Borrell, & Benach, 2010). Immigrants coming from developing countries to more developed ones may find harder to integrate, and may be more vulnerable to discrimination and exploitation, which in turn may impact health (Malmusi, Borrell, & Benach, 2010).

During the process of migration and after the arrival to their destination (post-migration phase), individuals might be affected by the conditions that they confront and the experiences that they undergo during the process. During these phases, additional factors like negative or positive life events or bereavement issues related to loss of relationships, assets and support may become relevant (Bughra, 2004). At the post-migration stage, immigrants may face challenges with the acculturation process, which has been defined as the process of cultural and psychological change that follows intercultural contact (Bughra, 2004).

Acculturation can take several forms. A commonly used typology is the one provided by Berry (1997), which distinguishes four types of acculturation: assimilation, integration, separation, and marginalization. Assimilation implies moving into the host society and giving up cultural identity (Lee, Koeske, & Sales, 2004). Integration implies moving to join the host society but maintaining cultural identity, which is viewed the most desirable strategy in the multicultural society. Separation implies holding onto cultural identity and avoiding the host society (Lee, Koeske, & Sales, 2004). Lastly, marginalization refers to the situation where individuals or social groups have cultural or psychological contact neither with their traditional culture nor the dominant society. (Lee, Koeske, & Sales, 2004). Within the general acculturation perspective, the notion of acculturative stress has been proposed to account for the variable mental health outcomes (Williams & Berry, 1991). Acculturative stress refers to one kind of stress, that in which the stressors are identified as having their source in the process of acculturation, which may result in a particular set of stress behaviours that include anxiety, depression, feelings of marginality and alienation, heightened psychosomatic symptoms, and identity confusion (Berry, Kim, Minde, & Mok, 1987).

Results of studies of acculturative stress have varied widely in the level of difficulties found among members of acculturating groups. Early views were that acculturation inevitably led to stress; however, current views are that stress is linked to acculturation in a probabilistic way, and the level of stress experienced depends on other factors (Williams & Berry, 1991). One important factor is the mode of acculturation. Individuals who feel marginalized and those who seek to remain separate tend to be highly stressed, possibly due to lack of social interactions. In contrast, those who pursue integration are shown to be minimally stressed. Assimilation on the other hand is shown to be related with intermediate levels of stress (Berry, Uichol, Thomas, & Doris, 1987). Another important factor is the prior exposure to the culture of the host, which may influence the levels of stress. Prior knowledge of the new language and culture and prior intercultural encounters of any kind may help immigrants in the acculturation process, which in turn reduces stress (Williams & Berry, 1991).

Social capital and mental health

Social capital is defined as social networks and the reciprocities that arise from these networks (Baron, Field, & Schuller, 2000). The concept is primarily based on the work of Robert D. Putnam (1995), James Coleman (1990), and Pierre Bourdieu (1993). Each of these authors explored different dimensions of social capital, hence contributing to the development of the concept.

Bourdieu's contribution to the concept was on how it inter-relates and how it transforms to other types of capital, such as cultural and economic capital (Baron, Field, & Schuller, 2000). His main concern was the understanding of social inequality and social hierarchy using the inter-relation of the three types of capital. Influenced by Marxist ideology, he thought that economic capital is at the root of all other types of capital and that it could be combined with other forms of capital to create and reproduce inequality (Field, 2008). The main focus of Coleman was the relationship between social capital and education. Coleman defined social capital as the set of resources that inhere in family relations and in community social organisation and that are useful for the cognitive or social development of a child or young person (Field, 2008). He used the concept of social capital to explain the differences observed in academic achievement of pupils in different schools. Coleman argued that the most important factor in explaining these differences was the impact of community norms upon parents and pupils (Field, 2008). According to him, communities are a source of social capital that could offset the impact of other factors, such as social and economic factors.

Whereas Bourdieu and Coleman explored the concept of social capital from the discipline of sociology, Putnam went beyond and applied the concept in political science. In his first major study, Putnam investigated the role of social capital on regional differences in political development, using the case of Italy (Baron, Field, & Schuller, 2000). Subsequently, Putnam turned his attention to the USA, and published a series of papers claiming to demonstrate that there has been a sizeable 'decline' of social capital since the 1940s, which explains the ungovernability of parts of urban America (Field, 2008; Putman, 2000).

