Community health workers: Bridging the gap between health needs of immigrant elderly and health- and welfare services in the Netherlands

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CHAPTER 1
General introduction
AGEING IMMIGRANT POPULATION

The ageing of the population is a well-known phenomenon in all Western countries. In addition, the proportion of older immigrants in the population is rapidly growing. In the Netherlands, the number of immigrants aged 55 years and older is expected to increase from 183,000 in 2010 to 445,000 in 2025. The largest groups originate from Surinam, Morocco, Turkey and the Netherlands Antilles/Aruba, in addition to smaller groups such as the Moluccans.

Older immigrants in the Netherlands are very diverse in terms of migration history. The Moluccans were ordered to travel to the Netherlands in 1951 after the decolonisation of Indonesia because they were either in active service in the KNIL (Royal Dutch Indonesian Army) or family members of a KNIL soldier. After arrival in the Netherlands, they were housed in resettlement camps in remote areas. Beginning in the 1960s, the Turks and Moroccans came to the Netherlands as inexpensive labour immigrants and had a low level of education. Later, the immigrants’ wives and children arrived for the purposes of family reunification or family formation. People from Surinam and the Netherlands Antilles/Aruba first came to the Netherlands for education or work. However, from 1970 onwards, political or economic motives and family reunification also played a role. Many elderly immigrants belong to a vulnerable group in society. This is due to their poor education level (particularly Moroccans and Turks), limited mastery of the Dutch language, and low socio-economic status. Many of these immigrants have financial problems, as they are unemployed or accumulated an incomplete old age pension. They also often have limited health literacy and are less capable of controlling and maintaining their health.

HEALTH STATUS OF OLDER IMMIGRANTS

As in many other Western countries, the health status of most elderly immigrants in the Netherlands is poorer than that of native elderly. Although there are differences between the groups, elderly immigrants generally perceive their health as being less favourable. About one-third of the Turkish, Moroccan and Surinamese elderly between the ages of 55 and 64 years old rate their health as poor, compared to 12% of the elderly from Dutch origin. The exception is the Antillean/Aruban elderly, as only 5% rate their health as poor.

In addition, chronic disorders, such as diabetes mellitus, COPD, musculoskeletal disorders, hypertension, and cardiovascular disease, occur more frequently among older immigrants than native elderly. Their incidence of most forms of cancers is, however, lower. Although mortality is substantially lower, morbidity seems to be higher, particularly among those from the first generation. The Turkish elderly report the greatest number of chronic disorders, on average, about twice as many disorders as the ethnic Dutch elderly, followed by Moroccans and Surinamese. The Moluccan elderly remarkably report fewer chronic disorders than the ethnic Dutch elderly.

Regarding mental health, a relatively high prevalence of anxiety and depression has been reported among elderly immigrants. The immigrant population is unfamiliar with dementia. Symptoms of dementia are often denied or not recognised by the elderly, and amnesia is often considered to be a painful part of the process of ageing.

Older immigrants often have physical limitations in daily life and household activities. Of the elderly of Turkish and Moroccan origin, 30% to 35% have at least one limitation in performing daily activities. By contrast, 13% of the ethnic Dutch elderly have at least one such limitation. In terms of carrying out household tasks, over half of the Turkish elderly and 41% of the Moroccan elderly experience at least one limitation.

HEALTH CARE USE AMONG OLDER IMMIGRANTS

Older immigrants display a different pattern of health care utilisation both within groups and compared to native elderly. These differences persist even when differences in health are taken into account.

Older immigrants make more use of general practitioners’ (GP’s) care. In the Netherlands, the frequency of GP visits is highest for Turkish, Moroccan and Surinamese elderly. In the study of Denktash, two-thirds of the Turkish elderly had consulted a GP in the past 12 months, compared to 48% of the native elderly. The immigrants’ use of secondary care (hospitalisation and consultation of a medical specialist) is virtually equal to that of native elderly. However, when differences in age, sex, education, income and health are taken into account, Turkish and Moroccan elderly visit medical specialists less often than native elderly.

Despite a relatively higher prevalence of anxiety and depression, older immigrants are generally under-represented in mental health care compared to the elderly of Dutch origin. In addition, older immigrants, especially the Moroccan and Turkish elderly, generally make less use of home care and care in nursing and residential homes compared to native elderly. The figures for the Surinamese and Antillean elderly are comparable to the Dutch elderly. Research suggests multiple explanations for this low use of care facilities, including unfamiliarity with health care and social welfare services, language and communication barriers, culturally inappropriate services, professionals’ lack of knowledge of cultural background, financial reasons (own contribution), and moral or cultural resistance to seeking care when informal care is available at home.
ETHNIC INTERMEDIARIES IN HEALTH CARE

In the past, various initiatives were developed to improve older immigrants’ access to health care. Examples include the deployment of so-called educators in the immigrants’ own language and culture (VETC-er in Dutch) and ethnic care consultants (Allochton zorgconsultanten in Dutch) as intermediaries between immigrant elderly and providers of care and welfare facilities. The first group was mainly deployed for collective preventive health education to immigrant groups at public locations. The second group primarily aimed to support caregivers in primary (and sometimes secondary) care, e.g., by providing (individual) information to patients who visit the GP. These services and the compensation for interpreters in health care were abolished in most municipalities. Several local initiatives have also been implemented to increase nursing and care homes’ cultural sensitivity and establish specialised social work and informal care support centres for elderly immigrants.

