Beyond the native bias

Master thesis about explanations of differences in the prevalence of hypertension and diabetes between Dutch citizens with and without a non-Western migration background.

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Abstract

In medical research, explanations of ethnical differences in the prevalence of hypertension and diabetes generally do not go beyond the influence of genetics. Moreover, the statistical samples used in these studies do not represent the variety of ethnic backgrounds that are present in the Netherlands. For this reason, this thesis has studied the relationship between migration background and the prevalence of hypertension and diabetes, and it has examined whether socioeconomic status and the amount of confidence in healthcare that Dutch citizens with and without a migration background experience could explain this relationship. This is done by conducting multiple (log)linear regression analyses with data from the LISS Immigrant Panel, which have shown that Dutch citizens with a non-Western migration background are at higher risk of developing hypertension and diabetes than Dutch natives. However, differences in socioeconomic status and confidence in healthcare could not explain these relationships. For this reason, the main recommendation for future research is to perform large-scale analyses on both diabetic and hypertensive patients with a non-Western migration background in order to gain more insight in their health status.

Keywords

Ethnic health inequalities – Postponement of medical care – Confidence in healthcare – Educational level – Income

Introduction

Ethnic disparities in risks of developing certain cardiovascular and metabolic diseases have been demonstrated frequently (Cockerham, Bauldry, Hamby, Shikany, & Bae, 2017; Ikram et al., 2017; Lackland, 2014). In the Netherlands, native citizens generally have better physical health than citizens with a migration background (Van Laer, Snijder, Agyemang, Peters, & Van den Born, 2018). Studies attempting to explain these ethnic inequalities in health have mainly focused on differences in genetic compositions (Stronks et al., 2013). For example, it has been shown that sickle cell disease predominantly occurs in populations living near the equator, because this condition serves as a defense mechanism against malaria, which is most common in this region (Stronks et al., 2013; Hamamy & Al-Allawi, 2012). However, evidence has shown that the influence of genetics on the prevalence of more common diseases, such as diabetes and hypertension, is rather limited (Ali & Al Suwaidi, 2019). Instead, environmental factors are mentioned as important explanatory mechanisms behind the existence of ethnic inequalities in the prevalence of diabetes and hypertension (Van Laer et al., 2018; (Brunello, Fort, Schneeweis, & Winter-Ebmer, 2015; Eikemo, Huisman, Bambra, & Kunst, 2008).

Academic attention for medical risk factors of hypertension and diabetes other than genetics is scarce, especially in the Netherlands. Besides, most of these studies have focused on the native majority of the country (Diemer et al., 2020; Stronks et al., 2013). These samples can be considered problematic, given the fact that 24.4% of the Dutch population has a migration background but is not sufficiently represented in medical research (Centraal Bureau voor de Statistiek, 2020b). In this way, the health status of Dutch citizens with a migration background remains underexposed. This marks the importance of gaining more insight into the mechanisms causing ethnic health inequalities so that effective interventions can be created to reduce them.

This master thesis will explore the relationship between ethnic background and the occurrence of hypertension and diabetes in the Netherlands through the following central research question: *To what extent do differences in the prevalence of hypertension and diabetes exist between Dutch citizens with and without a non-Western migration background and can these differences be explained by socioeconomic status and confidence in healthcare?* This research will be conducted from a quantitative, deductive approach by analyzing datasets from the LISS Immigrant Panel, which contain data from surveys which were conducted among 2.400 respondents with and without a migration background (LISS Panel, 2020). These data will be analyzed through (log)linear regression tests carried out with SPSS.

The choice to focus on hypertension and diabetes was made because the prevalence of both diseases is high in Dutch society and differs between citizens with and without a migration background (Ali & Al Suwaidi, 2019; Basu, Sussman & Hayward, 2017). In 2018, approximately 2.8 million Dutch citizens were under supervision by their general practitioner for hypertension and hypertension-related complaints, leading to annual healthcare expenditures of more than 251 million euros (Volksgezondheidsenzorg Info, 2020). Citizens with a migration background are estimated to suffer from these complaints two to three times more often than natives (Het Diabetes Fonds, 2020). Also in 2018, almost 1.2 million Dutch citizens had type 1 or 2 diabetes mellitus, with corresponding healthcare costs of 1.6 billion euros (Volksgezondheidenzorg Info, 2019). It is estimated that the prevalence of both forms of diabetes is three to six times higher among Dutch citizens with a migration background (Poortvliet, Schrijvers & Baan, 2007). These numbers clarify that research on ethnic differences in both hypertension and diabetes is not only scientifically, but also socially relevant, because these diseases affect a large part of the Dutch population.

First, multiple theories will be discussed relating ethnicity to health, on which multiple hypotheses will be based that will serve as a guide in answering the central research question. Afterwards, the methodological framework will be explicated, followed by the corresponding results and conclusions.

Theoretical framework

In the following sections, race, ethnicity and migration background will be conceptualized to position this thesis within the current scientific literature. Furthermore, differences in the prevalence of hypertension and diabetes; confidence in healthcare; and socioeconomic factors between individuals with and without a migration background will be discussed. These paragraphs will be concluded with a corresponding hypothesis.

1. Race, ethnicity and migration background

In many countries, different groups of individuals are categorized based on where they or their parents are born (Ford & Harawa, 2010). In the Netherlands, citizens born in a foreign country are considered first-generation migrants. They belong to the second generation when at least one of their parents is born abroad (Centraal Bureau voor de Statistiek, 2016). These divisions are applied since the Dutch government recruited labour migrants in the late 1940s and needed a social stratification system to distinguish native and non-native citizens from each other (Jennissen, Engbersen, Bokhorst & Bovens, 2018). This would make it possible to develop social policies suitable for the increasingly diverse society, so that migrant citizens and the issues they experience are easier to identify and, therefore, do not become overlooked (Ford & Harawa, 2010).

To refer to an individual's migration background, the concepts of *race* and *ethnicity* are often used, especially in medical research. For example, Horvath et al. (2016), Ward et al. (2004), and Van den Eeden (2003) continuously speak of 'race/ethnicity' as if they are intertwined. However, race and ethnicity are two different concepts that do not have the same meaning, even though both are socially constructed (Ford & Harawa, 2010). For this reason, it is important to mention that there is not a fixed definition for both, which is why researchers need to clarify the meaning of these concepts within their study in advance. In this thesis, *race* is considered a phenotype-based measure to distinguish people of colour from whites, which highlights the unequal power relationship between these groups of individuals (Reed, 1992). Race is inextricably linked with social hierarchy: it has been, and still is, used to classify people based on how they look. Even though it is considered a biologically and genetically determined characteristic by some, individuals who are classified as white generally receive the most social advantages and have the power to maintain this privileged position on the social ladder (Reed, 1992) This is why race cannot be seen as an objective way to categorize people in society, but as an indicator of one's position in it, by shaping life chances and outcomes (Ford & Harawa, 2010).

In this thesis, ethnicity will be considered a collective identity that connects groups of individuals based on shared culture, religion and/or language (Jennissen et al., 2018). An important aspect is also how the collective identity is positioned within society (Ford & Harawa, 2010). For example, in the Netherlands, 'ethnic minorities' are generally seen as citizens who are originated from the former Dutch colonies, which is the case for Surinamese, or who have a labour migration background, such as Moroccans and Turks. Therefore, ethnicity is often related to non-Western countries, which does not do right to the heterogeneity of all populations in Dutch society (Jennissen et al., 2018). This makes clear that the interpretation of ethnicity varies and is subjective to the political history of a certain country as well.