In more recent studies, the concept of social capital has also been applied in other disciplines. In public health, social capital has been used to explain the differences on health outcomes in different social groups. Research shows that social capital is negatively associated with mental health outcomes in particular. This suggests that social groups that possess higher levels of social capital, may experience less mental health problems (Ehsan & De Silva, 2015).

This protective effect is often interpreted in two ways, representing two different models: main effect model and stress buffering model (Kawachi & Berkman, 2001). The stress-buffering model relates social capital to mental health only for persons under stress. It suggests that social relationships may act as a buffer, thus helping individuals cope with stress and mental health problems (Kawachi & Berkman, 2001). On the other hand, the main effect model proposes that social relationships have a beneficial effect regardless of whether individuals are under stress. It suggests that social capital influences mental health outcomes in several pathways. First, social capital may provide normative guidance about health-relevant behaviours, such as physical activity (Kawachi & Berkman, 2001). Physical activity, such as regular exercise, in turn, has a positive effect on mental health. Second, social networks may provide individuals with the sense of purpose, belonging, and security, which are linked to better mental health. Lastly, being part of a broader social structure (e.g., participation in community organizations, involvement in social networks, and immersion in intimate relationships) may also promote more rapid transmission of health information, which in turn may increase chances for access to formal or informal mental health care (Lindstroom, 2005; Kawachi & Berkman, 2001).

The features of social capital can be grouped into the quantity of social interactions, termed as structural social capital, and the quality of social interactions, termed as cognitive social capital (Ehsan & De Silva, 2015). Structural social capital refers to relationships, networks, and memberships that may bond, bridge or link individuals or groups together. Cognitive or perceived social capital on the other hand, refers to values, norms, attitudes, beliefs, civic responsibility, altruism and reciprocity within a community (Ehsan & De Silva, 2015).

Cognitive social capital has shown a more consistent pattern of association with mental health, while for structural social capital the evidence is more mixed. A systematic review by De Silva et al. (2005) provides a strong evidence of the association between levels of cognitive social capital and prevalence of common mental disorders. Seven out of 11 effect estimates included in this study reported higher levels of cognitive social capital to be associated with lover risk of mental disorders (De Silva, McKenzie, Harpham, & Huttly, 2005). On the other hand, only three out of 10 effect estimates showed a significant negative association between measures of structural social capital and common mental disorder (De Silva, McKenzie, Harpham, & Huttly, 2005). Another systematic review conducted in 2015 found the same results (Ehsan & De Silva, 2015). Strong evidence that high cognitive social capital is associated with reduced risk of common

mental disorders was reported in thirty-three studies analysed in this review, five of which were cohort studies. Same as in the previous study, the results for structural social capital were more varied. The majority of studies included in the review showed no association between structural social capital and common mental health disorders (Ehsan & De Silva, 2015).

Research question

People with migration background are shown to be more vulnerable to poor mental health, experiencing higher prevalence of common mental disorders, including depression (Close, Kouvoen, Bosqui, Patel, O'Reilly, & Donnelly, 2016; Missinne & Bracke, 2012). The present study aims to investigate if this is also the case with the Netherlands. Hence, the first research question is: "To what extent are there differences in prevalence of depressive symptoms between Dutch native population and ethnic minorities?" Research suggests that social capital is a factor that may influence the frequency and severity of depressive symptoms. Thus, the second research question that this study aims to answer is: "If there are differences in prevalence of depression between two groups, to what extent these differences are explained by social capital?"

Based on the relevant literature, the following hypotheses are made: (H1) Ethnic minorities in the Netherlands experience higher prevalence of depressive symptoms than the native Dutch; (H2) the difference in prevalence of depression between the two groups is mediated by social capital. The mediation model suggested by the hypotheses is shown in Figure 1.