An internationally extensively studied way to improve vulnerable groups’ access to health facilities is the deployment of community health workers (CHWs) in the migrant community. CHWs share the immigrants’ ethnic background, speak the same language, are aware of the health beliefs and understand the barriers to health care and social welfare services that immigrants experience. They act as intermediaries between the immigrants and the providers of health care services. In the Voice of Elderly Immigrants (STEM) project, which is the subject of the current thesis, we use CHWs from the community to improve immigrants’ access to cure and care facilities. We developed a CHW programme that is based on the practice of multicultural health brokering in Edmonton, Canada. Specifically trained CHWs were deployed on a part-time basis (1 to 2 days a week) in a role that significantly expanded beyond the regular tasks of health care information and health navigation. In close collaboration with the local providers of health care and social welfare providers, the CHWs were also trained to involve the elderly immigrant groups in identifying problems and framing solutions at the community level.

Similar to ethnic care consultants and educators who share immigrants’ language and culture, CHWs have a similar ethnic background as the target group. In addition, the CHWs are active mediators between the target group and the cure and welfare professionals, and they start local projects to improve access to curative and welfare services for the target group. Previous international research demonstrated that these CHWs can improve immigrants’ knowledge of health and lifestyle, health behaviour and uptake of services. A study of CHWs in the Netherlands showed that the deployment of CHWs can potentially bridge the gap between ethnic minority groups and health services. However, this study did not focus on immigrant elderly and did not assess the effectiveness of the CHW intervention.

OBJECTIVES OF THIS THESIS

The aim of this thesis is to assess the effectiveness of a CHW intervention programme to improve immigrant elderly’s access to health and welfare services, health-related quality of life (HRQOL), and self-efficacy. The key element of the programme is the deployment of specifically trained CHWs who act as intermediaries between immigrant elderly and providers of health care and social welfare services.

OUTLINE OF THIS THESIS

The outline of this thesis is as follows:

In Chapter 2, we explore whether the health care use of ethnic minority elderly populations differs from that of indigenous elderly using the registry data from a Dutch health insurance company.

In Chapter 3, we systematically review the international literature to investigate whether CHWs are effective in providing benefits, specifically in terms of health knowledge, health behaviour, health outcomes, and access to care, to ethnic minority older adults.

In Chapter 4, we report on the study protocol, describing the design, methods, and strengths and challenges of our study.

In Chapter 5, we assess differences in health-related quality of life (HRQOL) among different ethnic groups of immigrant elderly and the relation of HRQOL to determinants such as multimorbidity, loneliness, socio-demographics, acculturation, and ethnicity.

In Chapter 6, we describe the effectiveness of our CHW intervention programme. Therefore, we evaluate whether the deployment of CHWs improves access to health care services and HRQOL and helps to reduce the functional limitations and loneliness of older immigrants.

Chapter 7 describes a qualitative study in which we explore the challenges of our CHW intervention programme and the key factors that lead to successful CHW function.

In Chapter 8, we discuss the main findings. We reflect on the methodological issues of our study and provide recommendations for future practice.
REFERENCES


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CHAPTER 2

Differences in health care utilisation between elderly from ethnic minorities and ethnic Dutch elderly

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Chapter 2

ABSTRACT

Introduction
In the Netherlands, as in other Western countries, ethnic minority elderly are more often in poorer health than the indigenous population. The expectation is that this health disadvantage results in more frequent use of health care services.

Methods
We studied registered data on the proportion of health care receivers, frequency of use, and health care costs collected by a major Dutch health insurance company in 2010. Data from 10,316 Turkish, 14,490 Moroccan, 8,619 Surinamese, and 1,064 Moluccan adults aged 55 years and older were compared with data from a sample of 33,725 ethnic Dutch older adults.

Results
Unadjusted and adjusted (for age and gender) analyses showed the following. Moluccans had lower usage levels for all types of health care services. Use of primary health care facilities was higher for Turks, Moroccans, and Surinamese compared with the ethnic Dutch, with the exception that physical therapy was less frequently used among the Turks and Moroccans. Use of hospital care was lower, except for the Surinamese, who had a similar level of usage to that of the ethnic Dutch.

