The Perceived Mental Health of Chinese Migrants in the Netherlands

A study into the relationship between acculturation and the perceived mental health regarding Chinese migrants

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ABSTRACT

Most of the literature regarding Chinese migrants in the Netherlands are based on descriptive studies. This could be due to the perceived invisibility or little trouble of this migrant group by the Dutch majority. However, the perceived mental health of Chinese migrants is lower than that of the majority. Nevertheless, it still interesting how this group stands its ground in society by studying different acculturation indicators and perceived mental health. This exploratory quantitative study among Chinese migrants supports the existence of a significant positive relationship between language proficiency and their perceived mental health as well as quantity, and nature, of their social contacts. Mastering the Dutch language could contribute to participating in the society, having contact with others, and being embedded in heterogeneous social networks. The quantity of their social contacts even mediated the relationship between language proficiency and perceived mental health. The findings also showed that there were not any significant correlations regarding the second-generation Chinese migrants. So, further research could focus more on exploring more knowledge concerning this specific group.

Key words: language proficiency, mental health, social contacts, Chinese migrants, acculturation

Introduction

Earlier research have shown that there are mental health disparities between ethnicity groups in societies (Lorant et al., 2003). There are indications that the perceived mental health of ethnic minorities in the Netherlands, such as Chinese migrants, is lower than that of the Dutch majority (CBS, 2011). This lower level of perceived mental health could be explained by acculturation (Kamperman, Komproe & De Jong, 2003). For instance, when an individual chooses to accept both host and origin culture, including various social contacts, a higher level of mental health could be perceived (Van Oudenhoven, Willemsema & Prins, 1996, as stated in De Leeuw, 2008). Besides social contacts, another prevalent indicator of acculturation would be language proficiency (Arcia, Skinner, Bailey & Correa, 2001).

However, there is little knowledge regarding mental health among Chinese migrants in the Netherlands (Liu, Ingleby & Meeuwesen, 2011). This could be due to the perception that Chinese migrants are finely socio-economically integrated (Van Tubergen, Moynihan & Thomas, 2013). Others assume that Chinese migrants would solve their problems in their own environment (Liu, Ingleby & Meeuwesen, 2011). As a result, Chinese migrants are being

perceived as an invisible minority by the majority of the Dutch (Liu, Sbiti & Huijbregts, 2008; Vogels, Geense & Martens, 1999, as described in Liu, Ingleby & Meeuwesen, 2011). Due to their arrival in 1911 in the Netherlands (Benton & Pieke, 1998; Gijsberts, Huijnk & Vogels, 2011), they could be seen as one of the longest established minority groups. Their invisibility may have led to less salience among researchers over the last 100 years, which is why this research is trying to fill the gap. Findings of this research could also be of social importance, because ethnic diversity is a common characteristic of the Dutch population (Klaufus, Fassaert & de Wit, 2014). Moreover, in international public health research, acculturation already has been used as a health risk factor for migrants (Bhugra, 2004). So, policy makers could sharpen their focus on making policy on the mental health of Chinese migrants, using the results of this research.

This study aims to investigate language proficiency, quantity and nature of social contacts in relation to the perceived mental health among Chinese migrants. Because little research has been done regarding this phenomenon, the target group was kept as big as possible, which would help generating more reliable results. So, the target group consisted of both first- and second-generation male and female Chinese migrants. In addition, this research also examines if both the quantity and nature of social contacts could mediate the possible relationship between language proficiency and perceived mental health. Acculturation could be measured by many various proxies (Lee, Nguyen & Tsui, 2011), however current study limits its focus to language proficiency, quantity and nature of social contacts. The research question reads as follows: What is the relationship between language proficiency, quantity and nature of social contacts, and the perceived mental health of Chinese migrants in the Netherlands?

Perceived mental health

According to Jahoda (1958) mental health involves the status of human mind and is a personal concern. Mental health may also be operationalized as a condition of symptoms of the subjective well-being of an individual (Keynes, 2002). A more recent definition of mental health by the WHO (2004) indicates that mental health is a state of well-being, in which a person can develop and comprehend its abilities. This state of well-being should allow people to: cope with the stresses of life, work productively, and make a contribution to the community (WHO, 2004).

Furthermore, mental health is constructed by three components: the emotional, psychological, and social well-being (Keyes, 2002). The emotional component concerns a cluster of symptoms which relates to the presence or absence of positive feelings about life.

Psychological well-being is more about the positive functioning in life. This positive functioning is associated with self-acceptance, purpose in life, and the autonomy of an individual. The last component, social well-being, is identical with theoretical frameworks on the societal level, such as social support (Keyes, 2002).

According to Lorant et al. (2003) ethnicity could be associated with mental health. Citizens with a migration background are more likely to have a lower perceived mental health than the ethnic majority (WHO, 2004). The Chinese migrants in the Netherlands are no exception to this statement, while it is not yet clear why these Chinese migrants perceive lower mental health (Gijsberts, Huijnk & Vogels, 2011). Although, there are several factors which may be related, such as acculturation (Arrindell & Albersnagel, 1999).

Acculturation

Acculturation is defined as a two-fold process of change on cultural and psychological level (Berry, 2005). This mechanism occur after the moment of contact between two or more cultural groups and corresponding individuals. Acculturation is inevitable for migrants, because migrating individuals will always come into contact with others inhabiting different cultures (Sam & Berry, 2006). Furthermore, because Chinese migrants are an ethnic minority in the Netherlands, they could face a unique form of 'minority stress', only because of their minority status (Rodriguez, Myers, Morries & Cardoza, 2000). According to the 'minority stress model', this stress would be the result of internalized negative attitudes, exclusion, and discrimination (Meyer, 2003). Pearlin (1989) added that disadvantaged individuals, including minority groups, would have an increased risk of developing mental problems compared to the native majority (Schouten, Knipscheer, Van de Schoot & Woertman, 2011).

In an earlier study, Berry (1980) stated that not all individuals experience the same acculturation. There are differences in how individuals pursue to engage the process, the so-called: acculturation strategies. Berry's (2005) acculturation model suggests that there are two independent dimensions in which migrants can cope with their position as an ethnic and cultural minority. Firstly, identification with the original minority culture, and, secondly, identification with the host culture. The choices migrants make regarding these dimensions lead to one of the four acculturation strategies, as can be seen in figure 1. These strategies are: 1) *integration*, equal identification with both cultures, 2) *assimilation*, more identification with the host culture, 3) *separation*, more identification with the original minority culture, and 4) *marginalization*, little to none identification with both cultures.