This thesis will not be focused on the social construction of race and ethnicity, because the meaning of these concepts is highly diverse and, therefore, hard to quantify. Instead, the focus will be on *ethnic background* and *ethnic differences*, in which 'ethnic' refers to an individual's migration background. As mentioned before, Western migrants are generally not considered to be part of an ethnic minority (Jennissen et al., 2018). For this reason, only non-Western migrants will be included in the analyses, to make a comparison between native Dutch citizens and migrants who are considered to be part of an ethnic minority. Moreover, as will become clear in the following sections, the health status of non-Western migrants is substantially lower than of Western migrants and Dutch natives (Özcan et al., 2018; Van Oeffelen, Vaartjes, Stronks, Bots & Agyemang, 2013), which marks the importance of exploring the unequal position of non-Western migrants compared to native Dutch citizens even more.

2. Ethnical differences in the prevalence of medical complaints

2.1. Ethnic inequalities in the prevalence of hypertension

Hypertension refers to complaints of high blood pressure that continuously burden the heart, which is an important risk factor for cardiovascular diseases (Nederlandse Hypertensie Vereniging, 2020). Hypertension-related symptoms are headaches, fatigue, nausea, shortness of breath, and restlessness (Keil et al., 1993). One of the few studies that has focused on ethnical differences in hypertension has been conducted in the 1960s (Keil et al., 1993). In this study, the prevalence of hypertension among black and white Americans was compared; other citizens of colour were excluded from the analyses (Keil et al., 1993). It was concluded that 30-year mortality as a

consequence of hypertension was half as high for white Americans as for black Americans (Keil et al., 1993). This has created a two-fold greater risk of stroke mortality for black Americans and an earlier onset of strokes as well, which are long-term risks of hypertension (Lackland, 2014).

Ethnic disparities in the prevalence of hypertension are still present in contemporary society and are found outside of the United States as well (Basu, Sussman, & Hayward, 2017; Howard et al., 2006). In the Netherlands, the scarce amount of research that has been conducted on this matter clearly indicates the need for in-depth, longitudinal studies about ethnic differences in the prevalence of hypertension, because the exact prevalence of this disease among citizens with and without a migration background is unknown (Federatie Medisch Specialisten, 2019). It has been noted that Dutch citizens with a Turkish migration background have higher estimated risk and higher mortality rates of cardiovascular diseases, while fewer cases of citizens with a Moroccan migration background are known with similar complaints (Van Oeffelen et al., 2013; Bindraban & Van Montfrans, 2003). In-depth scientific analyses on these differences in prevalence are lacking, which is one of the main reasons for the absence of medical guidelines that specialists can use during treatment. However, medical specialists agree about the estimation that hypertension is more prevalent among citizens with a non-Western migration background than among natives (Pharos, 2018). Therefore, specialists are recommended to be alert when treating non-Western migrants for hypertension and to apply the guidelines that are currently present (Federatie Medisch Specialisten, 2019).

2.2. Ethnic inequalities in prevalence of diabetes

Diabetic patients either do not produce enough insulin (type 1), or their insulin is attacked by their immune system (type 2). In both cases the glucose in the blood is not processed properly, causing the level of energy that the body receives to be too low (Het Diabetes Fonds, 2020). Diabetes-related complaints can be shortness of breath, fatigue, feelings of hunger or thirst, and having poorly healing wounds (Özcan et al., 2018). Genetic compositions causing type 1 and 2 diabetes mellitus (T1DM/T2DM) are known and have been explored extensively, which has resulted in multiple in-depth analyses explaining the occurrence of these diseases in both children and adults (Ali & Al Suwaidi, 2019). However, ethnic differences in the prevalence of diabetes are unclear, far and foremost because the research populations in most studies were not ethnically diverse. This has led to a native-biased view of risk factors for diabetes and a lack of knowledge about how this disease manifests itself in patients with a migration background (Özcan et al., 2018).

It has been observed that the prevalence of diabetes differs geographically. For example, in Northern Europe, 40 out of 100.000 citizens are diagnosed with T2DM, making this type of diabetes much more common there than in South America, with 2 out of 100.000 citizens being diagnosed annually (Ali & Al Suwaidi, 2019). These differences suggest that certain populations are more prone to diabetes, however, even within populations major differences have been observed, which indicates environmental influences rather than genetics to cause diabetes (Ali & Al Suwaidi, 2019). In the Netherlands, research has demonstrated that the prevalence of diabetes is higher among citizens with a non-Western migration background, because diabetes-related symptoms were two to four times higher for citizens with a Turkish and Hindustani-Surinamese background (Özcan et al., 2018). The study that revealed these differences, however, did not include explanatory variables other than age and educational level, meaning that the reasons for ethnic differences in diabetes-related symptoms cannot be sufficiently clarified (Özcan et al., 2018).

2.3. Hypotheses

H1. Hypertension is more prevalent among Dutch citizens with a migration background than among Dutch citizens without a migration background.

H2. Diabetes is more prevalent among Dutch citizens with a migration background than among Dutch citizens without a migration background.

3. Socioeconomic status

As already briefly explained in the introduction, socioeconomic status has been mentioned to be one of the possible explanatory mechanisms behind ethnic inequalities in health (Van Laer et al., 2018). Therefore, in the following sections, the relationship between migration background, educational level, income, and the prevalence of hypertension and diabetes will be discussed.

2.1. Education, health and migration background

In the first quarter of 2020, 22.6% of Dutch citizens with a non-Western migration background were lower educated, against 10.6% of the native Dutch population. Citizens with a Turkish or Moroccan migration background form the largest part of the low educated group of non-Western migrants (Centraal Bureau voor de Statisiek, 2020b). The disadvantaged picture of these migrants is mainly determined by the first-generation labour migrants that arrived in the Netherlands in the second half of the 20th century: from the moment they migrated, they were not intensively guided by the Dutch government to learn the language and become more affiliated with the educational system, because it was expected that their stay would be temporary (Van Ours & Veenman, 2003). However, the majority of this group of migrants has not returned to the country of origin (Centraal Bureau voor de Statistiek, 2004). The second generation is relatively higher educated, but still, their educational outcomes are lower than of native peers (Centraal Bureau voor de Statistiek, 2016). This can be explained by heterogeneity in the intergenerational transmission of education, in other words, differences in how parents pass on their knowledge of the educational system to their children (Fleury, 2017). This mainly concerns *cultural knowledge,* which are skills, facts, information, and familiarity with social processes needed to negotiate within institutions (Lareau, 2014), in this case, the Dutch educational system. This also explains why children of higher educated, first-generation migrants tend to have lower educational outcomes than children of high educated natives (Fleury, 2017; Lareau, 2014). Even though the second generation is more proficient in the Dutch language and has more knowledge about the rules of the institutions, they lack the intergenerational transfer of cultural knowledge (Fleury, 2017), which means that their position is still behind that of natives.