Conclusions
The health disadvantage previously observed within most ethnic minority elderly populations does not result in overall more frequent use of health care services. Further research is needed for the interpretation of the ethnic variations in health care use as potentially inequitable, by taking medical need, patient treatment preferences, and treatment adherence into account.

INTRODUCTION

In the Netherlands, as in other Western countries, ethnic differences in health status exist among elderly. Ethnic minority elderly are frequently disadvantaged: they are often in poorer health than the indigenous population. This applies to self-reported health, mental health as well as the prevalence of chronic diseases such as diabetes mellitus, COPD, musculoskeletal disorders, hypertension, and cardiovascular disease. The incidence of many cancers is, however, lower. Although mortality is substantially lower, morbidity seems to be higher, in particular among those from the first-generation. The expectation is that the health disadvantage observed within most ethnic minority elderly populations results in more frequent use of health care services. Therefore, we studied the health care utilisation of elderly from four large ethnic minority groups that have been in the Netherlands for decades: Surinamese, Turks, Moroccans, and Moluccans.

Despite their number is rapidly rising in the Netherlands recent research on this domain remains scarce. This is in line with the lack of international research on health care use within elderly ethnic minority populations as be observed in a recently published review. Most recent Dutch studies are based on data collected in 2003 in a large sample of Surinamese, Turks, Moroccans, and Antillean aged 55 years and older. These studies showed that GP service use to be higher whereas the use of outpatient hospital care, and physical therapy was lower to absent among the four ethnic minority elderly populations compared to ethnic Dutch elderly.

Clearly, there is a strong need for recent research on aspects of health care utilisation within ethnic minority elderly populations in the Netherlands. Instead of comparing health care utilisation by comparing the number of health care users or the frequency of health care use, as done in the previous studies, our study focusses on differences in health care utilisation by comparing health care costs. Additionally, we use data on the proportion of insured individuals receiving care and the frequency of use of health care provisions to gain insight into potential explanations for any differences in health care costs.

A difficulty with self-reported data on utilisation of health care is that there are indications that the cross-cultural validity of these data is suboptimal. To study whether health care use of the four ethnic minority elderly populations in the Netherlands varies from the ethnic Dutch elderly, this study uses therefore data from registry data from the Achmea Health Insurance Company, the main health insurance company in the central part of the Netherlands.
METHODS

The Achmea Health Database

The Health Database of Achmea is based on reimbursement data for the provision of all medical care to 1.3 million insured patients in the central area of the Netherlands. The database includes three domains of information: patients, health care professionals, and health care services provided. These three domains are linked to the patient’s individual identity. The database includes data on most of the health services provided by general practitioners (GPs) (e.g., type and date of GP consultations) and by other primary care professionals (e.g., chronic disease management programmes coordinated by practice nurses in primary care and physical therapy). In addition, it contains information on all drugs provided by pharmacists, such as the drug type (anatomical therapeutic codes (ATC codes)), dosage (defined and daily doses prescribed), prescriber, date of delivery, and cost. Medications provided by hospital pharmacies and over-the-counter medications are not registered in the database. The database also includes information on hospital services, such as hospital admissions, and diagnostic and therapeutic services per specialist provided in hospitals. For specialist services the diagnosis of each patient is also registered. The database contains information on all medical aids prescribed to treat a disorder or to help with a limitation (e.g., eyeglasses and hearing aids), except for medical aids provided while admitted and medical specialist treatment related to admission or treatment. The registration of pharmacy and other health care services provided has a high reliability and accuracy because health services are only reimbursed to the provider after the electronic data entry is extensively checked. Random checks and a comprehensive programme of material auditing are used to exclude coding errors. Data are provided under the condition of anonymity. Each data request from researchers is assessed by a scientific committee on clinical and scientific relevance.

Selection of subjects

All adults aged 55 years and older of Turkish, Moroccan, Surinamese (South-Asian Hindustan), and Moluccan origin were identified from the Achmea Health Database. The Dutch group was matched, according to age and gender, with the overall group of ethnic minorities.

Following methodology reported earlier, subjects from ethnic minorities were identified by their foreign nationality or last name. First-generation Moroccans, Turks, and Surinamese were identified by their nationality because ethnicity is not included in the Achmea Health Database. Second-generation Moroccans, Turks, and Surinamese were identified by matching the last names of the selected first-generation adults with the remaining names in the database, as well as by visually identifying the origins of names. The identification of first- and second-generation Moluccans was also based on their last names. Last names from the passenger list of all Moluccans who transferred to the Netherlands in 1951 (collected by the Moluccan Historical Museum in the Netherlands) were matched with the database and the origins of names were also visually identified.