Therefore, acculturation results more or less in social-cultural integration. The

confrontation of migrants with the culture of the host country could lead to stress and conflict situations (Knipscheer & Kleber, 2004), which could have a negative influence on the mental health (Bhugra, 2004). Which acculturation strategy Chinese migrants in the Netherlands might prefer, is still unknown. However, empirical research regarding immigrants in general have shown that it is a common phenomenon that immigrants in a multicultural society mostly have a preference for the integration strategy (Van Oudenhoven, Prins & Buunk, 1998).
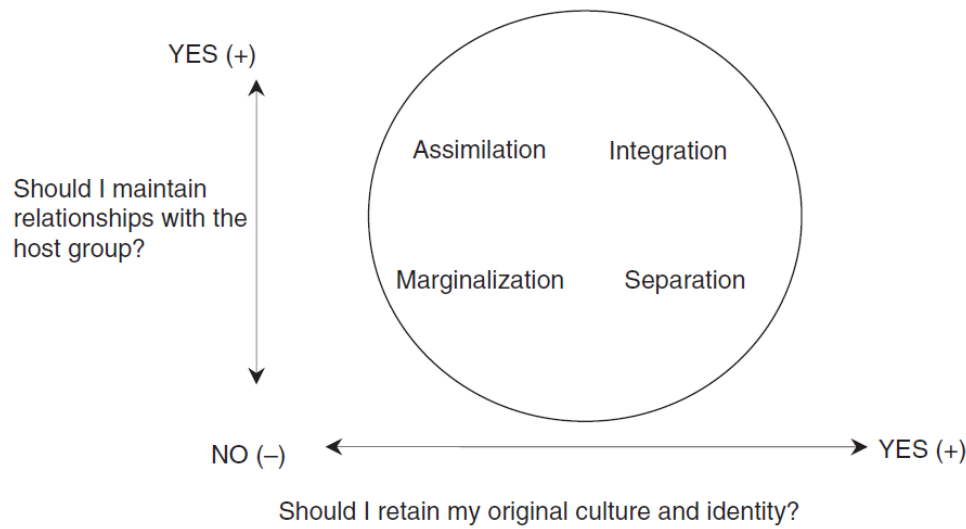

Figure 1. Acculturation strategies. Adapted from "Immigration, acculturation, and adaptation", by Berry, J.W., 1997, *Applied Psychology*, 46(1), 5-34.

Language proficiency

According to Arcia et al. (2001), mainstream language proficiency[1] is the most frequently used, and most robust indicator for measuring acculturation. Communication with people from the host country could be very useful, because conversations could make it easier to acculturate (Jacobs & Tillie, 2004). In addition, the social skills model of cultural adjustment of Furnham and Bochner (1986, as stated in Mehta, 1998) exists of a distinction between cultural skills and values. Acculturation should rather be a matter of learning cultural practices of the host society, than just adapting your norms and values. Thus, a necessity, and important cultural skill, is becoming proficient in the host country's language (Mehta, 1998). The level of social participation may be a useful acculturation tool because it could help, for instance, when one needs to carry out a job interview. A successful interview could lead to a job, which could benefit your socio-economic status. A higher status and being more associated with

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[1] Proficiency of the dominant host country language.

participation into society could be positively related with mental health (Mehta, 1998).

Because language could be used as a communication and socialize tool, it is a common facilitator for coming in contact with others (Choi & Thomas, 2009). Through language, people can gain access to, or being denied to, social contacts, and possibly broaden their social networks and resources. If migrants have mastered both the dominant and own cultural language, they could communicate with people from the own cultural group and with others who speak the mainstream language, like the native majority. This could further expand the amount of social contacts an individual can have (Zhang, 2008). However, most of the Chinese migrants in the Netherlands are likely to maintain the mother tongue (Gijsberts, Huijnk & Vogels, 2011). Compared to other migrant groups, such as the Surinamese and Moroccan, Chinese migrants have a backlog regarding language proficiency. Gijsberts, Huijnk and Vogels (2011) suggests that Chinese migrants speak little Dutch at home. Besides, it is assumed that the other way around would not necessarily have to be associated with each other. If none of your social contacts master the dominant language properly, then improving language proficiency would be more difficult. Therefore, more social contacts would not imply more language proficiency. Therefore, a higher level of Dutch language proficiency by Chinese migrants could expand the quantity of how many social contacts they could have (Choi & Thomas, 2009; Zhang, 2008).

Furthermore, language proficiency is also a prevalent predictor of choosing an acculturation strategy (Lu, Samaratunge & Härtel, 2011). Dominant language proficiency could facilitate migrants in being socially embedded in social networks where the mainstream language is spoken. Therefore, it could also be related to integration into host society (Jacobs & Tillie, 2004). Migrants who master the mainstream language inadequately, often desire to be with their own cultural group, in which they can apply their mother tongue. Because language could be seen as a reflection one's culture, language proficiency could be associated with acculturation and social networks of individuals (Zhang, 2008). According to this paragraph, high levels of mainstream language proficiency would be associated with social contacts based on the integration acculturation strategy. Low fluency in the mainstream language would be related to social contacts based on separation (Berry et al., 1989, as described in Lu, Samaratunge & Härtel, 2011).

Quantity of social contacts

Social contacts[2] could shape intergroup relations between different (ethnic) communities (Persons, 1987, as described in Padilla & Perez, 2003), because they can offer various resources and support, which could contribute in helping individuals to participate and progress in society (House, Umberson & Landis, 1988). Participating in society would imply making a contribution to the community, which could be related to a more positively perceived mental health (WHO, 2004). Furthermore, the support of social interactions of a social network has the potential to mitigate stress derived from acculturative processes. An individual may cope better with stress, when there is not too much to stress about (Lubben, 1998). This could also result in a more positively perceived mental health (WHO, 2004).

However, social contacts could also be in a negative relationship regarding perceived mental health. According to Politser (1980), social contacts could bring some obligations. This could result in perceiving unwanted pressure and tensions, which some individuals cannot control well. There may even be a feeling of disappointment, when social contacts do not satisfy the expected attention and support, which could have a negative influence on the mental health (Rook, 1989). In the context of Chinese migrants, more social contacts could imply more social pressure regarding caregiving of close ones in the community (Zhan, 2006). More social interactions with family, like parents, could also indicate more social pressure. For instance, some Chinese migrants' parents are likely to put their children under pressure to perform well in school (Gijsberts, Huijnk & Vogels, 2011).

Nature of social contacts

Social contacts could also be related with the social embedding in an ethnically heterogeneous or a homogeneous social network (Snel & Engbersen, 1999). According to Berry (1997), the type of acculturation could contribute to the emergence of two types of social contacts. These social contacts would be based on integration and separation, or more precisely, the effect of social contacts depends on these types.

Social contacts based on integration would indicate that the social contacts of an individual consists of contacts with individuals from different ethnic groups (Berry, 1997). This, therefore, would lead to a heterogeneous social network. Phinney et al. (2001) suggested that social contacts of individuals related to integration could have a positive influence on their mental health. This is further explained by Roccas, Horenczyk and Schwartz (2000). According to the integration strategy, ethnic minorities are trying to adapt themselves to being accepted in

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[2] In this research social contact is defined by the social interaction itself, not as a literal contact person.

society. A heterogeneous social network could offer various social and cultural resources, and support, which could make it easier to adapt to the new society. Phinney et al. (2001) stated that by forming a multicultural ideology through integration, participation in society would be easier. Participation in society would have a positive influence on the perceived mental health (Cicognani et al., 2007).

Unlike integration, social contacts associated with separation would have a negative influence on the mental health. For instance, social contacts of some Chinese migrants may mainly consist of people with a Chinese background, while contact with the rest of society is avoided (Berry, 1997). As a result, these Chinese migrants would perceive the world only from its own perspective (Verkuyten, 2007). This makes the minority group more sensitive to external factors that can damage group identity and is more likely to experience the threat from others. This could have a negative influence on the mental health (Schmitt, Spears, & Branscombe, 2003). In addition, separation would lead to a homogeneous social network, which could lead to a smaller chance of participating and moving forward in society (Engbersen, 2006). Less participation in society could lead to a lower perception of mental health (Cicognani et. al, 2007) and may result in more contradictions between own ideas and the expectations of the society (Roccas, Horenczyk & Schwartz, 2000). These contradictions could be experienced as tension and stress, which could be negatively associated with mental health.