Multiple studies have shown that lower educated individuals have worse self-reported health and shorter life expectancy than the higher educated, which is called the health-education gradient (Eikemo et al., 2008). Possible explanations for this relationship would be that a long educational career provides individuals with decision-making skills, which aids them in choosing a fitting health insurance, a more stable social environment, and a healthier lifestyle (Eikemo et al., 2008). Moreover, education guides them in critically reflecting on their health status and calling in medical help if necessary (Brunello et al., 2015). In other words, the lower the educational level, the less awareness of medical complaints and the less medical care an individual receives. This leads to the expectation that the prevalence of hypertension and diabetes is higher among non-Western migrants than among Dutch natives because of their lower educational attainments.

2.2. Income, health and migration background

As Reijneveld (1998) showed, the level of income of non-Western migrants is low compared to the income of Dutch natives. In fact, the difference in annual income between these groups of citizens is about nine thousand euros, while Western migrants earn only slightly less than natives (Centraal Bureau voor de Statistiek, 2020a). These differences can be explained by the overrepresentation of non-Western migrants in undeclared work sectors. Individuals working in these environments are not guaranteed a minimum income and are subject to relatively unhealthy and unsafe working conditions, which leads to higher levels of stress and physical exhaustion (Galenkamp, Van Oers, & Stronks, 2019; Müller, 2003). This results in lower self-reported health and lower life expectancy among Dutch citizens with a non-Western migration background (Otten, Bos, Dehing, & Hermans, 2015).

It has been shown that citizens in lower-income groups tend to postpone their visit to a general practitioner or medical specialist more often than those in higher-income groups (Verlinde et al., 2013). The general practitioner is usually not called in for medical complaints that do not burden daily life activities, out of fear that reaching out for medical help will cost them more than they can afford (Verlinde et al., 2013). For this reason, diseases with vague or common symptoms such as fatigue or headaches are generally not treated in time among this group of citizens (Galenkamp et al., 2019), which is why it can be expected that they are more prone to develop hypertension or diabetes as well.

2.3. Hypothesis

H3. Differences in the prevalence of hypertension and diabetes between Dutch citizens with and without a migration background can be explained by differences in the level of income.

H4. Differences in the prevalence of hypertension and diabetes between Dutch citizens with and without a migration background can be explained by differences in the level of education.

3. Confidence in Dutch healthcare

Generally speaking, Dutch citizens with a non-Western migration background have less confidence in healthcare than natives (O'Donnell et al., 2016). In part, this can be explained by non-Western migrants' lower level of familiarity with the Dutch healthcare system and uncertainty in what their rights are in this system, which results in them reaching out to a general practitioner less often than Dutch natives (Van Berkum & Smulders, 2010). However, through regular contact with medical specialists, patients gain experience with healthcare which aids them in developing more confidence in this system (Shim, 2010). Lower confidence in healthcare among non-Western migrants is, therefore, mainly caused by the lower amount of contact with healthcare professionals (Van Berkum & Smulders, 2010).

Confidence in healthcare can be enhanced by the accumulation of cultural health capital (CHC), which is rooted in Bourdieu's theory of cultural capital (Dubbin, Chang & Shim, 2013). CHC includes various skills and resources which facilitate engagement between patients and medical specialists and are needed to make use of the healthcare system effectively (Shim, 2010). Patients who are able to obtain, process and understand the medical information provided to them are more inclined to receive positive attention from medical specialists because their relationship is built on effective communication. Therefore, consultations take less time, and it is easier to assess the effects of a treatment when patients do exactly what their doctor tells them to (Berkman, Sheridan, Donahue,

Halpern, & Crotty, 2011). Other examples of cultural health capital are being able to communicate medical complaints to a specialist or to detect certain physical alarm symptoms that need evaluation (Dubbin, Chang & Shim, 2013). The aforementioned skills are accumulated through continuous healthcare experiences, and hence developing a critical, reflexive attitude towards healthcare practices (Shim, 2010). Healthcare professionals have a responsibility in this process as well: they can educate their patients and make them aware of their position in the system and how they should act in it (Van Berkum & Smulders, 2010). In this way, a safe treatment relationship between patients and specialists is created, which benefits the amount of confidence in healthcare that patients experience (Dubbin, Chang & Shim, 2013). This means that the postponement of visiting a medical specialist among non-Western migrants provides them with fewer opportunities to develop cultural health capital and, therefore, confidence in healthcare.

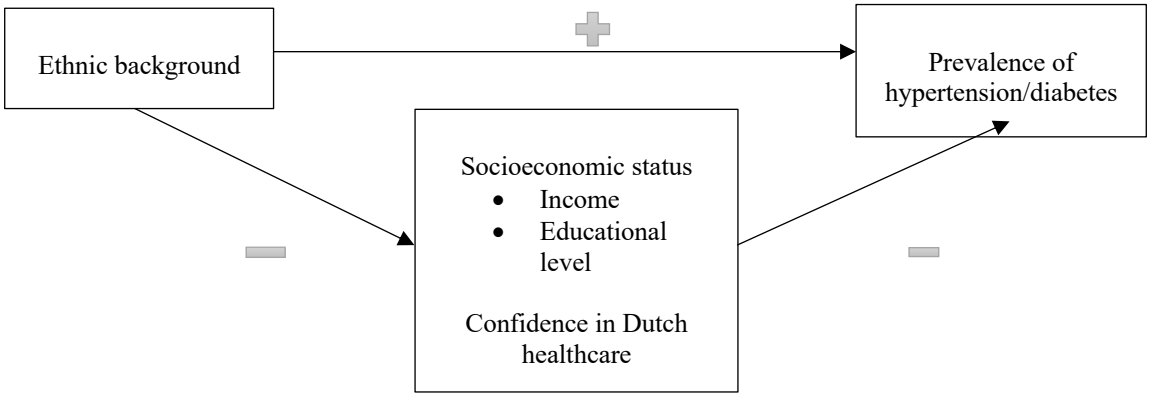
Cultural health capital has a socioeconomic base as well: it is generally absent in groups with high levels of poverty and in minorities, lower-educated, and non-Western immigrants; both first and second generations (Dubbin, Chang & Shim, 2013). The social environment of these groups tends to consist of individuals with comparable social status (Siebel, 2019). Cultural health capital is, therefore, barely transmitted through the social network of these groups of citizens (Dubbin, Chang & Shim, 2013). This is also the case for second-generation migrants: even though they have grown up in the Netherlands and are more familiar with the Dutch healthcare system than their parents, their social network appears to be comparable to that of their parents. This results in cultural health capital not being present in the same amount as it is among native peers and also fewer possibilities for the enhancement of confidence in healthcare (Berkman et al., 2011).

The lower amount of confidence that citizens with a non-Western migration background have in Dutch healthcare can cause an increase of medical complaints (Dubbin, Chang & Shim, 2013). This can be explained by the earlier mentioned postponement of reaching out for medical help among this group of citizens, as a consequence of lower familiarity with the Dutch healthcare system (Van Berkum & Smulders, 2010). When they eventually request medical assistance, their complaints have often become quite severe and no longer suitable for treatment of a general practitioner, who has to refer them to a second-line medical specialist as a consequence (Dubbin, Chang & Shim, 2013). This could explain why individual healthcare expenditures of non-Western migrants are higher than of natives; on average, 200 euros annually (Centraal Bureau voor de Statistiek, 2013). Presumably, this is mainly the case for patients with hypertension and diabetes, since these diseases contain indistinct symptoms - such as fatigue, nausea, and headaches - which do not necessarily burden daily life activities (Özcan et al., 2018; Keil et al., 1993). However, when untreated, more severe diseases such as strokes and heart attacks may arise, which do not only require more specialized medical care, but are also more damaging to the body than if they had been treated at an earlier stage (Het Diabetes Fonds, 2020; Nederlandse Hypertensie Vereniging, 2020).