Characteristics of the groups studied

Together Surinamese, Turks, and Moroccans, accounted in 2010 for almost 2.5% of the total population of 55 years and older. Surinamese are the largest group of older non-Western ethnic minorities (51,321 in 2010), followed by Turks (35,014), Moroccans (32,489). Moluccans form the smallest group, but recent estimates including 2010 are not available. The number of older Moroccan men exceeds the number of Moroccan older women, while among the Surinamese the reverse is the case. The numbers of older Turkish men and women are about equal. The majority of older immigrants live in the large Dutch cities except for the Moluccans.

Older Turks and Moroccans generally have a low income. They are also poorly educated, and many older Turks and Moroccans (particularly women) have a poor command of the Dutch language. The financial position of older Surinamese is generally slightly better than that of elderly Turks and Moroccans. Surinamese elderly also have a higher education level and generally have no problems with the Dutch language. Moluccans are the immigrant population with the lowest incidence of low income. The education level of this group is relatively high.

Data extraction process

We analysed data from January 1, 2010, to December 31, 2010, which were the most recent and complete data available at the time of our data request. The variables selected from the Achmea Health Database included the following: all drugs dispensed by pharmacists (drugs dispensed by hospital pharmacies were not included), health services provided by GPs and other primary care professionals (such as physical therapists), and chronic disease management programmes coordinated by practice nurses in primary care. Other variables selected were hospital services (consisting of hospital admissions as well as diagnostic and therapeutic services) and medical aids provided for the treatment of medical conditions.

Socio-demographic variables included age (on January 1, 2010), gender, neighbourhood status (deprived or non-deprived), and type of health insurance. Deprieved neighbourhoods were defined by postal codes. We used the postal codes for deprived neighbourhoods as registered by The Dutch Healthcare Authority (NZa). Everyone who is registered as a resident of the Netherlands is obligated to have basic health insurance. In addition to the basic insurance, it is possible to purchase additional health insurance to cover services such as physical therapy and dental care. The type of health insurance was defined according to whether the insured person had basic health insurance or additional health insurance on January 1, 2010.
Chapter 2

Data analysis

We compared data from the four ethnic minority groups with those of a randomly sampled equally sized Dutch reference group with respect to mean costs per insured person for GP services, receipt of prescriptions, physical therapy, hospital services, and medical aids. Cost estimates were based on tariffs. Additionally, we investigated differences in the frequency of use and in the proportion of insured persons receiving these services.

Given the need to compare the ethnic groups in terms of arithmetic mean costs which is the most informative measure for cost data and statistical analysis based on transferring cost data or comparing medians using standard non-parametric methods may provide misleading conclusions, we used analyses of variance (ANCOVA) of untransformed costs whereby we adjusted for age and gender. ANCOVA is a method known to be fairly robust to non-normality especially if the sample size is large. We performed also ANCOVAs to evaluate differences in frequency of use whereby we again adjusted for age and gender. An ANCOVA yielding significant results was followed by post hoc multiple comparison testing using the Bonferroni test.

Chi-square tests were performed to evaluate differences in the proportion of care users. Given the need to determine whether the results were affected by age and gender, we additionally performed separate group analyses by age and gender. The statistical significance level was set at 0.05. All analyses were performed in SPSS 20.0 for Windows.

RESULTS

Data from 10,316 Turkish, 14,490 Moroccan, 8,619 Surinamese, and 1,064 Moluccan adults aged 55 years and older were compared with a sample of 33,725 ethnic Dutch individuals.

As shown in Table 1, the mean age ranged from 63.6 to 64.5 years. The Moroccans had a relatively high proportion of males (57.3%). A large proportion of Moroccans (40.8%), Turks (37.0%), and Surinamese (29.5%) lived in deprived neighbourhoods.

As shown in Table 2 (unadjusted), higher proportions of Turks, Moroccans, and Surinamese and lower proportions of Moluccans used GP services and received medication compared with ethnic Dutch older adults. The total proportion of Moroccans (29.5%) and Moluccans (25.2%) who received physical therapy was lower than that of the ethnic Dutch (30.7%). The percentages of Surinamese (65.3%) and Turks (63.6%) who used hospital services were higher than that of ethnic Dutch (59.8%). The proportions of Surinamese, Turks, and Moroccans using medical aids were significantly higher compared with the ethnic Dutch (34.7%). The overall results remained unaffected after performing separate group analyses by age and gender.