However, being with the own cultural group could also be related to more comfort. According to the homophilia theory, individuals are likely to be with people who are similar to them. These similarities could be both in the socio-economic as in the cultural framework (Van Tubergen, 2015). This could explain why Chinese migrants would prefer to interact with other Chinese migrants than with native Dutch people. This comfortable safe feeling could be associated with a more positively perceived mental health (Umberson, & Karas Montez, 2010).

Hypotheses

Several hypotheses have been drawn up to answer the question what the relationship could be between language proficiency, quantity and nature of social contacts, and the perceived mental health of Chinese migrants in the Netherlands. The assumed relationships are visualized in figure 2.

H_1: There is a positive relationship between language proficiency and the perceived mental health of Chinese migrants.

H_{2a}: There is a positive relationship between quantity of social contacts and the perceived mental health of Chinese migrants.

H_{2b}: There is a negative relationship between quantity of social contacts and the perceived mental health of Chinese migrants.

H_{3a}: There is a positive relationship between the nature of social contacts and the perceived mental health of Chinese migrants.

H_{3b}: There is a negative relationship between the nature of social contacts and the perceived mental health of Chinese migrants.

H_4: The quantity of social contacts mediates the relationship between language proficiency and the perceived mental health of Chinese migrants.

H_5: The nature of social contacts mediates the relationship between language proficiency and the perceived mental health of Chinese migrants.
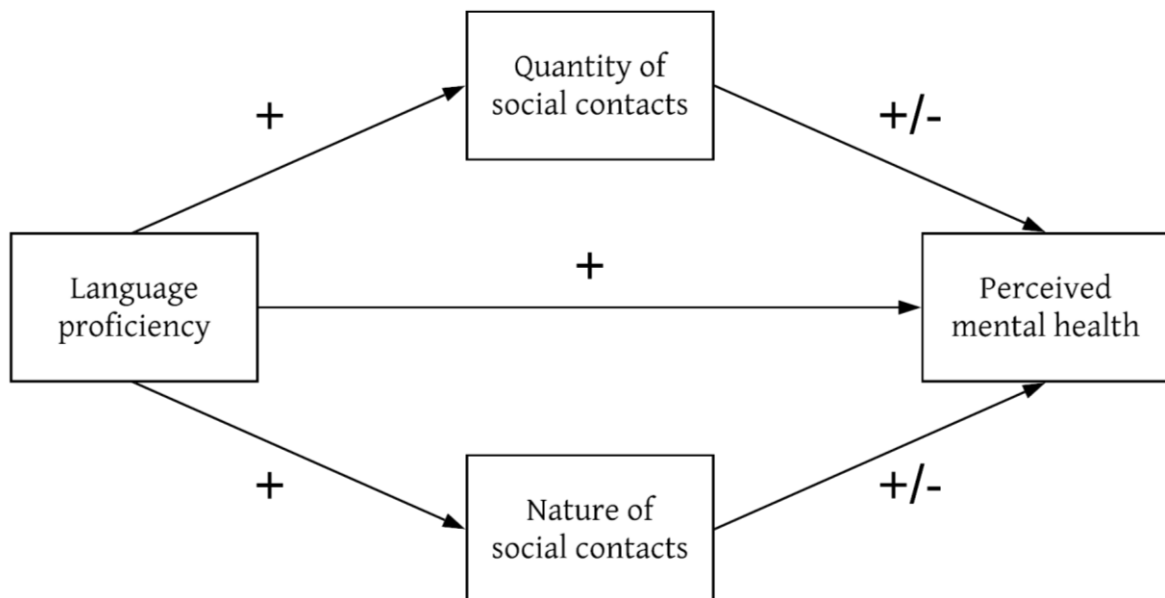

Figure 2. Conceptual hypotheses model.

Method

Participants

The dataset of the 'Survey Integratie Nieuwe Groepen 2009' (SING 2009) has been used to carry out this quantitative research (Hilhorst, 2010). To acquire this dataset a request of permission has been sent towards the owner, which sent the dataset after approval. First of all, the term 'migrant' in the current study encompasses both first- and second-generation migrants. An individual can be defined as a first-generation migrant when he or she is born abroad. When at least one of the parents is born abroad, this person can be defined as a second-generation migrant (CBS, 2016).

Approximately 7000 participants, of 15 years or older, cooperated in the SING 2009. This group involved seven ethnic groups: 1) Iranians, 2) Iraqis, 3) Afghans, 4) Somalis, 5) Poles, 6) Chinese and 7) native Dutch people. Each ethnic group consisted of approximately 1000 respondents, which contributed to generalize this data. To determine if an individual belongs to a particular ethnic group, respondents need to answer if they or one of their parents were born in the particular country.

Because this research only focusses on Chinese migrants, the use of data will be limited to that of the Chinese ($N = 1005$). 46.2% of these participants was male ($N = 464$), while there was a small majority of female respondents of 53.8% ($N = 541$). There has also been a distinction between first- and second-generation Chinese migrants. There were 773 first-generation respondents (77.9%) and 213 respondents (22.1%) of the second-generation ($M = 1.22$, $SD = .42$).

Based on the SIM 2006 data, it was assumed that immigrants who live in the Netherlands for less than five years have bigger chances on language deficiency. Therefore, in the SING 2009, respondents were divided into two groups: 1) long-term residents who were born in the Netherlands for five years or longer, and 2) short-term residents, who have been registered in the GBA for less than five years. More language problems were expected in the second group. Thus, to prevent any language problems, the short-term residents were approach as much as possible by interviewers from their own origin group.

Procedure

Before approaching the participants, a separate sample of persons was drawn for each target population, so seven in total. Each sample had a two-stage sampling design. In the first stage municipalities were randomly drawn, in the stage hereafter participants were randomly drawn within the selected municipalities.

A pilot version had been carried out in 2008. The most important adjustment that was needed to be implemented was the shortening of the amount of questions, the conversations took a bit longer than was expected. For the actual gathering of respondents, interviewers needed to go to the personal address of the participants. Telephonic contact was avoided because of possible refusals or secret phone numbers. Furthermore, there was a minimum of six contact moments with the same target, to maximize the success rate. This field work was carried out using a Computer Assisted Personal Interviewing (CAPI). After participation, respondents received a gift voucher worth ten euros.

Instruments

Because this research only focused on the perceived mental health of Chinese migrants, language proficiency, quantity and nature of social contacts, only the questions regarding those subjects have been considered as of importance (see Appendix A).

Demographics

The first section focused on demographics, which involved three questions about the ethnicity of participants. These were as follows: '*in which country were you born?,* and *in which country was your father / mother born?*'. Because there were answer options for both China and Hong Kong, these answer options has been taken together. At the same time it was possible to find out if the respondent was a first- or second-generation migrant. If respondents were born in China or Hong Kong, they were seen as first-generation migrants. If respondents were born in the Netherlands, and at least one of the parents was born in China or Hong Kong, then they were associated with second-generation migrants. Thereafter, there was a question about their gender in which they could choose for the options *male* or *female*.

Language proficiency

The second part was affiliated with three questions regarding their language proficiency. It was measured how well their Dutch language proficiency was, both in speaking, reading, and writing. One of these questions was as follows: '*If you have a conversation in Dutch, do you often, sometimes or never have trouble with the Dutch language?*' These items were measured on a 3-point scale that went from *yes, a lot of trouble\ I do not speak Dutch* (1) to *no, never* (3). In addition, a factor analysis was used to determine whether these items could be combined to form one main variable. A higher score meant better language proficiency (α = .93).