Figure 1

Mediation model
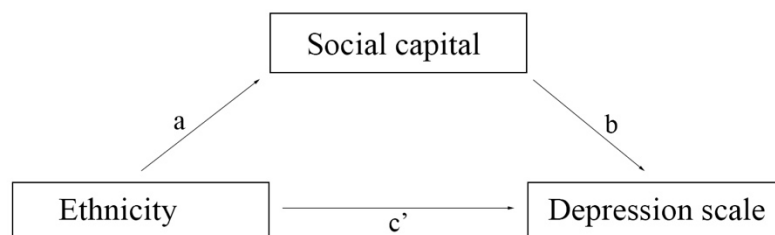
Methods

Design and procedures

To examine the relationship between ethnicity, social capital, and mental health in the Netherlands, the sixth wave of the European Social Survey (ESS) was used. The ESS is a cross-national survey that measures the attitudes, beliefs and behaviour patterns in more than thirty countries. The survey is conducted every two years through face-to-face interviews with newly selected, cross-sectional samples. The data collection of the first wave of the ESS took place in 2002, and the last one in 2018.

The sixth round of the survey covered 29 countries. It included 21 European Union (EU) countries (Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Lithuania, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom) and 8 non-EU countries (Albania, Iceland, Israel, Kosovo, Norway, Switzerland, Russian Federation, and Ukraine).

The ESS includes two parts of questions, fixed and rotating ones. The fixed part consists of questions that are included in every ESS-wave and cover basic socio-economic and demographic background information. In the rotating part of the questionnaire, every wave includes specific topics that can change from wave to wave. The sixth wave of ESS was chosen for the current study because in the rotating part of questions it measured personal wellbeing (ESS, 2018). Thus, the sixth wave was the most recent data set of ESS where the indicators of social capital and depression were included together.

Participants and sampling

The recruitment of participants was done through a two-stage process. In the first stage, postal delivery points where selected with equal probability, while in the second stage a person within a household was chosen. In total 3537 people were approached for participating in the survey. The response rate was 55%, with 1845 respondents participating in the survey (N=1845).

Participants' ages ranged from 15-95, with the mean age of 51. 54% of participants were identified as female, while 6.6% of them belonged to ethnic minority groups. Regarding education,

there were two different categories, lower and higher education. In total, 56.8% of respondents belonged to the lower education category, while the other part belonged to the higher education category. As for the income, there were three separate groups, low, middle, and high income. 34.5% of the respondents belonged to the low-income group, 32.1% to the middle-income group, while 33.4% belonged to the high-income group.

Data collection instruments

Dependent variable

Depression was the dependent variable of the present research. Prevalence of depressive symptoms was measured using an eight-item version of the Center for Epidemiologic Studies Depression Scale (CES-D). The CES-D measures the symptoms that are among those on which a diagnosis of clinical depression is based (Radloff, 1977). In the survey, respondents were asked how often within the past week they (1) felt depressed, (2) felt everything they did as effort, (3) had restless sleep, (4) were happy, (5) felt lonely, (6) enjoyed life, (7) felt sad and (8) could not get going. There were four response categories, all measured from 1 to 4: none or almost none of the time, some of the time, most of the time, all or almost all of the time. The eight questions were merged in one variable, ranging from 8 to 30, with higher scores indicating a greater frequency and severity of depressive symptoms. The reliability analysis showed that the scale has a good internal consistency (Cronbach's Alpha = 0.81).

Independent variable

The independent variable was ethnicity and was measured by asking participants if they belong to an ethnic minority group. There were two response alternatives: No (value = 0) and Yes (value = 1). Respondents were then divided into two groups: those who belong to an ethnic minority group and those who belong in the native population. "Belong" in this context refers to the attachment or identification of the respondents participating in the study.

Mediator variable

Social capital was the mediator variable of the present study. The two dimensions, cognitive and structural social capital, were measured using several questions that were included in the sixth wave of the ESS. The cognitive social capital was measured using three variables: institutional trust, social trust, and social cohesion. Institutional trust was assessed using five items. People were asked about their trust in parliament, politicians, political parties, legal system, and police. These questions could be answered on an 11-point scale ranging from 0 representing 'low trust' to 10 representing 'high trust'. The variable was calculated by summing these items (Cronbach's Alpha = 0.87). Social trust was measured using three items. People were asked: "would you say that most people can be trusted?", "do you think that most people would try to take advantage of you?" and "would you say that most of the time people try to be helpful?" Same as for the institutional trust, these questions could be answered on an 11-point scale and was calculated by summing the three items (Cronbach's Alfa = 0.90). Lastly, for measuring social cohesion, respondents were asked: "do you feel that people in local area help one another?" This question could be answered on a 7-point scale ranging from 0 ('not at all') to 6 ('a great deal').