3.1. Hypothesis

H5. Differences in the prevalence of hypertension and diabetes between Dutch citizens with and without a migration background can be explained by differences in confidence in Dutch healthcare.

Conceptual model



Research methods

1. Data collection

1.1. LISS Immigrant Panel

The datasets that will be analyzed are originated from the Longitudinal Internet Studies for the Social Sciences Immigrant Panel (LISS Immigrant Panel), which has been operational from October 2010 until December 2014. This panel consisted of 1.600 native Dutch households with 2.400 members and 1.100 non-native Dutch households with 1.700 members (LISS Panel, 2020). The native respondents were part of the original LISS Panel and were recruited through several sampling rounds. First, a traditional random sample was conducted from the population registers of Statistics Netherlands (LISS Panel, 2020). All individuals that were selected through this sample were sent a letter followed by a phone call and, if the former methods were insufficient, a house visit (LISS Panel, 2020). In this way, maximum efforts were made to get in touch with individuals who are difficult to reach. Respondents from the LISS Immigrant Panel were recruited separately based on their migration background, but through the same sampling methods as were used for the original LISS Panel. Members of both panels had to fill in a basic questionnaire about their household type, age, educational level, income, and occupation. To keep this information up to date, this questionnaire had to be completed every month (LISS Panel, 2020).

Respondents who were initially unable to participate in the panel because they did not possess a computer or stable internet connection were provided with those so that, eventually, the sample represented the population outside of the study's context instead of only individuals who can afford such products. By doing this, the level of external validity increased (Bryman, 2015). The respondents were financially compensated for each questionnaire they finished, which took about 15 to 30 minutes. The exact datasets that will be used for the analyses will be explicated in sections 1.2 to 1.5.

1.2. Dataset 'Background Variables'

In this survey, respondents were asked about their household, occupation, educational level, and income. This survey was presented to them every month, so that they could adjust the content if necessary. The questionnaire had to be completed by each panel member before they could participate in other questionnaires (LISS Panel, 2020). The data that will be used from this survey was collected in November 2013, in the same month in which the data from 'Health, wave 2' were gathered (LISS Panel, 2020).

1.3. Dataset 'Health, wave 2'

This online survey has been executed in November 2013 among panel members aged 16 and older. 1.797 individuals were selected to participate in this survey, of which the total response rate was 75.2%. The questions were focused on participants' health, health perception and health related to their occupation (LISS Panel, 2020).

1.4. Dataset 'Work and Schooling, wave 1'

This online questionnaire has been conducted in June 2012 among panel members aged 16 and older. 2.409 individuals were selected to participate, with a total response rate of 65%. The questions in the survey were concerned with respondents' labour market participation, job characteristics, pensions and schooling (LISS Panel, 2020).

1.5. Dataset 'Politics and values, wave 1'.

These data have been collected in December 2013 among panel members aged 16 or older. In total, 1.761 respondents participated in this survey, of which the total response rate was 77.3%. This survey was focused on respondents' political preferences and their norms and values concerning several institutions in the Netherlands, such as the healthcare system and the media (LISS Panel, 2020).

2. Operationalization

2.1. Migration background

The variable 'herkomstland' from the dataset 'Work and Schooling, wave 1' is used to categorize respondents based on their migration background. Respondents who have a native Dutch background received the value 0 and respondents originated from a non-Western country received the value 1. As already mentioned in the theoretical framework, respondents with a Western migration background were excluded from the analyses, which means that those respondents were treated as a missing value.

2.2. Hypertension and diabetes

Respondents were considered a hypertensive or diabetic patient when they have answered 'yes' on ≥1 of the following questions:

- Has a physician told you this last year that you suffer from one of the following diseases/problems? (among which 'hypertension' and 'diabetes')
- Are you currently taking medicine at least once a week for: More than one answer possible (among which 'high blood pressure' and 'diabetes').

The new variables following from this selection were dichotomous, meaning that they consisted of two values: 0 when respondents answered 'no' to both questions, and 1 when they have answered 'yes' to one or both.

2.3. Confidence in healthcare

This variable has been measured directly in the survey 'Health, wave 2' through the question: "Can you indicate, on a scale from 0 to 10, how much confidence you personally have in each of the following institutions?" (among which 'healthcare').

2.4. Income

Income has been measured using the continuous variable 'nettoink_f' from the dataset 'Background Variables', which contains the personal net monthly income in Euros of all respondents.

2.5. Educational level

The educational level has been measured using the variable 'oplcat' from the dataset 'Background Variables', in which all educational levels in the Netherlands were categorized in ascending order, namely primary school; vmbo; havo/vwo; mbo; hbo; and wo.

3. Statistical analyses

The first two hypotheses have been tested through a loglinear regression analysis, which shows whether having a non-Western migration background (the independent variable) affects the risk of developing hypertension or diabetes (the dependent variables). The other hypotheses have each been analyzed through three different steps, which have been submerged into one table. All models have been adjusted for the potential confounding effects of gender and age. The first model in the table presents the earlier mentioned loglinear regression analysis between the independent and the dependent variables. The second model contains a linear regression analysis, which separately regressed the mediating variable on migration background in order to find out whether the relationship between the independent variable and the potential mediator is statistically significant. In the third model, the same loglinear regression analysis is shown as in the first model, but it includes the mediating variable as well. In this way, it becomes visible whether the relationship between the mediating variable and the dependent variable is statistically significant, and whether the risk of developing hypertension or diabetes has changed after the addition of the mediating variable. The change in risk ratio will be calculated using the following formula: $\frac{(RR\ model\ 1 - RR\ model\ 3)}{(RR\ model\ 1) - 1}$

Finally, a three-step loglinear regression analysis has been conducted, first without the mediating variables, then with the variables on socioeconomic status, and lastly, with the variable on confidence in healthcare. In this way, the combined effects of all mediating variables and the effect of confidence in healthcare on top of the effect of socioeconomic status on the relationship between migration background and the prevalence of hypertension and diabetes are shown.

4. Ethics

Before participating in the LISS Panel, the respondents had to provide oral consent to the panel recruiters in order to start their membership. After doing this, they received a confirmation email and a letter with login code, through which they could get access to a consent form to confirm their willingness to fill in the monthly surveys. To ensure the anonymity of the respondents, their names were translated into an encrypted number, so that their identity cannot be tracked down through the dataset (LISS Panel, 2020).

Results

1. Sample characteristics

Table 1 shows that the research sample consists of 436 native Dutch citizens and 362 Dutch citizens with a non-Western migration background. These respondents have all participated in the 'Health, wave 2' survey (2013). On average, native Dutch citizens are older; slightly higher educated; more confident with the Dutch healthcare system; and they have higher monthly net income.

Table 1 – Sample characteristics of the 'Health, wave 2' dataset (2013) from the LISS Immigrant Panel.