Quantity of social contacts

The following seven questions were related to the quantity of social contacts. These included meetings, telephone, and online contacts. An example of these questions is as follows: '*Can you indicate how often you have contact with: family members (who do NOT live in your home)?'*. These items were measured on a 6-point scale, of which the sixth answer option was defined as a missing. The answer options reached from *every day* (1) towards *never\ less than one time a year* (5), and *not applicable* (6). These answer options had to be reversed, so that these questions went in the same direction consistent with the other questions. Here again, a factor analysis was used to determine whether these items could be combined. A higher score indicated more contact (α = .71).

Nature of social contacts

Hereafter, there were two questions regarding the nature of their social contacts. These questions were as follows: '*Do you have more contact with native Dutch people or more with Chinese Dutch people in your free time?'*, and *'Do you have more contact with native Dutch people or more with Chinese Dutch people at work?*'. There were four answer options: *I do have more contact with Chinese Dutch people* (1), *I do have the same amount of contact with both groups* (2), *I do have more contact with native Dutch people* (3), and *I do not know* (4). Because only answer option 1 and 2 were valuable for current research, answer options 3 and 4 were defined as missings. A factor analysis was used to determine whether these items could be combined. A higher score indicated social contacts based on integration, while a lower score meant social contacts based on separation (α = 0.62).

Perceived mental health

The last section of the questionnaire covered the perceived mental health. Four questions were measured on a 5-point scale. The first two questions were related to a comparison of the perceived health of Chinese migrants and other people in the Netherlands, for instance: '*If you compare yourself with other Chinese in the Netherlands, do you have it better, about as good or worse than other Chinese in the Netherlands? (This is about the standard of living of people, not so much about the financial or social position of people. The standard of living reflects the circumstances in which a person lives. This also includes other factors that make a person happy to live with.)*' The answer options reached from *much better than others* (1) t*o much worse than* others (5). The third question was about how they would describe their own health with answer options from *very good* (1) to *very bad* (5). The last question was as follows: '*To what extent do you consider yourself a happy person?*' These answer options

went from *very happy* (1) to *unhappy* (5). These answer options had also been reversed, including a factor analysis to determine whether these items could be combined. A higher score indicated a more positively perceived mental health of these Chinese migrants ($\alpha = .65$).

Analysis

First of all, a frequency table of the gender, age, and generation of the Chinese migrants has been carried out using descriptive statistics in IBM SPSS Statistics 22 to get more insight. Afterwards, a bivariate correlation analysis has been pulled out. Firstly, with help of the aggregated independent variables: language proficiency, quantity of social contacts, nature of social contacts and dependent variable: perceived mental health. Thereafter, using the split files of generations and gender.

In order to ascertain whether it was possible to do a regression analysis with the dataset, it has been checked whether the four key assumptions of a regression have been met. These are respectively: a normally distributed dependent variable, a linear relationship between independent and dependent variables, the absence of multicollinearity, and the absence of outliers of all variables. With the exception of minor deviations, such as a slightly left-skewed normal distribution of the perceived mental health and small outliers regarding the standardized residuals, the conditions were generally met and the mediation test could be performed (Allen & Bennett, 2012).

The total, indirect and direct effects were measured using PROCESS v3.0 by Andrew F. Hayes, which could also be carried out in IBM SPSS Statistics 22. The total effect tested the relationship between the language proficiency and perceived mental health of Chinese migrants, while taking other factors into account. The indirect effects measured the same relationship, but then they were explained by quantity or nature of social contacts. At last, the direct effect examined the relationship between language proficiency and perceived mental health that was not   explained   by   the   possible   mediators   (Cruyff,   2018).

Results

Descriptive analyses

Table 1 shows the mean scores, standard deviations, and mutual correlations of the studied variables. These correlations differ between .05 and .32, of which the correlation between quantity of social contacts and nature of social contacts was the only insignificant one. This finding would imply that the quantity of social contacts do not correlate with the nature of social contacts. Moreover, this finding would support the conceptual hypothesis model (figure 2), because there has not been made an assumption that there could be a relationship between those two variables.

To gain more insight into these values, it was chosen to split the variables into first-generation and second-generation Chinese migrants, and also to segregate male and female respondents. It is interesting that table 2 displays no significance in any of the correlations regarding respondents of the second-generation, while there are significant correlations concerning first-generation respondents. Language proficiency seemed to have a significant correlation with quantity of social contacts among first-generation female respondents, but this is not the case with first-generation male respondents. Moreover, there is an insignificant correlation between quantity and nature of social contacts regarding both male and female first-generation respondents. There is even a negative correlation among first-generation female respondents.

Table 1

Descriptive statistics: the amount of respondents, means with standard deviations, and correlations (Pearson).

Variable	N	M (SD)	1	2	3
1. Language proficiency [a]	1003	2.01 (.81)	-		
2. Quantity of social contacts [b]	1001	2.96 (.84)	.14**	-	
3. Nature of social contacts [c]	656	.89 (.44)	.22**	.05	-
4. Perceived mental health [d]	1004	3.51 (.56)	.32**	.18**	.11**

Note. **$p < 0.01$ (2-tailed).
[a] 1 = low language proficiency; 3 = high language proficiency.
[b] 1 = low quantity of social contacts; 5 = high quantity of social contacts.
[c] 1 = separated homogenous contact; 2 = integrated heterogenous contact.
[d] 1 = negative perceived mental health; 5 = positive perceived mental health.

Table 2

Descriptive statistics: the amount of respondents, means with standard deviations, and correlations (Pearson) subdivided into first- and second-generation, male and female respondents.

	N	M (SD)	1	2	3
1st generation male respondents					
1. Language proficiency	339	1.74 (.75)	-		
2. Quantity of social contacts	337	2.81 (.89)	.08	-	
3. Nature of social contacts	263	.88 (.45)	.26**	.08	-
4. Perceived mental health	339	3.41 (.53)	.32**	.23**	.17**
1st generation female respondents					
1. Language proficiency	432	1.73 (.68)	-		
2. Quantity of social contacts	432	2.99 (.82)	.11*	-	
3. Nature of social contacts	306	.86 (.41)	.13*	-.02	-
4. Perceived mental health	433	3.48 (.59)	.26**	.14**	.06
2nd generation male respondents					
1. Language proficiency	115	2.95 (.19)	-		
2. Quantity of social contacts	115	3.23 (.79)	.06	-	
3. Nature of social contacts	49	1.09 (.53)	.10	.04	-
4. Perceived mental health	115	3.66 (.49)	.07	.12	-.07
2nd generation female respondents					
1. Language proficiency	104	2.90 (.29)	-		
2. Quantity of social contacts	104	3.03 (.66)	.12	-	
3. Nature of social contacts	33	.91 (.34)	.11	.03	-
4. Perceived mental health	104	3.79 (.44)	.11	.03	.07

Note. $*p < .05$ (2-tailed), $**p < 0.01$ (2-tailed).

Total effect of language proficiency on perceived mental health

The regression analysis showed significance in the relationship between language proficiency and the perceived mental health of Chinese migrants, $b = .19$, $R^2 = .02$, $t(654) = 3.95$, $p < .001$. Its effect size of .02 is rather small, while the significance is strong. The total effect[3] of language proficiency on perceived mental health can be seen in figure 3 (path C) and in table 3. This would imply that more language proficiency could be related to a more positively perceived mental health of Chinese migrants when the other two factors are taken into account.