For structural social capital, social network, social support, and social participation were measured. The social network was measured using the questions: "how often do you socially meet with friends, relatives, or work colleagues?" The response alternatives ranged from 1 representing 'never' to 7 representing 'every day'. To measure social support, respondents were asked: "Do you receive help and support from people you are close to when you need it?" The answer had the scale from 0 to 5, where 0 meant "not at all" and 6 meant "completely". The level of social participation of individuals was measured by asking the respondents to indicate whether they do a voluntary work or participate in any organization. Answers ranged from 1 representing 'once a week' to 6 representing 'never'.

Control variables

There are other factors that, in addition to the factors used in this study, are shown to influence mental health outcomes (Akhtar-Danesh & Landeen, 2007). To correct for these factors, in line with previous studies on the association between social determinants and mental health, we included age, gender, educational level and income as control variables. For gender, European

Social Survey asked respondents if they are male (value=1) or female (value=2). To identify the age of participants the date of birth was asked. In order to measure the educational level, the ESS used a Dutch version of International Standard Classification of Education (ISCED), where respondents had seventeen response categories, starting from 'primary education' to 'doctoral degree'. These values were grouped in a binary variable indicating low and high level of education. Lastly, for income, the ESS asked respondents for total net income, categorized in ten different groups of income. These values were grouped in three categories, low, middle, and high-income category.

Statistical analysis

The statistical analysis was conducted using *IBM SPSS Statistics 25*. First, descriptive statistics were used to establish frequencies of variables. Then, a *t-test* was performed to compare the scores of dependent and mediator variables in two groups, ethnic minorities and native population. To assess the mediating effect of social capital, a four-step process outlined by Baron and Kenny (1986) was employed. First, the association between independent variable (ethnicity) and dependent variable (depression) was assessed. Second, the association between independent variable and mediator variable was assessed (path *a* in the mediation model). Third, the association between mediator variable and dependent variable was explored (path *b*). For the last step, *PROCESS macro* analysis was performed to assess the total effect of independent variable on dependent variable, and the indirect effect through mediation variables.

Results

The means, standard deviations, and the differences between native Dutch and ethnic minorities are presented in Table 1. Significant differences were found for the age, income, and depressive symptoms. T-test showed that people with migration background were significantly younger $t(1845) = -5.45$, $p < .001$, had lower income $t(1566) = -2.68$, $p = .008$, and had more depressive symptoms $t(1832) = 5.53$, $p < .001$.

Table 1

Descriptive statistics

	Native population %(N) / M(SD)	Ethnic minorities %(N) / M(SD)	Total %(N) / M(SD)	Difference test	*p* - value
Gender				2.99	.084
Female	53 (914)	61.2 (74)	53.6 (988)		
Age	51.7 (18.03)	42.6 (14.97)	51.1 (18.98)	-5.45	.000
Educational level				-.610	.542
Low	56.6 (974)	59.5 (72)	56.8 (1046)		
High	43.3 (745)	40.4 (49)	43.2 (796)		
Net income	5.94 (2.74)	5.13 (2.99)	5.88 (2.76)	-2.68	.008
Low	33.5 (491)	46.6 (48)	34.5 (540)		
Middle	32.99 (481)	21.3 (22)	32.1(503)		
High	33.5 (490)	32.0 (33)	33.4 (523)		
Depression scale	12.87 (3.72)	14.86 (4.98)	13.0 (3.85)	5.53	.000
Institutional trust	27.80 (8.01)	27.25 (9.12)	27.76 (8.08)	-.691	.490
Social trust	15.09 (2.51)	14.75 (3.14)	15.07 (2.56)	-1.18	.238
Social cohesion	3.96 (1.44)	3.28 (1.91)	3.92 (1.49)	-3.83	.001
Social network	5.42 (1.24)	5.13 (1.54)	5.40 (1.26)	-1.98	.050
Social support	5.07 (1.09)	4.68 (1.58)	5.04 (1.13)	-2.53	.012
Social participation	2.92 (2.08)	2.33 (1.89)	2.88 (2.08)	-3.28	.001

For the mediation analysis, a process with four steps proposed by Baron and Kenny (1986) was followed. The results of the association between the variables are shown in Table 2. In the first step, the relationship between independent variable (ethnicity) and dependent variable (depression) was assessed. The regression analysis showed that ethnicity was positively associated with depression (β = .11, p = .001). This suggests that people from ethnic minorities have higher prevalence of depressive symptoms.