		Native Dutch (N = 436)	**Non-Western migration background (N = 362)**
Age	Mean	49.47	43.60
	Std. Dev.	15.44	14.73
	Missing (%)	0	0
Income	Mean	1606.19	1346.12
	Std. Dev.	1140.54	1606.72
	Missing (%)	6.2	5.8
Confidence in healthcare	Mean	6.69	5.74
	Std. Dev.	1.58	2.23
	Missing (%)	13.8	14.6
Educational level	Mean	3.83	3.63
	Std. Dev.	1.51	1.49
	Missing (%)	0	2.5
		%	*%*
Sex	Male	47.7	50
	Female	52.3	50
	Missing	0	0
Diabetes	0.00	88.8	86.2
	1.00	5.3	6.9
	Missing	6.0	6.9
Hypertension	0.00	75.0	75.1
	1.00	18.8	18.0
	Missing	6.2	6.9

2. Migration background and hypertension/diabetes

The relationship between migration background and the occurrence of hypertension and diabetes is positive and statistically significant, which means that Dutch citizens with a non-Western migration background are more likely to develop hypertension (*table 2*: RR = 1.32, 95% CI 1.01 – 1.75, p = .046) and diabetes (*table 2*: RR = 1.85, 95% CI 1.07 – 3.20, p = .028) than Dutch natives. Compared to natives, the risk of the occurrence of hypertension is 32% higher and the risk of diabetes is 85% higher for non-Western citizens. Hypothesis 1 and 2 can, therefore, be confirmed.

Table 2 – Loglinear regression analysis between migration background and the occurrence of hypertension (N = 746) and diabetes (N = 747).

	Y = hypertension			**Y = diabetes**		
	RR	95% CI	p	RR	95% CI	p
Mig. Back	1.32	1.01 – 1.75	.046	1.85	1.07 – 3.20	.028
Age	1.05	1.04 – 1.06	.000	1.06	1.04 – 1.07	.000
Gender	1.32	.99 – 1.74	.052	1.29	.76 – 2.23	.343

3. Income

These samples consist of respondents who do not have missing values on the questions concerning their migration background, gender, age, income, and whether or not they have hypertension or diabetes (*table 3:* N = 704; *table 4:* N = 705). For these samples, the relationship between migration background and the risk of developing hypertension is strong and positive, but statistically insignificant (*table 3, model 1:* RR = 1.32, 95% CI .99 – 1.76, p = .059). The relationship between migration background and the risk of diabetes is strong, positive, and statistically significant (*table 4, model 1:* RR = 1.98, 95% CI 1.13 – 3.48, p = .017).

3.1. *Migration background and income (x → z)*

A strong and negative, but statistically insignificant relationship has been found between migration background and the amount of monthly net income (*table 3, model 2*: B = −152.26, 95% CI −350.80 – 46.27, p = .133 and *table 4, model 2:* B = −150.93, 95% CI −249.25 – 47.40, p = .136). The monthly net income of Dutch citizens with a migration background is approximately €150 lower than of natives.

3.2. Income and hypertension/diabetes (z → y)

Dutch citizens with higher monthly net income are at lower risk of developing hypertension (*table 5, model 3*: RR = .94, 95% CI .87 – 1.03, p = .168) and diabetes (*table 6, model 3:* RR = .92, 95% CI .78 – 1.08, p = .313), however, these relationships turned out to be statistically insignificant.

3.3. Migration background and hypertension, mediated by income (x, z → y)

Adjustment for the amount of monthly net income did not affect the positive relationship between migration background and the risk of developing hypertension (*table 3, model 3:* RR = 1.32, 95% CI .99 – 1.75, p = .060). This means that the level of income cannot explain why Dutch citizens with a non-Western migration background are at higher risk of developing hypertension and that H3 cannot be confirmed.

3.4. Migration background and diabetes, mediated by income (x, z → y)

Adjustment for the amount of monthly net income only minimally affected the positive relationship between migration background and the risk of developing diabetes (*table 4, model 3:* RR = 1.96, 95% CI 1.10 – 3.48, p = .022). This means that the level of income cannot explain why Dutch citizens with a non-Western migration background are at higher risk of developing diabetes and that H3 cannot be confirmed.

Table 3 – Loglinear and linear regression analyses between migration background and hypertension, mediated by level of monthly net income (N = 704).

	Model 1 (y = hypertension)			**Model 2 (y = income)**			**Model 3 (y = hypertension)**		
	RR	95% CI	p	B	95% CI	p	RR	95% CI	p
Mig. Back	1.32	.99 – 1.76	.059	-152.26	-350.80 – 46.27	.133	1.32	.99 – 1.75	.060
Age	1.05	1.04 – 1.06	.000	22.38	15.96 – 28.79	.000	1.05	1.04 – 1.06	.000
Gender	1.30	.98 – 1.72	.074	-688.83	-863.41 - -474.26	.000	1.32	.99 – 1.76	.061
Income							1.00	1.00 – 1.00	.369

Table 4 – Loglinear and linear regression analyses between migration background and diabetes, mediated by level of monthly net income (N = 705).

	Model 1 (y = diabetes)			**Model 2 (y = income)**			**Model 3 (y = diabetes)**		
	RR	95% CI	p	B	95% CI	p	RR	95% CI	p
Mig. Back	1.98	1.13 – 3.48	.017	-150.93	-349.25 – 47.40	.136	1.96	1.10 – 3.48	.022
Age	1.05	1.04 – 1.07	.000	22.35	15.94 – 28.75	.000	1.06	1.04 – 1.08	.000
Gender	1.25	.72 – 2.16	.435	-667.26	-861.59 - -472.94	000	1.12	.63 – 1.98	.707
Income							1.00	1.00 – 1.00	.265

4. Education

These samples consist of respondents who do not have missing values on the questions concerning their migration background, gender, age, educational level, and whether or not they have hypertension or diabetes (*table 5:* N = 737; *table 6:* N = 738). For these samples, the relationship between migration background and the risk of developing hypertension is strong, positive, and statistically significant (*table 5, model 1:* RR = 1.36, 95% CI 1.02 – 1.79, p = .033). The relationship between migration background and the risk of diabetes is strong, positive, and statistically significant as well (*table 6, model 1:* RR = 1.87, 95% CI 1.07 – 3.26, p = .027).

4.1. Migration background and education (x → z)

A weak, negative, and statistically insignificant relationship has been found between migration background and the level of education (*table 5, model 2*: B = −.19, 95% CI −.42 – .03, p = .088 and *table 6, model 2:* B = −20, 95% CI −.42 - .03, p = .084). The level of education of Dutch citizens with a migration background is approximately .20 lower on a scale of 1 (primary school) to 6 (university degree).

4.2. Education and hypertension/diabetes (z → y)

Dutch citizens with a higher level of education are at lower risk of developing hypertension (*table 5, model 3*: RR = .94, 95% CI .87 – 1.03, p = .168) and diabetes (*table 6, model 3:* RR = .92, 95% CI .78 – 1.08, p = .313), however, these relationships turned out to be statistically insignificant.

4.3. Migration background and hypertension, mediated by education (x, z → y)

Adjustment for the level of education only minimally affected the positive relationship between migration background and the risk of developing hypertension (*table 5, model 3:* RR = 1.35, 95% CI 1.02 – 1.79, p = .035).