*Indirect effect via quantity of social contacts*

In figure 3 (path A and B) and table 3 (indirect effect AB) the indirect effect between language proficiency and perceived mental health explained by quantity of social contacts has been analyzed. The confidence interval regarding indirect effect AB (table 3) does not contain that value of zero, which implies that there is significance in indirect effect AB. Moreover,

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[3] Explanation of total, indirect and direct could be found in the Method: analysis (page 13-14).

examining path A and B apart from each other, there is significance in both paths. Path A, $b = .17$, $R^2 = .02$, $t(654) = 3.95$, $p < 0.001$, and path B, $b = .08$, $R^2 = .11$, $t(652) = 3.41$, $p < 0.001$. Therefore, a mediation exists in this model. With the aid of the direct effect it is also possible to check if there is a full or partial mediation. In the case of the mediation via quantity of social contacts, there is a significant direct effect (see table 3), which implies that it is a partial mediation.

Indirect effect via nature of social contacts

At last, the indirect effect explained by the nature of social contacts was examined, as can be seen in path D and E (figure 3) and in table 3. However, unlike indirect effect AB, the coincidence interval of indirect effect DE contains the value of zero. Therefore, there is no significance in indirect effect DE. In addition, if path D and E were investigated apart from each other, path D is actually significant, $b = .13$, $R^2 = .05$, $t(654) = 5.79$, $p < 0.001$. However, path E is not significant, $b = .05$, $R^2 = .11$, $t(652) = 1.11$, $p = .27$.
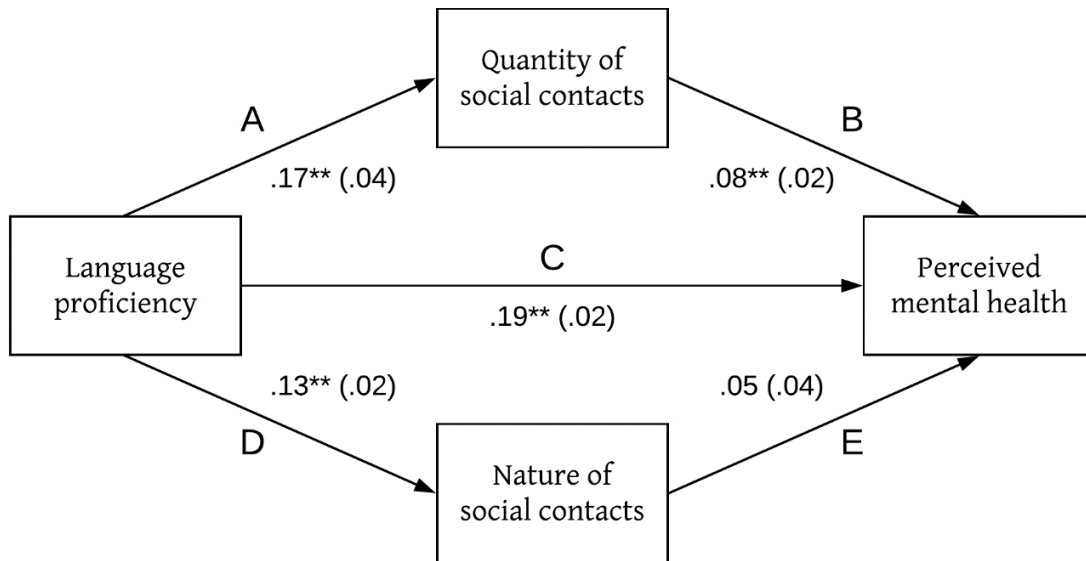
Note. Regression coefficients (*b*) with standard errors in parentheses (*se*) are illustrated.
**$p < .001$ (2-tailed).

Figure 3. The total effect (C), indirect effect AB, and indirect effect DE regarding the relationship between language proficiency and perceived mental health.

Table 3

Overview of regression analyses regarding the total, indirect and direct effect.

	b (se)	t	p	R^2	Lower limit CI[a]	Upper limit CI[a]
Total effect	.19 (.02)	8.06	.01***	.09	.15	.24
Indirect effect AB	.01				.01	.02
Indirect effect DE	.01				-.01	.02
Direct effect	.18 (.03)	7.10	.01***		.13	.23

Note. $N = 656$.

***$p < .001$ (2-tailed).

[a] With a 95%-Confidence interval.

Discussion

Overview of findings

This study offers new insights into how Dutch language proficiency of Chinese migrants and the quantity and nature of their social contacts could be related to their perceived mental health. Due to the lack of Dutch literature concerning these concepts, it is important to discuss the findings applied with existing knowledge. To make the approach of the hypotheses understandable, it has been decided to cover them up into four sections.

Dutch language proficiency and perceived mental health

In general, researchers have agreed that mainstream language proficiency could be positively related to mental health (Arcia et al., 2001; Mehta, 1998). The finding of a significant positive relationship between these concepts is in line the literature and with hypothesis 1. Moreover, the findings show an average proficiency of language, while perceiving a slightly positive mental health.

However, there are some differences within this sample. The biggest difference can be found in the insignificant correlations between all variables[4] regarding respondents of the second-generation. In the beginning of this study it had not been considered that there could be generation differences. Both female and male second-generation groups have a high average of language proficiency. This could indicate that improving their Dutch would not be related to their perceived mental health, because they could have already mastered the language. Furthermore, it could even be possible that second-generation respondents do not master the Chinese language, which had also not been considered before.

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[4] All variables: language proficiency, quantity of social contacts, nature of social contacts, perceived mental health.

Quantity of social contacts and perceived mental health

The amount of social contacts could be both positively and negatively be related to perceived mental health. According to WHO (2004) social interactions have the possibility to offer resources which could contribute to participate in society. This could have a positive influence on the perceived mental health (House, Umberson & Landis, 1998; Lubben, 1998).

On the other hand, more social contacts could also be associated with experiencing more social pressure of having more social contacts (Politser, 1980; Zhan, 2006; Gijsberts, Huijnk & Vogels, 2011). Because of these divergent findings of literature, there were drawn up two hypotheses: 2a with a positive relationship and 2b with a negative relationship.

Current research showed a significant positive relationship between quantity of social contacts, which supports hypothesis 2a and rejects hypothesis 2b. This would imply that more social interactions could be related to a more positively perceived mental health. The average of quantity of social contacts of the second-generation respondents is slightly higher than that of the first-generation, while the correlation is not significant. This may indicate that their amount of social interactions does not necessarily contribute in participating in society or mitigating stress.

Nature of social contacts and perceived mental health

Social contacts based on integration could lead to a heterogeneous social network. This network could offer various resources and support, which could make it easier to adapt to society. Adaptation to, and participation in, society would be positively associated with perceived mental health (Berry, 1997; Phinney et al., 2001; Cicognani et al., 2007).

On the other hand, social contacts based on separation could lead to a homogeneous social network. This could lead to seeing the world only from your own group perspective. Then it is more likely to experience threat from others, which could have a negative influence on the perceived mental health (Berry, 1997; Verkuyten, 2007; Engbersen, 2006). Because there are, again, divergent findings of literature, there have been conducted two hypotheses: 3a involved a positive relationship and 3b a negative relationship.

The findings of the current study displays a positive insignificant relationship between the nature of social contacts and perceived mental health. This would reject both hypotheses 3a and 3b. This implies that the nature of social contacts, and if one is mostly in heterogenous or homogeneous social networks, is not related to perceived mental health. Furthermore, most of the respondents were more likely to have social contacts based on separation. However, the homophilia theory is not applicable because there is a positive regression coefficient (figure 3).