Next, the relationship between independent variable and mediator variable(s) was explored. Initially, there were six variables used to measure social capital. From the regression analysis performed for each of these variables, it was shown that three out of six had a significant relationship with ethnicity. Social cohesion (β = -.09. p < .001), social networks (β = -.06, p < -.015), and social participation (β = .05, p < .022) were each negatively associated to ethnicity, meaning that people with migration background scored significantly lower.

Regarding the association of these three variables with the dependent variable, the regression analysis showed that all of them are negatively associated with depression (Social cohesion β = -.15, p < .001, Social network β = -.12, p < .001, and Social participation β = -.13, p < .001). This suggests that people who score lower on social cohesion, social networks, and social participation, have higher prevalence of depressive symptoms.

Lastly, a mediation analysis using PROCESS Macro was performed. After controlling for socio-demographic characteristics, a significant indirect effect of ethnic background on depression through three factors of social capital is found. The total effect of X (ethnicity) on Y (depression) was b = 1.88, p < .001, and after including the three mediating variables of social capital (social cohesion, social network, and social participation), the direct effect of ethnicity on depression score was decreased to 1.53 p < .001. This suggests a partial mediation, with total indirect effect of b = 0.35, 95% CI [0.16, 0.58].

Table 2

Associations between independent, mediator, and dependent variables

	Standardized Beta	t	p-value
Step 1			
Ethnicity → Depression	.11	4.77	.001
Step 2			
Ethnicity → Institutional trust	-.01	-.72	.470
Ethnicity → Social trust	-.02	-.83	.403
Ethnicity → Social Cohesion	-.09	-3.87	.001
Ethnicity → Social Network	-.06	-2.42	.015
Ethnicity → Social Support	-.04	-1.66	.096
Ethnicity → Social participation	-.05	-2.28	.022
Step 3			
Social cohesion → Depression	-.15	-6.13	.001
Social network → Depression	-.12	-5.01	.001
Social participation → Depression	-.13	-5.69	.001

Discussion

The purpose of this study was to assess the relationship between ethnicity, social capital, and depression in the Netherlands. Hypothesizing that the prevalence of depression is higher in ethnic minorities than in native Dutch as a reference population, the study sought to assess the extent to which this difference is explained by social capital. There were two initial hypotheses: first, that people with minority background score higher in the scale of depressive symptoms; second, that this difference is explained by the variances in social capital.

In line with the first hypothesis, the results of regression analysis showed that people with migration background scored significantly higher in depressive symptoms. These results remained significant after controlling for socio-demographic factors, such as age, gender, education, and income. This finding was consistent with the past studies, such as those by Close et al. (2016) and Misine and Bracke (2012). The study by Close et al. (2016) reviewed eight papers and found that seven of them reported a higher prevalence of depressive symptoms in first generation migrants (Close, et al., 2016). Similarly, Missine and Bracke (2012) found that depressive symptoms were more prevalent among immigrants and ethnic minorities in 16 European countries (Missinne & Bracke, 2012).

As for the second hypothesis, that the indicators of social capital explain the difference in prevalence of depression in different ethnic groups, the analysis showed this to be partly true. There were six indicators of social capital assessed in this study: institutional trust, social trust, social cohesion, social network, social support, and social participation. From these indicators, three remained significant after performing regression analysis for the path *a* and *b* of the mediation model. The results from the mediation analysis show that around 19% of the variations in prevalence of depressive symptoms, are explained by these three indicators of social capital. This suggests that the association between ethnicity and depression is partially mediated by social capital.