This means that the level of education cannot explain why Dutch citizens with a non-Western migration background are at higher risk of developing hypertension and that H4 cannot be confirmed.

4.4. Migration background and diabetes, mediated by education (x, z → y)

Adjustment for the level of education did not affect the positive relationship between migration background and the risk of developing diabetes (*table 6, model 3:* RR = 1.87, 95% CI 1.07 – 3.27, p = .028). This means that the level of education cannot explain why Dutch citizens with a non-Western migration background are at higher risk of developing diabetes and that H4 cannot be confirmed.

Table 5 – Loglinear and linear regression analyses between migration background and hypertension, mediated by educational level (N = 737)

	Model 1 (y = hypertension)			**Model 2 (y = diabetes)**			**Model 3 (y = diabetes)**		
	RR	95% CI	p	B	95% CI	p	RR	95% CI	p
Mig. Back	1.36	1.02 – 1.79	.033	-.19	-.42 - .03	.088	1.35	1.02 – 1.79	.035
Age	1.05	1.04 – 1.06	.000	.00	-.01 - .01	.844	1.05	1.04 – 1.06	.000
Gender	1.30	.98 – 1.71	.067	-.11	-.42 - .02	.306	1.26	.96 – 1.67	.100
Education							.94	.87 – 1.03	.168

Table 6 – Loglinear and linear regression analyses between migration background and diabetes, mediated by educational level (N = 738)

	Model 1 (y = diabetes)			**Model 2 (y = diabetes)**			**Model 3 (y = diabetes)**		
	RR	95% CI	p	B	95% CI	p	RR	95% CI	p
Mig. Back	1.87	1.07 – 3.26	.027	-.20	-.42 - .03	.084	1.87	1.07 – 3.27	.028
Age	1.06	1.04 – 1.07	.000	.00	-.01 - .01	.833	1.06	1.04 – 1.07	.000
Gender	1.26	.73 – 2.18	.400	-.12	-.33 - .10	.292	1.22	.71 – 2.10	.474
Education							.92	.78 – 1.08	.313

5. Confidence in healthcare

These samples consist of respondents who do not have missing values on the questions concerning their migration background, gender, age, confidence in Dutch healthcare, and whether or not they have hypertension or diabetes (*table 7:* N = 644; *table 8:* N = 645). For these samples, the relationship between migration background and the risk of developing hypertension is strong, positive, and statistically significant (*table 7, model 1:* RR = 1.35, 95% CI 1.01 – 1.81, p = .047). The relationship between migration background and the risk of diabetes is strong, positive, and statistically significant as well (*table 8, model 1:* RR = 2.07, 95% CI 1.17 – 3.67, p = .013).

5.1. Migration background and confidence in healthcare (x → z)

A negative and statistically significant, but weak relationship has been found between migration background and confidence in healthcare (*table 7, model 2:* B = −.28, 95% CI −.38 - −.18, p = .000 and *table 8, model 2:* idem). The amount of confidence in healthcare of Dutch citizens with a non-Western migration background is, on average, .28 lower on a scale of 0 (no confidence) to 10 (full confidence).

5.2. Confidence in healthcare and hypertension/diabetes (z → y)

Dutch citizens with higher confidence in healthcare are at lower risk of developing hypertension (*table 5, model 3*: RR = .94, 95% CI .87 – 1.03, p = .168) and diabetes (*table 6, model 3:* RR = .92, 95% CI .78 – 1.08, p = .313), however, these relationships turned out to be statistically insignificant.

5.3. Migration background and hypertension, mediated by confidence in healthcare (x, z → y)

Adjustment for confidence in healthcare made the positive relationship between migration background and the risk of developing hypertension become statistically insignificant, however, it only minimally affected the strength of the association (*table 7, model 3:* RR = 1.30, 95% CI .96 – 1.76, p = .085). This means that confidence in healthcare cannot explain why Dutch citizens with a non-Western migration background are at higher risk of developing hypertension and that H5 cannot be confirmed.

5.4. Migration background and diabetes, mediated by confidence in healthcare (x, z → y)

Adjustment for confidence in healthcare only minimally affected the positive relationship between migration background and the risk of developing diabetes (*table 8, model 3:* RR = 2.04, 95% CI 1.14 – 3.66, p = .016). This means that the level of education cannot explain why Dutch citizens with a non-Western migration background are at higher risk of developing diabetes and that H5 cannot be confirmed.

Table 7 – Loglinear and linear regression analyses between migration background and hypertension, mediated by confidence in the Dutch healthcare system (N = 644).

	Model 1 (y = hypertension)			**Model 2 (y = confidence)**			**Model 3 (y = hypertension)**		
	RR	95% CI	p	B	95% CI	p	RR	95% CI	p
Mig. Back	1.35	1.01 – 1.81	.047	-.28	-.38 - -.18	.000	1.30	.96 – 1.76	.085
Age	1.05	1.04 – 1.06	.000	.00	.00 - .01	.208	1.05	1.04 – 1.06	.000
Gender	1.25	.93 – 1.67	.138	-.06	-.16 - .04	.208	1.23	.92 – 1.66	.164
Confidence							.84	.67 – 1.05	.127

Table 8 – Loglinear and linear regression analyses between migration background and diabetes, mediated by confidence in the Dutch healthcare system (N = 645).

	Model 1 (y = diabetes)			**Model 2 (y = confidence)**			**Model 3 (y = diabetes)**		
	RR	95% CI	p	B	95% CI	p	RR	95% CI	p
Mig. Back	2.07	1.17 – 3.67	.013	-.28	-.38 - -.18	.000	2.04	1.14 – 3.66	.016
Age	1.06	1.04 – 1.07	.000	.00	-.00 - .01	.343	1.06	1.04 – 1.08	.000
Gender	1.41	.80 – 2.49	.234	-.06	-.16 - .03	.199	1.40	.79 – 2.50	.252
Confidence							.93	.58 – 1.49	.766

6. Combined effects

These samples consist of respondents who do not have missing values on the questions concerning their migration background, gender, age, income, educational level, confidence in Dutch healthcare, and whether or not they have hypertension or diabetes (*table 9:* N = 601; *table 10:* N = 602). Table 9 and 10 show how the addition of the mediating variable *confidence in healthcare* affects the relationship between migration background and the prevalence of hypertension and diabetes on top of socioeconomic status.

6.1. Migration background, hypertension, and all mediators

Adjustment for socioeconomic status did not affect the positive relationship between migration background and the risk of developing hypertension, which remained statistically significant (*table 9, model 2:* RR = 1.37, 95% CI 1.01 – 1.87, p = .042). Educational level does have a statistically significant, negative impact on the risk of developing hypertension. Adjustment for confidence in healthcare only minimally affected the relationship between migration background and the risk of hypertension (*table 9, model 3:* RR = 1.34, 95% CI .97 – 1.83, p = .073).

6.2. Migration background, diabetes, and all mediators

Adjustment for socioeconomic status did not affect the positive relationship between migration background and the risk of developing diabetes, which remained statistically significant (*table 10, model 2:* RR = 2.45, 95% CI 1.36 – 4.46, p = .003). Confidence in healthcare attenuated the relationship between migration background and the risk of developing diabetes with 6% after adjusting for socioeconomic status, gender, and age (*table 10, model 3:* RR = 2.36, 95% CI 1.29 – 4.34, p = .005). However, the impact of confidence in healthcare on the occurrence of diabetes is not found to be statistically significant, which means that this concept cannot convincingly explain why Dutch citizens with a non-Western migration background are at higher risk of developing diabetes.