Table 1 | Socio-demographic characteristics

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Moroccan (N=14,490)</th>
<th>Turkish (N=10,316)</th>
<th>Surinamese (N=8,619)</th>
<th>Moluccan (N=1,064)</th>
<th>Dutch (N=33,725)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean, SD)</td>
<td>64.1 (7.1)</td>
<td>64.0 (7.1)</td>
<td>64.5 (8.8)</td>
<td>63.6 (8.7)</td>
<td>64.4 (7.8)</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Gender, male (%)</td>
<td>57.3&lt;sup&gt;1&lt;/sup&gt;</td>
<td>49.4&lt;sup&gt;1&lt;/sup&gt;</td>
<td>44.1&lt;sup&gt;1&lt;/sup&gt;</td>
<td>46.2&lt;sup&gt;1&lt;/sup&gt;</td>
<td>51.2</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Living in a deprived neighbourhood (%)</td>
<td>40.8&lt;sup&gt;1&lt;/sup&gt;</td>
<td>37.0&lt;sup&gt;1&lt;/sup&gt;</td>
<td>25.4&lt;sup&gt;1&lt;/sup&gt;</td>
<td>7.8</td>
<td>8.0</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Additional health insurance (%)</td>
<td>92.7&lt;sup&gt;1&lt;/sup&gt;</td>
<td>92.9&lt;sup&gt;1&lt;/sup&gt;</td>
<td>87.6&lt;sup&gt;1&lt;/sup&gt;</td>
<td>82.2&lt;sup&gt;1&lt;/sup&gt;</td>
<td>91.0</td>
<td>&lt; 0.0001</td>
</tr>
</tbody>
</table>

<sup>1</sup> Mean differs significantly from that of the ethnic Dutch population (p < 0.05).
<sup>2</sup> Proportion differs significantly from that of the ethnic Dutch population (p < 0.05).

Table 2 | The unadjusted proportions of insured individuals receiving different health care services (2010)

<table>
<thead>
<tr>
<th>Health service</th>
<th>Moroccan</th>
<th>Turkish</th>
<th>Surinamese</th>
<th>Moluccan</th>
<th>Dutch</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP services (%)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>88.4&lt;sup&gt;1&lt;/sup&gt;</td>
<td>90.4&lt;sup&gt;1&lt;/sup&gt;</td>
<td>87.3&lt;sup&gt;1&lt;/sup&gt;</td>
<td>79.9&lt;sup&gt;1&lt;/sup&gt;</td>
<td>82.7</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Receipt of prescriptions (%)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>92.2&lt;sup&gt;1&lt;/sup&gt;</td>
<td>94.1&lt;sup&gt;1&lt;/sup&gt;</td>
<td>89.8&lt;sup&gt;1&lt;/sup&gt;</td>
<td>80.2&lt;sup&gt;1&lt;/sup&gt;</td>
<td>85.4</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Physical therapy (%)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>29.5&lt;sup&gt;1&lt;/sup&gt;</td>
<td>30.9&lt;sup&gt;1&lt;/sup&gt;</td>
<td>33.4&lt;sup&gt;1&lt;/sup&gt;</td>
<td>25.2&lt;sup&gt;1&lt;/sup&gt;</td>
<td>30.7</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Hospital services (%)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>60.1</td>
<td>63.6&lt;sup&gt;1&lt;/sup&gt;</td>
<td>65.3&lt;sup&gt;1&lt;/sup&gt;</td>
<td>48.5&lt;sup&gt;1&lt;/sup&gt;</td>
<td>59.8</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Medical aids (%)&lt;sup&gt;1&lt;/sup&gt;</td>
<td>36.8&lt;sup&gt;1&lt;/sup&gt;</td>
<td>38.8&lt;sup&gt;1&lt;/sup&gt;</td>
<td>42.8&lt;sup&gt;1&lt;/sup&gt;</td>
<td>28.5&lt;sup&gt;1&lt;/sup&gt;</td>
<td>34.7</td>
<td>&lt; 0.0001</td>
</tr>
</tbody>
</table>

<sup>1</sup> Proportion differs significantly from that of the ethnic Dutch population (p < 0.05).
<sup>2</sup> Health services provided by general practitioners (GPs) and practice nurses in primary care.
<sup>3</sup> All medications dispensed by pharmacies (drugs dispensed by hospital pharmacies are not included).
<sup>4</sup> Hospital admissions and diagnostic and therapeutic services provided in hospitals.
<sup>5</sup> Medical aids prescribed to treat a disorder or to help with a limitation (except medical aids provided while admitted or medical specialist treatment related to admission or treatment).

Table 3 (adjusted for age and gender) summarises the mean individual use of health care services (± SE) among older adults from ethnic minority groups. The mean number of GP services and receipt of prescriptions per user showed similar trends; Turks, Moroccans, and specifically the Surinamese had higher numbers per user compared with the ethnic Dutch. The Moroccans (16.3 ± 0.3) and Turks (15.4 ± 0.3) received significantly fewer physical therapy sessions, compared with the ethnic Dutch (18.9 ± 0.2). The mean use of hospital services among Moroccans, Turks, and Moluccans did not differ from that of the ethnic Dutch. In contrary to the other ethnic minority groups, the Surinamese had a significantly higher number (9.0 ± 0.2) of medical aids compared with the ethnic Dutch (7.8 ± 0.1).