This would mean that more integrated social contacts would be associated with a more positively perceived mental health.

There are a few explanations which could clarify this insignificance. First of all, in the original survey there were four answer options, while in the analysis it was reduced to two answers. Because of this reduction, the amount of respondents dropped to 656, which is still a big number. Secondly, there were only two questions concerning the variable of the nature of social contacts. In line with this small amount of questions, its Cronbach's alpha was .62, which is a questionable value.

Mediation paths

Because language proficiency could be associated with both quantity of social contacts (Choi & Thomas, 2009; Zhang, 2008) and nature of social contacts (Lu, Samaratunge & Härtel, 2011; Zhang, 2008), these two factors may function as mediators.

The significant indirect effect AB (table 3) indicates that there is a mediating role of the quantity of social contacts. However, because there is also a significant direct effect of language proficiency on the perceived mental health, it is a partial mediation. This implies that the quantity of social contacts could be accounted for some, but not all, of the relationship between language proficiency and perceived mental health. At the same time, this finding supports the positive relationship between language proficiency and quantity of social contacts, which is in line with the conclusions of Choi and Thomas (2009) and Zhang (2008).

Regarding indirect effect DE (table 3) there is no significant effect. So, the relationship between language proficiency and perceived mental health could not be explained by the nature of social contacts. However, there is a positive significant relationship between language proficiency and the nature of social contacts. According to current study, higher proficiency of Dutch could lead to more social contacts based on integration, which is in line with Jacobs and Tillie (2004).

Limitations

The findings of this research should be interpreted with its strengths, but also with limitations, in mind. Strengths could be found in the scientific gap that this research is trying to fill in, its significant relationships and the large amount of respondents. However, there was a cross-sectional survey handed out, which cannot permit causal statements. Causality is in any case at stake because causality could only really be obtained via experiments. Another limitation would be the year when the survey was filled in, which was in 2009. Ten years ago, Chinese migrants could have different perceptions about the variables which were discussed in this research. This

would affect both the internal and external validity. So, it would be good recommendation for further research to test this questionnaire again.

Moreover, there has not been any distinction between first-generation and second-generation, and male and female respondents in the regression analysis. Moreover, respondents with a migration background from China and Hong Kong were taken together, which may have affected external validity. At last, there has not been made a distinction between different age groups in current study. Interventions regarding youth migrants may differ from those which are focused on the elderly. Further research could look into the differences between this groups for more insights regarding Chinese migrants.

Furthermore, regarding the assumption analysis, the perceived mental health variable was measured with three different answer options. Respondents could answer: 1) if they had it better or worse than others, 2) if their health was very good or very bad, and 3) if they perceive themselves as very happy or unhappy. This could have affected the internal validity, however a higher score would indicate the same on all items, namely a more positively perceived mental health. The assumption of absence of outliers was also a bit exceeded. This was checked by looking at the standardized residuals. These should be between the limit values of -3 and 3, while the residual statistics were -3.84 and 3.19. Further research could be more focused on using questions in the survey with the same answer options.

Conclusion

This examination of the acculturation of Chinese migrants and their perceived mental health broadens the literature on the little researched migrant group. We can conclude that language proficiency has a positive relationship with perceived mental health, quantity of social contacts, and nature of social contacts. Further research should focus more on language proficiency and how this could be implemented in social policies and interventions. Moreover, the quantity of social contacts could even have a mediating role regarding the relationship between language proficiency and perceived mental health of Chinese migrants. Hopefully, this study will motivate other researchers to proceed with the start of filling the research gap regarding Chinese migrants in the Netherlands. Some may think that Chinese migrants are doing well in Dutch society and perhaps do cause little inconvenience, but this must not mean that we should not study this phenomenon. We may use the basis for the success of the Chinese migrant group to facilitate other migrants groups with knowledge and interventions regarding acculturation and healthcare.

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[5] Source from Blackboard (not publicly accessible).

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Appendices

Appendix A: Adjusted translated SING questionnaire[6]

<u>Demographics</u>

1) I will start with asking some questions about you and your family. In which country were you born?
1. Afghanistan
2. Iraq
3. Iran
4. Somalia
5. Poland
6. China
7. Hongkong
8. The Netherlands
9. Another country: …

2) In which country was your father born?
1. Afghanistan
2. Iraq
3. Iran
4. Somalia
5. Poland
6. China
7. Hongkong
8. The Netherlands
9. Another country: …

3) In which country was your mother born?
1. Afghanistan
2. Iraq
3. Iran
4. Somalia
5. Poland
6. China
7. Hongkong
8. The Netherlands
9. Another country: …

4) Fill in the gender of the respondent, it is not necessary to ask this
1. Male
2. Female

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[6] The questionnaire has only been translated due to the use of English in this study. There has only been made use of questions which could be associated with the concepts of this study. The survey in original Dutch language can be found in appendix B.

<u>Language proficiency</u>

6) If you have a conversation in the Dutch language, do you often, sometimes or never, have trouble with speaking Dutch?
1. Yes, a lot of trouble\ I do not speak Dutch
2. Yes, sometimes\ a little bit
3. No, never

7) When you read newspapers, letters or brochures, do you often, sometimes or never, have trouble understanding the Dutch language?
1. Yes, a lot of trouble
2. Yes, sometimes\ a little bit
3. No, never

8) And do you have trouble writing in Dutch?
1. Yes, a lot of trouble
2. Yes, sometimes\ a little bit
3. No, never

<u>Quantity of social contacts</u>

9) The following questions are about social contacts. This includes meetings, telephone, but also online contacts like through e-mail. Can you indicate how often you have contact with: family members (who do NOT live in your home)?
1. Every day
2. Every week
3. Every month
4. A few times a year
5. Never\ less than one time a year
9. Not applicable

10) And how often do you have contact with: male friends or female friends?
1. Every day
2. Every week
3. Every month
4. A few times a year
5. Never\ less than one time a year
9. Not applicable

11) And how often do you have contact with: neighbours or other people from your neighbourhood?
1. Every day
2. Every week
3. Every month
4. A few times a year
5. Never\ less than one time a year
9. Not applicable

12) How often do you have contact with: Chinese friends?
1. Every day
2. Every week
3. Every month
4. A few times a year
5. Never\ less than one time a year
9. Not applicable

13) How often do you have contact with: Chinese neighbours or Chinese people from your neighbourhood?
1. Every day
2. Every week
3. Every month
4. A few times a year
5. Never\ less than one time a year
9. Not applicable

14) How often do you have contact with: native Dutch friends?
1. Every day
2. Every week
3. Every month
4. A few times a year
5. Never\ less than one time a year
9. Not applicable

15) How often do you have contact with: native Dutch neighbours or native Dutch people from your neighbourhood?
1. Every day
2. Every week
3. Every month
4. A few times a year
5. Never\ less than one time a year
9. Not applicable

Nature of social contacts

16) Do you have more contact with native Dutch people or more with Chinese people in your leisure?
1. I do have more contact with Chinese Dutch people
2. I do have the same amount of contact with both
3. I do have more contact with native Dutch people
7. I do not know

17) Do you have more contact with native Dutch people or more with Chinese people at work?
1. I do have more contact with Chinese Dutch people
2. I do have the same amount of contact with both
3. I do have more contact with native Dutch people
7. I do not know