Table 9 – Loglinear regression analyses between migration background and hypertension, mediated by income, education and confidence in the Dutch healthcare system (N = 601).

	Model 1 (y= hypertension)			**Model 2 (y = hypertension + SES)**			**Model 3 (y = hypertension + confidence)**		
	RR	95% CI	p	RR	95% CI	p	RR	95% CI	p
Mig. Back	1.37	1.01 – 1.85	.044	1.37	1.01 – 1.87	.042	1.34	.97 – 1.83	.073
Age	1.05	1.04 – 1.06	.000	1.05	1.04 – 1.06	.000	1.05	1.04 – 1.06	.000
Gender	1.19	.88 – 1.60	.264	1.17	.86 – 1.58	.321	1.16	.85 – 1.57	.351
Income				1.00	1.00 – 1.00	.298	1.00	1.00 – 1.00	.298
Education				.91	.83 - .99	.034	.91	.83 – 1.00	.053
Confidence							.97	.89 – 1.05	.414

Table 10 – Loglinear regression analyses between migration background and diabetes, mediated by income, education and confidence in the Dutch healthcare system (N = 602).

	Model 1 (y = diabetes)			**Model 2 (y = diabetes + SES)**			**Model 3 (y = diabetes + confidence)**		
	RR	95% CI	p	RR	95% CI	p	RR	95% CI	p
Mig. Back	2.45	1.36 – 4.41	.005	2.45	1.36 – 4.46	.003	2.36	1.29 – 4.34	.005
Age	1.06	1.04 - 1.08	.000	1.06	1.04– 1.08	.000	1.06	1.04 – 1.08	.000
Gender	1.51	.85 – 2.70	.160	1.39	.77 – 2.50	.280	1.37	.76 – 2.48	.298
Income				1.00	1.00 – 1.00	.433	1.00	1.00 – 1.00	.431
Education				.98	.82 – 1.21	.815	.99	.82 – 1.20	.912
Confidence							.95	.82 – 1.09	.423

Discussion

Main findings

The main finding of this thesis is that having a non-Western migration background is related to higher risks of developing both hypertension and diabetes, which are statistically significant relationships as well. This finding is in line with the expectations and emphasizes the importance of including citizens with a non-native migration background in medical research. However, the explanatory factors behind these relationships have not been identified. The level of income and education did not, or only minimally, affect the relationship between migration background and the risk of developing hypertension and diabetes. Confidence in healthcare could only minimally account for ethnic differences in the prevalence of hypertension and diabetes; these relationships were statistically insignificant as well. These results suggest that environmental factors explaining ethnic inequalities in the risk of hypertension and diabetes still need to be identified.

Findings related to the literature

The influence of migration background on the level of income and education was not found to be statistically significant; neither was the influence of these socioeconomic factors on the risk of developing hypertension and diabetes. These findings are inconsistent with the literature, which suggested that socioeconomic factors could be important explanatory mechanisms behind the existence of ethnic inequalities in the prevalence of hypertension and diabetes, aside from the influence of genetics (Brunello et al., 2015; Stronks et al., 2013; Verlinde et al., 2013; Eikemo et al., 2008). The discrepancy with the literature can be explained by the composition of the research sample that was used in this thesis, which consisted of data from multiple surveys that were merged together. This resulted in a lower number of respondents that could be used in the analyses, because only few of them had participated in all surveys that were used. In this way, the probability that the results were based on mere coincidence increased. Moreover, the non-Western migrants that were studied in this thesis were generally higher educated (*table 1*), which could have caused the analyses to become statistically insignificant as well.

Strengths

The biggest strength of this thesis is that it takes a step towards more ethnically diverse and, therefore, more inclusive scientific research for the sake of gaining more insight in the health status of ethnic minorities in the Netherlands; the type of research which has often been called for (Diemer et al., 2020; Ali & Al Suwaidi. 2019;

Özcan et al., 2018; Stronks et al., 2013), but which has not actually been carried out. Other studies have mainly focused on the influence of genetics on the prevalence of hypertension and diabetes (Stronks et al., 2013; Hamamy & Al-Allawi, 2012), while the influence of environmental factors remained unclear. Even though this thesis has not been able to fill this scientific gap, it could serve as a starting point for more in-depth analyses on this matter.

Limitations

While interpreting the results of this thesis, multiple methodological issues should be taken into account. First, the operationalization of hypertension and diabetes was done by only selecting individuals who were either told they have hypertension or diabetes or who use medication for these diseases; individuals who suffer from these diseases but are unaware of it become overlooked. This goes against multiple warnings that were done in the literature, mentioning that especially non-Western migrants are unaware that they have hypertension or diabetes, because they only experience vague symptoms which they do not necessarily connect to these diseases (Galenkamp et al., 2019; Özcan et al., 2018; Keil et al., 1993). However, this could be prevented in future research by adding a variable consisting of hypertension- and diabetes-related complaints – such as shortness of breath, headaches, nausea, and restlessness (Özcan et al., 2018; Keil et al., 1993) – and testing whether these complaints differ between citizens with and without a migration background. It is also important to mention that the level of education was treated as a continuous variable instead of an ordinally-scaled variable. This was done to make it possible to do linear regression analyses with this variable.

Another methodological limitation would be the operationalization of confidence in healthcare. In the LISS Immigrant Panel, respondents were only asked once about the amount of confidence they have in Dutch healthcare, which means that the results involving this variable are dependent on one measuring moment. Future research could prevent this issue by measuring confidence in healthcare multiple times, which benefits the reliability of the study as well. In the LISS Immigrant Panel, this was also done for all the background variables, because these are subject to regular change as well. Moreover, respondents were asked about trust in 'healthcare', which is a broad concept that does not make it possible to differentiate between the variety of healthcare institutions that are present in the Netherlands. In this way, it does not become clear in which part(s) of healthcare respondents have low confidence. This could not have been prevented in this thesis, given the scarce amount of available data.

Another important limitation of this thesis would be that the researcher herself has a native Dutch background. This thesis studying groups in society with a migration background and the ways in which they are disadvantaged by the Dutch healthcare system is done from a privileged position; the researcher has had no experiences with being discriminated against by the system based on migration background. For this reason, it is important that future research, focusing on actual experiences of migrant Dutch citizens within the healthcare system, is conducted by non-native researchers as well, so that the point of view and experiences of this group of citizens receive the attention that is needed.

Future research recommendations

Previous research already made clear that the exact prevalence of hypertension and diabetes between ethnic backgrounds is unknown. This scientific gap has partially been filled by this thesis, given the fact that a strong, positive and statistically significant relationship has been found between migration background and the prevalence of hypertension and diabetes. This has important implications, because both unregulated hypertension and diabetes

could cause mortality based on cardiovascular events on the long-term (Het Diabetes Fonds, 2020; Lackland, 2014). The higher prevalence of hypertension and diabetes could, therefore, explain the greater risk of stroke mortality and an earlier onset of strokes among non-Western migrants as well, since hypertension is mentioned as one of the main risks for those incidents (Lackland, 2014). The studies to follow should pay more in-depth attention to this relationship. Now that non-Western migrants are known to be more prone to develop hypertension and diabetes than natives, the urgency to adjust medical guidelines in the treatment of hypertensive complaints according to the needs of the ethnically diverse population has become evident. For this reason, another recommendation would be to start a longitudinal study specifically aimed at native Dutch citizens and non-Western migrants with either hypertension or diabetes, in order to generate a large research sample and to extensively investigate which factors could explain ethnic differences in the prevalence of these diseases. This study should pay attention to the postponement of medical care among non-Western migrants as well: this concept has not been included in this thesis due to lack of data, however, it should receive more academic attention given the fact that both hypertension and diabetes require early diagnosis and extensive treatment in order to prevent damaging consequences (Verlinde et al., 2013; Van Berkum & Smulders, 2010).