As shown in Table 4 (adjusted for age and gender), the mean total costs per person (± SE) were lower for all ethnic minority groups, except the Surinamese (€3843.3 ± 87.2), compared with the costs for ethnic Dutch (€3473.3 ± 44.0). The mean costs per person for GP services and prescription medications showed similar trends; Surinamese, Turks, and Moroccans had higher costs than the ethnic Dutch. The mean costs per person for
hospital services were lower for Turks (€1922.7 ± 70.5), Moroccans (€1854.3 ± 59.6), and Moluccans (€1472.1 ± 219.5) than for the ethnic Dutch (€2303.6 ± 39.0). The mean costs per person for physical therapy were lower for all minority groups, except the Surinamese, compared with the costs for ethnic Dutch. The Surinamese had higher mean costs per person for medical aids than the ethnic Dutch, but were lower for Turks, Moroccans, and Moluccans.

Table 3 | The adjusted mean number of health care interventions per user (2010)1

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Morocco</th>
<th>Turkish</th>
<th>Surinamese</th>
<th>Moluccan</th>
<th>Dutch</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>12,812</td>
<td>9,326</td>
<td>7,521</td>
<td>8,850</td>
<td>27,900</td>
</tr>
<tr>
<td>GP services (mean, SE)2</td>
<td>6.6 (0.1)</td>
<td>6.8 (0.1)</td>
<td>7.4 (0.1)</td>
<td>5.8 (0.2)</td>
<td>6.3 (0.0)</td>
</tr>
<tr>
<td>Receipt of prescriptions (mean, SE)3</td>
<td>34.3 (0.6)</td>
<td>36.7 (0.7)</td>
<td>41.1 (0.7)</td>
<td>28.3 (2.2)</td>
<td>30.1 (0.4)</td>
</tr>
<tr>
<td>Physical therapy (mean, SE)4</td>
<td>16.3 (0.3)</td>
<td>15.4 (0.3)</td>
<td>18.7 (0.4)</td>
<td>16.1 (1.2)</td>
<td>18.9 (0.2)</td>
</tr>
<tr>
<td>Hospital services (mean, SE)5</td>
<td>3.1 (0.0)</td>
<td>3.1 (0.1)</td>
<td>3.4 (0.1)</td>
<td>2.8 (0.2)</td>
<td>3.1 (0.0)</td>
</tr>
<tr>
<td>Medical aids (mean, SE)6</td>
<td>7.5 (0.2)</td>
<td>6.9 (0.2)</td>
<td>9.0 (0.2)</td>
<td>6.8 (0.7)</td>
<td>7.8 (0.1)</td>
</tr>
</tbody>
</table>

1 Adjusted for age and gender.
2 Mean differs significantly from that of the ethnic Dutch population (p < 0.05).
3 Mean costs of medical aids prescribed to treat a disorder or to help with a limitation (except medical aids provided while admitted or medical specialist treatment related to admission or treatment).
4 Mean costs of medical aids and diagnostic and therapeutic services provided in hospitals.
5 Mean costs of medical aids prescribed to treat a disorder or to help with a limitation (except medical aids provided while admitted or medical specialist treatment related to admission or treatment).
6 Mean costs of medical aids prescribed to treat a disorder or to help with a limitation (except medical aids provided while admitted or medical specialist treatment related to admission or treatment).

Table 4 | The adjusted mean costs of different health care services per insured persons (2010)1,2,3

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Morocco</th>
<th>Turkish</th>
<th>Surinamese</th>
<th>Moluccan</th>
<th>Dutch</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>14,490</td>
<td>10,316</td>
<td>7,744</td>
<td>8,853</td>
<td>28,793</td>
</tr>
<tr>
<td>Total costs (mean, SE)4</td>
<td>3049.8 (67.3)</td>
<td>3149.4 (79.6)</td>
<td>3843.4 (87.2)</td>
<td>2300.0 (247.9)</td>
<td>3473.3 (44.9)</td>
</tr>
<tr>
<td>GP services (mean, SE)5</td>
<td>56.8 (0.5)</td>
<td>58.7 (0.6)</td>
<td>60.8 (0.6)</td>
<td>42.0 (1.8)</td>
<td>48.7 (3.3)</td>
</tr>
<tr>
<td>Receipt of prescriptions (mean, SE)6</td>
<td>819.4 (15.6)</td>
<td>855.8 (18.7)</td>
<td>871.2 (20.5)</td>
<td>545.9 (58.3)</td>
<td>727.2 (10.4)</td>
</tr>
<tr>
<td>Physical therapy (mean, SE)7</td>
<td>141.3 (4.4)</td>
<td>139.3 (4.5)</td>
<td>186.4 (4.7)</td>
<td>122.5 (12.7)</td>
<td>176.7 (2.3)</td>
</tr>
<tr>
<td>Hospital services (mean, SE)8</td>
<td>1854.3 (59.6)</td>
<td>1922.7 (70.5)</td>
<td>2478.0 (77.2)</td>
<td>1472.1 (219.5)</td>
<td>2303.6 (39.0)</td>
</tr>
<tr>
<td>Medical aids (mean, SE)9</td>
<td>178.1 (6.5)</td>
<td>172.9 (7.1)</td>
<td>247.0 (8.4)</td>
<td>117.4 (24.0)</td>
<td>217.2 (4.3)</td>
</tr>
</tbody>
</table>