Perceived mental health

18) The following questions are about your standard of living. It is not only about how much money you have, but also about how you live, which social contacts you have and whether you can do pleasant things in your leisure time. If you compare yourself with other people in the Netherlands, do you think that you have it better, about as good or worse than other people?
1. Much better than others
2. A bit better
3. Almost the same as others
4. A bit worse
5. Much worse than others

19) If you compare yourself with other Chinese migrants in the Netherlands, do you think that you have it better, about as good or worse than other Chinese migrants in the Netherlands? (This is about the standard of living of people, not so much about the financial or social position of people. The standard of living reflects the circumstances in which a person lives. This also includes other factors that make a person happy to live with.)
1. Much better than others
2. A bit better
3. Almost the same as others
4. A bit worse
5. Much worse than others

20) How would you describe your health?
1. Very good
2. Good
3. Not good, not bad
4. Bad
5. Very bad

21) To what extent do you consider yourself a happy person?
1. Very happy
2. Happy
3. Not happy, not unhappy
4. Not very happy
5. Unhappy

Appendix B: Adjusted original Dutch language SING questionnaire

<u>Demografische gegevens</u>

Vr. 50 Ik stel u eerst wat vragen over u en uw gezin. In welk land bent u geboren?
1. Afghanistan
2. Irak
3. Iran
4. Somalië
5. Polen
6. China
7. Hongkong
8. Nederland
9. ander land, nl: …

Vr. 60 In welk land is uw vader geboren?
1. Afghanistan
2. Irak
3. Iran
4. Somalië
5. Polen
6. China
7. Hongkong
8. Nederland
9. ander land, nl: …

Vr. 70 In welk land is uw moeder geboren?
1. Afghanistan
2. Irak
3. Iran
4. Somalië
5. Polen
6. China
7. Hongkong
8. Nederland
9. ander land, nl: …

Vr. 80 ENQ.: vul het geslacht van de respondent in, dit hoeft u niet te vragen
1. man
2. vrouw

Taalbeheersing

Vr. 1830: Heeft u, als u een gesprek in het Nederlands heeft, vaak, soms of nooit moeite met de Nederlandse taal?
1. ja, vaak moeite\spreekt geen Nederlands
2. ja, soms\een beetje
3. nee, nooit

Vr. 1840: Heeft u bij het lezen van kranten, brieven of folders vaak, soms of nooit moeite om de Nederlandse taal te begrijpen?
1. ja, vaak moeite
2. ja, soms\een beetje
3. nee, nooit

Vr. 1850: En heeft u moeite met het schrijven in het Nederlands?
1. ja, vaak moeite
2. ja, soms\een beetje
3. nee, nooit

Hoeveelheid sociale contacten

Vr. 2560: De volgende vragen gaan over sociale contacten. Het gaat daarbij om ontmoetingen, telefonische en schriftelijke contacten, maar ook om contacten per e-mail.
Kunt u aangeven hoe vaak u contact heeft met: familieleden (die NIET bij u in huis wonen)?
1. elke dag
2. elke week
3. elke maand
4. een paar keer per jaar
5. nooit\minder dan 1 keer per jaar
9. niet van toepassing

Vr. 2570: En hoe vaak heeft u contact met: vrienden, vriendinnen of echt goede kennissen?
1. elke dag
2. elke week
3. elke maand
4. een paar keer per jaar
5. nooit\minder dan 1 keer per jaar
9. niet van toepassing

Vr. 2580: En hoe vaak heeft u contact met: buren of buurtgenoten?
1. elke dag
2. elke week
3. elke maand
4. een paar keer per jaar
5. nooit\minder dan 1 keer

Vr. 2590 Hoe vaak heeft u contact met: Chinese vrienden of kennissen?
1. elke dag
2. elke week
3. elke maand
4. een paar keer per jaar
5. nooit\minder dan 1 keer per jaar
9. niet van toepassing

Vr. 2600: Hoe vaak heeft u contact met: Chinese buren of Chinese mensen in uw buurt?
1. elke dag
2. elke week
3. elke maand
4. een paar keer per jaar
5. nooit\minder dan 1 keer per jaar
9. niet van toepassing

Vr. 2610: Hoe vaak heeft u contact met: autochtone vrienden of kennissen
1. elke dag
2. elke week
3. elke maand
4. een paar keer per jaar
5. nooit\minder dan 1 keer per jaar
9. niet van toepassing

Vr. 2620: Hoe vaak heeft u contact met: autochtone buren of buurtgenoten
1. elke dag
2. elke week
3. elke maand
4. een paar keer per jaar
5. nooit\minder dan 1 keer per jaar
9. niet van toepassing

De aard van sociale contacten

Vr. 2640: Heeft u in uw vrije tijd meer contact met autochtone Nederlanders of meer met Chinese Nederlanders?
1. ik heb meer contact met Chinese Nederlanders
2. ik heb met beiden evenveel contact
3. ik heb meer contact met autochtone Nederlanders
9. weet niet \ geen antwoord

Vr. 2650: Heeft u op uw werk meer contact met autochtone Nederlanders of meer met Chinese Nederlanders
1. ik heb meer contact met Chinese Nederlanders
2. ik heb met beiden evenveel contact
3. ik heb meer contact met Nederlanders
7. weet niet

Ervaren mentale gezondheid

Vr. 1770 De volgende vragen gaan over uw levensstandaard. Het gaat niet alleen om hoeveel geld u heeft, maar ook bijvoorbeeld om hoe u woont, welke sociale contacten u heeft en of u prettige dingen kunt doen in uw vrije tijd. Als u zichzelf vergelijkt met andere mensen in Nederland, heeft u het dan beter, ongeveer even goed of slechter dan andere mensen?
1. veel beter dan andere mensen
2. iets beter
3. ongeveer even goed als andere mensen
4. iets slechter
5. veel slechter dan andere mensen

Vr. 1780 Als u zichzelf vergelijkt met andere Chinezen in Nederland, heeft u het dan beter, ongeveer even goed of slechter dan andere Chinezen in Nederland? (ENQ.: Het gaat hier om de levensstandaard van mensen, niet zozeer om de financiële of maatschappelijke positie van mensen. De levensstandaard geeft de omstandigheden weer waaronder iemand leeft. Hierbij tellen ook andere factoren die maken dat iemand prettig kan leven mee.)
1. veel beter
2. iets beter
3. ongeveer even goed
4. iets slechter
5. veel slechter

Vr. 2120 Ik wil het nu met u hebben over uw gezondheid. Hoe goed is over het algemeen uw gezondheid? Is deze...?

1. zeer goed
2. goed
3. gaat wel
4. slecht
5. zeer slecht

Vr. 3110 In welke mate vindt u zichzelf een gelukkig mens? Is dat: (ENQ.: lees voor)

1. erg gelukkig
2. gelukkig
3. niet gelukkig, niet ongelukkig
4. niet zo gelukkig
5. Ongelukkig

Appendix C: Syntax regarding data analysis

*open dataset.

*Chinese migratieachtergrond afbakenen.

DATASET ACTIVATE DataSet1.

USE ALL.

COMPUTE filter_$=((etngrp = 6)).

VARIABLE LABELS filter_$ '(etngrp = 6) (FILTER)'.

VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.

FORMATS filter_$ (f1.0).

FILTER BY filter_$.

EXECUTE.

*Ompolen van hoeveelheid contact en ervaren mentale gezondheid.