From the three indicators of social capital which had a significant association with ethnicity and depression, two of them – social network and social participation – are indicators of structural social capital. The other one, social cohesion, is indicator of cognitive social capital. Although there were two significant variables of structural social capital and one of cognitive social capital,

the proportion of structural and cognitive factors in the indirect effect was equal. Hence, it is impossible to draw conclusion on which dimension has a stronger association with mental health.

To our knowledge, there are no similar studies that analyzed the mediating effect of social capital on ethnic disparities in mental health. However, there are other studies that explored the ethnic differences on social capital and the role of social capital on depression (i.e., path *a* and *b* of the mediation analysis of the present study*)*. In this regard, the findings presented here are in line with findings reported in other studies. For instance, a study conducted in Sweden showed that ethnic minorities from non-EU countries in Sweden participate to a significantly lower extent in a variety of civic and social activities compared to the reference population born in Sweden (Lindstroom, 2005). The differences in participation in these groups compared to the group born in Sweden were observed both for social participation items at the core of the definition of social capital and cultural and other activities unrelated to social capital (Lindstroom, 2005). On the other hand, as per the association between social capital and mental health, the research is even more extensive. Smaller social networks, fewer close relationships, and lower perceived adequacy of social support have all been linked to depressive symptoms (Kawachi & Berkman, 2019). As suggested in the theoretical framework of this study, social capital can influence mental health outcomes in several pathways. First, social capital may provide normative guidance about health-relevant behaviours, such as physical activity (Kawachi & Berkman, 2001). Physical activity, such as regular exercise, in turn, have a positive effect on mental health. Second, social networks may provide individuals with the sense of purpose, belonging, and security, which are linked to a better mental health. Lastly, being part of a broader social structure (e.g., participation in community organizations, involvement in social networks, and immersion in intimate relationships) may also promote more rapid transmission of health information, which in turn may increase chances for access to formal or informal mental health care (Lindstroom, 2005; Kawachi & Berkman, 2001).

By assessing the mediating effect of social capital on ethnic disparities in mental health, this study fills a knowledge gap in the field. Most of the studies have explored the buffering role of social capital on mental health, which represents the moderation model. To our knowledge, the present study is the first one that assessed the mediation effect of social capital on ethnic disparities in mental health. Moreover, it does so with a relatively large sample. With 1845 respondents from all across the Netherlands, the sample used in this study can be considered as representative for the country.

Besides providing evidence in the present literature, the findings presented in this study have also theoretical implications, as they provide a better understanding of the relation between mental health and social environment. It suggests that having more and better social connections is a resource that is associated with better mental health outcomes. Beyond the scientific relevance, these findings can be relevant for future interventions dealing with higher prevalence of common mental health disorders in people with migration background. In this regard, social capital can be seen as an explanatory factor of higher prevalence of problems, but also as a tool for these interventions.

There are also limitations that should be taken into account when considering the findings presented in this study. The first limitation is the cross-sectional design, which makes impossible to draw conclusion about the direction of causality. The cross-sectional design makes difficult to distinguish between lack of social ties as an antecedent to, or as a consequence of, psychological distress (Kawachi & Berkman, 2001). Another limitation is that the present study is relied only on self-reporting data, which makes it more vulnerable for biased responses. Bias in self-reporting data can arise especially from the recall error. Recall bias can occur when study participants provide responses that depend on his/her ability to recall past events. Although some variables in this study were measured with several questions and had good reliability (Cronbach's Alfa > 0.80), there were also variables that were measured with only one question, which increases the risk for biased responses. Another response bias to be considered is the social desirability bias, which occurs especially when the respondents are asked about sensitive topics.

There are several things to consider for future research to correct for these limitations. First, to understand the direction of causality between the variables, a longitudinal study design is required. Secondly, to increase the reliability of the data, future research should employ a multi-method data collection method, meaning that, besides self-reporting data, medical records should also be included. This in turn, could contribute in decreasing the risk for response bias.

In conclusion, this study analyzed the association between ethnicity, social capital, and mental health. The results presented in this study showed that people with migration background have significantly higher depressive symptoms, compared to native Dutch as a reference population. Moreover, it showed that social capital partly mediates these association; approximately 19% of the difference on prevalence of depressive symptoms is explained by the indicators of social capital.

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