1 Adjusted for age and gender.
2 The costs are indicated in Euros.
3 The health disadvantage previously observed within most ethnic minority elderly populations does not result in overall more frequent use of health care services. Although we found that the use of primary health care facilities (GP services and medication prescriptions) within most ethnic minority groups is higher than that for ethnic Dutch, they generally make less use of hospital care, medical aids, and physical therapy. Our study confirms that older adults from ethnic minorities and ethnic Dutch older adults differ in health care utilisation. However, the pattern of differences is rather complex as the differences depend on ethnic group and type of health care.

The use of physical therapy was lower for the Moroccans and Turks. This finding was remarkably as older adults from these minorities are known to have a higher prevalence of musculoskeletal disorders. The lower costs could be explained by the lower usage frequency of physical therapy. Despite the quite comparable number of therapy users among Moroccans and Turks compared with the ethnic Dutch, it seems that physical therapy care is discontinued sooner. This cannot be explained by reimbursement.
restrictions, such as not having the required supplemental insurance package, as most Moroccans and Turks did have additional health insurance (92.7% and 92.9%, respectively). It is possible that compliance with physical therapy is not optimal for the Turks and Moroccans due to unfamiliarity with this type of care and cultural discrepancies with regard to expectations and treatment preferences.

The costs of drugs dispensed by pharmacists were higher for the Moroccans, Turks, and Surinamese, which could be explained by a higher proportion of individuals in these groups receiving medication and by a greater number of prescriptions received per user. This higher number of dispensed prescriptions may be explained by the fact that patients from ethnic minorities more frequently expect a prescription in medical consultations and have higher expectations from the effectiveness of pharmacotherapy. Another explanation may be the higher prevalence of chronic conditions and associated comorbidities that have been reported among these ethnic groups.

The costs of GP services were higher for the Moroccans, Turks, and Surinamese, which could be explained by the higher proportion of individuals in these groups who received GP care and by the slightly higher number of GP services they received. Higher use of primary care services may be related to an increased consultation rate due to poorer health perception, increased symptom alertness, and a higher prevalence of chronic disorders. Patients from ethnic minority groups are more likely to consult their GP for minor issues, which may be due to insufficient knowledge of diseases and possibilities for self-care. A third possible explanation is that language difficulties and cultural discrepancies with regard to expectations affect the quality of care and result in repeat consultations. This explanation may be less applicable to the Surinamese, as they are generally fluent in the Dutch language.

Hospital care usage among Turkish and Moroccan older adults was lower than expected. The higher use of GP services combined with the relatively lower use of hospital care might be an indication that these ethnic groups are more inclined to consult their GP for minor complaints for which referral to hospital care is not required. It may also be that GPs refer patients from these groups to hospital care less often. A poorly experienced GP consultation due to language difficulties and cultural discrepancies may complicate the referral process.

The systematically lower health care usage among Moluccans compared with the ethnic Dutch probably reflects the better health status of this group, as has been reported in previous studies.

Differences in cultural characteristics may have affected health care usage within these groups through health-related attitudes and beliefs that were learned during the process of acculturation. The way in which health problems are perceived are culturally determined and may have influenced decisions regarding health care use. Remarkably, not only did the Turks and Moroccans have a different pattern of health care usage than the ethnic Dutch, but so did the Surinamese and Moluccans. The latter groups are known to have a higher acculturation level and more self-identification with Dutch society than Turks and Moroccans. This may indicate that better acculturation does not automatically lead to a comparable health care use.

Comparison with previous research

Although the number of studies conducted within ethnic minority elderly groups are limited, our findings are largely comparable regarding GP care, physical therapy, and hospital care. The comparison of differences in medication use is complicated because we analysed the dispensed medications by pharmacists, while previous studies studied the actual utilisation as reported by the patient. Receipt of prescriptions does not necessarily lead to consumption of the medication and differences could well be a reflection of poor compliance with prescribed medication. Nevertheless, we do not have indications that the differences in methods of data collection influenced our results. The number of outpatient prescriptions we found is comparable to self-reported use in previous studies.