RECODE contfam contvrie contbuur contall contball contaut contbaut lvstnl lvstlvh gezondh geluk

   (1=5) (2=4) (3=3) (4=2) (5=1) INTO OPcontfam OPcontvrie OPcontbuu OPcontall OPcontball OPcontaut

   OPcontbaut OPlvstnl OPlvstlvh OPgezondh OPgeluk.

EXECUTE.

*descriptives analyse.

DESCRIPTIVES VARIABLES=etngrp geslacht lftcat3

  /STATISTICS=MEAN STDDEV MIN MAX.

*frequencies analyse.

FREQUENCIES VARIABLES=etngrp geslacht lftcat3

 /STATISTICS=STDDEV MINIMUM MAXIMUM

 /HISTOGRAM NORMAL

 /ORDER=ANALYSIS.

*factoranalyse alle vragen mbt ervaren mentale gezondheid.

FACTOR

 /VARIABLES OPlvstnl OPlvstlvh OPgezondh OPgeluk

 /MISSING LISTWISE

 /ANALYSIS OPlvstnl OPlvstlvh OPgezondh OPgeluk

 /PRINT INITIAL CORRELATION SIG KMO EXTRACTION ROTATION

 /PLOT EIGEN

```
  /CRITERIA MINEIGEN(1) ITERATE(25)

  /EXTRACTION PC

  /CRITERIA ITERATE(25)

  /ROTATION VARIMAX

  /METHOD=CORRELATION.
```

*cronbachs alpha.erv mentale gezondheid.

DATASET ACTIVATE DataSet1.

RELIABILITY

```
  /VARIABLES=OPlvstnl OPlvstlvh OPgezondh OPgeluk

  /SCALE('ALL VARIABLES') ALL

  /MODEL=ALPHA

  /STATISTICS=DESCRIPTIVE SCALE

  /SUMMARY=TOTAL.
```

*variabele ervaren mentale gezondheid aanmaken.

COMPUTE ErvMentgezondheid=SUM(OPlvstnl,OPlvstlvh,OPgezondh,OPgeluk) / 4.

EXECUTE.

*factoranalyse taalbeheersing.

FACTOR

```
  /VARIABLES taalgesp taalkran taalpen

  /MISSING LISTWISE

  /ANALYSIS taalgesp taalkran taalpen

  /PRINT INITIAL CORRELATION SIG KMO EXTRACTION ROTATION

  /PLOT EIGEN

  /CRITERIA MINEIGEN(1) ITERATE(25)

  /EXTRACTION PC

  /CRITERIA ITERATE(25)

  /ROTATION VARIMAX

  /METHOD=CORRELATION.
```

*cronbachs alpha taalbeheersing.

RELIABILITY

```
  /VARIABLES=taalgesp taalkran taalpen

  /SCALE('ALL VARIABLES') ALL
```

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE

/SUMMARY=TOTAL.

*variabele taalbeheersing maken.

DATASET ACTIVATE DataSet1.

COMPUTE taalbeheersing=SUM(taalgesp,taalkran,taalpen) / 3.

EXECUTE.

*factoranalyse frequentiecontact.

FACTOR

  /VARIABLES OPcontfam OPcontvrie OPcontbuu OPcontall OPcontball OPcontaut
OPcontbaut

  /MISSING LISTWISE

  /ANALYSIS OPcontfam OPcontvrie OPcontbuu OPcontall OPcontball OPcontaut
OPcontbaut

  /PRINT INITIAL CORRELATION SIG KMO EXTRACTION ROTATION

  /PLOT EIGEN

  /CRITERIA MINEIGEN(1) ITERATE(25)

  /EXTRACTION PC

  /CRITERIA ITERATE(25)

  /ROTATION VARIMAX

  /METHOD=CORRELATION.

*cronbachs alpha freqcontact.

RELIABILITY

  /VARIABLES=OPcontfam OPcontvrie OPcontbuu OPcontall OPcontball OPcontaut
OPcontbaut

  /SCALE('ALL VARIABLES') ALL

  /MODEL=ALPHA

  /STATISTICS=DESCRIPTIVE SCALE

  /SUMMARY=TOTAL.

*freq contact variabele maken.

COMPUTE kwanticont=SUM(OPcontfam, OPcontvrie, OPcontbuu, OPcontall, OPcontball,
OPcontaut, OPcontbaut) / 7.

EXECUTE.

*CONTACTV EN CONTACTW 3 ALS MISSING HANDMATIG DOEN.

*factoranalyse nature of contact.

FACTOR

  /VARIABLES contactv contactw

  /MISSING LISTWISE

  /ANALYSIS contactv contactw

  /PRINT INITIAL CORRELATION SIG KMO EXTRACTION ROTATION

  /PLOT EIGEN

  /CRITERIA MINEIGEN(1) ITERATE(25)

  /EXTRACTION PC

  /CRITERIA ITERATE(25)

  /ROTATION VARIMAX

  /METHOD=CORRELATION.

*conrbachs alpha nature contact.

RELIABILITY

  /VARIABLES=contactv contactw

  /SCALE('ALL VARIABLES') ALL

  /MODEL=ALPHA

  /STATISTICS=DESCRIPTIVE SCALE

  /SUMMARY=TOTAL.

*naturecontat variabele aanmaken.

COMPUTE naturecontact=SUM(contactv,contactw) / 2.

EXECUTE.

*correlaties.

DATASET ACTIVATE DataSet1.

CORRELATIONS

  /VARIABLES=ErvMentgezondheid taalbeheersing kwanticont naturecontact

  /PRINT=TWOTAIL NOSIG

  /STATISTICS DESCRIPTIVES

  /MISSING=PAIRWISE.

*ASSUMPTIES TOETSEN.

* Te beginnen met normally distributed ervaren mentale gezondheid.

EXAMINE VARIABLES=ErvMentgezondheid

  /PLOT BOXPLOT HISTOGRAM NPPLOT

  /COMPARE GROUPS

  /STATISTICS DESCRIPTIVES

  /CINTERVAL 95

  /MISSING LISTWISE

  /NOTOTAL.

*andere assumpties.

REGRESSION

  /DESCRIPTIVES MEAN STDDEV CORR SIG N

  /MISSING LISTWISE

  /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP

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

  /NOORIGIN

  /DEPENDENT ErvMentgezondheid

  /METHOD=ENTER taalbeheersing kwanticont naturecontact

  /SCATTERPLOT=(*ZRESID ,*ZPRED)

  /RESIDUALS NORMPROB(ZRESID)

  /CASEWISE PLOT(ZRESID) OUTLIERS(3)

  /SAVE COOK.

*PROCESS uitvoeren met alle Mediators erin.

*geslacht en generaties uitsplitten.

DATASET ACTIVATE DataSet1.

SORT CASES BY generat geslacht.

SPLIT FILE LAYERED BY generat geslacht.

*nieuwe correlatie analyse met gesplitste geslacht en generatie.

CORRELATIONS

  /VARIABLES=generat geslacht ErvMentgezondheid taalbeheersing kwanticont naturecontact

  /PRINT=TWOTAIL NOSIG

```
  /STATISTICS DESCRIPTIVES
  /MISSING=PAIRWISE.
*Eerst weer terugsplitten en dan Frequencies generations.
SPLIT FILE OFF.
FREQUENCIES VARIABLES=generat
  /STATISTICS=STDDEV MINIMUM MAXIMUM MEAN
  /HISTOGRAM NORMAL
  /ORDER=ANALYSIS.
```