Conclusion

Dutch citizens with a non-Western migration background are at higher risk of developing hypertension and diabetes, however, the explanatory mechanisms behind this relationship could not have been identified. Therefore, this thesis has shown the urgency of composing research samples in the medical field with higher ethnic diversity, because this is the only way to gain knowledge about the health status of ethnic minorities and to formulate social policies aimed at reducing ethnic health inequalities. The presence of Dutch citizens with a non-Western migration background in health-related studies is too low to be able to draw firm conclusions about their health status. In contemporary Dutch society, where almost a quarter of the population has a non-native background, this scarcity of data can no longer be accepted.

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ERASMUS UNIVERSITEIT ROTTERDAM

CHECKLIST ETHICAL AND PRIVACY ASPECTS OF RESEARCH

INSTRUCTION

This checklist should be completed for every research study that is conducted at the Department of Public Administration and Sociology (DPAS). This checklist should be completed *before* commencing with data collection or approaching participants. Students can complete this checklist with help of their supervisor.

This checklist is a mandatory part of the empirical master's thesis and has to be uploaded along with the research proposal.

The guideline for ethical aspects of research of the Dutch Sociological Association (NSV) can be found on their website (http://www.nsv-sociologie.nl/?page_id=17). If you have doubts about ethical or privacy aspects of your research study, discuss and resolve the matter with your EUR supervisor. If needed and if advised to do so by your supervisor, you can also consult Dr. Jennifer A. Holland, coordinator of the Sociology Master's Thesis program.

PART I: GENERAL INFORMATION

Project title: Master thesis – Beyond the native bias.

Name, email of student: Marije Splinter, 411626ms@student.eur.nl

Name, email of supervisor: Joost Oude Groeniger, oudegroeniger@essb.eur.nl

Start date and duration: 01-05-2020, 10 weeks.

Is the research study conducted within DPAS **YES** - NO

If 'NO': at or for what institute or organization will the study be conducted?
(e.g. internship organization)

PART II: TYPE OF RESEARCH STUDY

Please indicate the type of research study by circling the appropriate answer:

1. Research involving human participants. **YES** - NO

   If 'YES': does the study involve medical or physical research? YES - **NO**
   Research that falls under the Medical Research Involving Human Subjects Act (WMO) must first be submitted to an accredited medical research ethics committee or the Central Committee on Research Involving Human Subjects (CCMO).

2. Field observations without manipulations that will not involve identification of participants. YES - **NO**

3. Research involving completely anonymous data files (secondary data that has been anonymized by someone else). **YES** - NO

PART III: PARTICIPANTS
(Complete this section only if your study involves human participants)

- Where will you collect your data?

Existing datasets from the LISS (Immigrant) Panel, which have been anonymized. These data have been collected through Statistics Netherlands.

- What is the (anticipated) size of your sample?

1.164 Dutch citizens with and without a migration background.

- What is the size of the population from which you will sample?

1.797 Dutch citizens with and without a migration background.

1. Will information about the nature of the study and about what participants can expect during the study be withheld from them? YES - **NO**

2. Will any of the participants not be asked for verbal or written 'informed consent,' whereby they agree to participate in the study? YES - **NO**

3. Will information about the possibility to discontinue the participation at any time be withheld from participants? YES - **NO**

4. Will the study involve actively deceiving the participants? YES - **NO**
   Note: almost all research studies involve some kind of deception of participants. Try to think about what types of deception are ethical or non-ethical (e.g. purpose of the study is not told, coercion is exerted on participants, giving participants the feeling that they harm other people by making certain decisions, etc.).

5. Does the study involve the risk of causing psychological stress or negative emotions beyond those normally encountered by participants? YES - **NO**

6. Will information be collected about special categories of data, as defined by the GDPR (e.g. racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, genetic data, biometric data for the purpose of uniquely identifying a person, data concerning mental or physical health, data concerning a person's sex life or sexual orientation)? **YES** - NO

7. Will the study involve the participation of minors (<18 years old) or other groups that cannot give consent? **YES** - NO

8. Is the health and/or safety of participants at risk during the study? YES - **NO**

9. Can participants be identified by the study results or can the confidentiality of the participants' identity not be ensured? YES - **NO**

10. Are there any other possible ethical issues with regard to this study? YES - **NO**

- If you have answered 'YES' to any of the previous questions, please indicate below why this issue is unavoidable in this study.

Respondents from the LISS (Immigrant) Panel are aged 16 or older, but were obliged to provide oral consent to the panel recruiters to become a member of the panel. Panel members' ethnic background had to be identified to be able to judge whether they could become a respondent of the Immigrant Panel. Confidentiality has been ensured by encrypting all respondents' names.

- What safeguards are taken to relieve possible adverse consequences of these issues (e.g., informing participants about the study afterwards, extra safety regulations, etc.).

Before participating in the LISS Panel, the respondents had to provide oral consent to the panel recruiters in order to start their membership. After doing this, they received a confirmation email and a letter with login code, through which they could get access to a consent form to confirm their willingness to fill in the monthly surveys. To ensure the anonymity of the respondents, their names were translated into an encrypted number, so that their identity cannot be tracked down through the dataset

- Are there any unintended circumstances in the study that can cause harm or have negative (emotional) consequences to the participants? Indicate what possible circumstances this could be.

No.

Part IV: Data storage and backup

- Where and when will you store your data in the short term, after acquisition?

On a password-protected computer. The password is only known by the researcher herself.

- Who is responsible for the immediate day-to-day management, storage and backup of the data arising from your research?

The researcher.

- How (frequently) will you back-up your research data for short-term data security?

Every day, starting from the first of May until two weeks after the final deadline of the thesis (23-08-2020).

- In case of collecting personal data how will you anonymize the data?

Not applicable.

PART VI: SIGNATURE

Please note that it is your responsibility to follow the ethical guidelines in the conduct of your study. This includes providing information to participants about the study and ensuring confidentiality in storage and use of personal data. Treat participants respectfully, be on time at appointments, call participants when they have signed up for your study and fulfil promises made to participants.

Furthermore, it is your responsibility that data are authentic, of high quality and properly stored. The principle is always that the supervisor (or strictly speaking the Erasmus University Rotterdam) remains owner of the data, and that the student should therefore hand over all data to the supervisor.

Hereby I declare that the study will be conducted in accordance with the ethical guidelines of the Department of Public Administration and Sociology at Erasmus University Rotterdam. I have answered the questions truthfully.

Name student: M.J. Splinter

Date: 27-07-2020

Name (EUR) supervisor: Joost Oude Groeniger

Date: 27-07-2020