Limitations

There are several limitations to our study that need to be considered when interpreting our results. A first limitation is that we could not assess whether the differences in health care utilisation as observed in our study can be interpreted as ethnic inequities in health care, either in accessibility or quality. We lacked information on medical need (the need for medical care based on a professional judgment about people’s health status) for health care, patient treatment preferences (ethnic groups may vary in their preferences for certain treatments), and treatment adherence, which is required for the interpretation of ethnic variations in health care use as potential inequitable. Additionally, the consequences of the observed differences in health care use for health outcomes could not be analysed. Additional analysis of the consequences of the ethnic differences in health care use found for health outcomes might have provided insight into the potential inequity of these differences in health care use.

A second limitation was that cost estimates were based on tariffs instead of real costs. The actual costs could, therefore, have been lower of higher than the health care tariffs used in our study. Nevertheless, we did not have indications that a tariff for any of the health services did not represent an approximation that reflects the actual costs.

A third limitation was the ethnic Dutch group might include second-generation people with a Dutch father and a non-Dutch mother as a result of identification of ethnicity by last name (father’s last name). The same is true for Creole-Surinamese. They could not be identified by last name, because their last names are not sufficiently different from those of the ethnic Dutch. Given the large ethnic Dutch group included in our study, we assume that this has not affected our results.
A fourth limitation was the presence of outliers in our data. Patients with severe disease do have an increased use of health care services and induce above average costs. Because these outliers could have biased the results in our study, we recalculated the results after exclusion of the patients that were in the below 5% and above 95% range of total costs. This did not affect the results, the means and trimmed means showed similar patterns. Therefore, it is not likely that the outliers influenced our findings.

Finally, we did not provide information on over-the-counter medication, which could have influenced the results on the actual utilisation of medication. Such an influence, however, is not plausible because most medications in the Netherlands are dispensed based on prescriptions. Over-the-counter medications are limited to drugs such as aspirin, NSAIDs, H2 blockers, and laxatives.

CONCLUSIONS

The health disadvantage previously observed within most ethnic minority elderly populations does not result in overall more frequent use of health care services. Further research is needed for the interpretation of ethnic variations in health care use as observed in this study as potentially inequitable, by taking medical need, patient treatment preferences, and treatment adherence into account. We also recommend research on the consequences of the ethnic differences in health care use for health outcomes. This may provide insight into the presence of potential ethnic health care inequities.

REFERENCES


CHAPTER 3

Community health worker interventions to improve access to health care services for older adults from ethnic minorities: A systematic review

Verhagen I
Steunenberg B
De Wit NJ
Ros WJG

BMC Health Services Research 2014;14:497.
ABSTRACT

Background
The health status of older adults belonging to ethnic minorities in Western countries is an important public issue because their health is often less favourable than that of older adults from the majority population. In addition, the number of older adults belonging to ethnic minorities is increasing rapidly in Western countries. The introduction of community health workers (CHWs) has proven to be successful in addressing health disparities among ethnic minorities; however, an overview of CHW’s benefits for older adults is absent in the literature. We reviewed the literature to explore whether CHWs are also effective in improving the health and the delivery of health care services to ethnic minority older adults in Western countries.

Methods
We searched the PubMed database (2002-Present) for RCTs published on the use of CHWs in Western countries.

Results
Out of the 729 studies identified, seven studies met our inclusion criteria. The effectiveness of the implementation of CHW programmes in older adults belonging to ethnic minorities is not univocal. In two studies, we found no significant differences. In five studies, we found some positive effects. We did not find negative effects in any of the studies. For better interpretation of the results, effect ratios (ERs) were calculated as the number of positive findings divided by the total number of measured findings. Substantial effects on the access to care (mean ER= 0.58) and on health behaviour (mean ER= 0.45) were found. The mean ER for health outcomes was considerably lower (mean ER= 0.17).

Conclusion
We found indications that CHWs serve as a means of improving health care use and health behaviour and, to a lesser extent, health outcomes among ethnic minority older adults. Further research is required to draw more solid conclusions on the effectiveness of CHW interventions in this target group. This is particularly important for Western countries in which the number of ethnic minority older adults has increased significantly because their health status is mostly unfavourable and their access to health care services is often limited.

BACKGROUND
The health status of most ethnic minority groups in Western countries is poorer than the health status of the majority population. This is especially applicable for ethnic minority older adults. Limited access to health care services has been reported to be an important factor for these disparities in health and is in part caused by limited knowledge about health care facilities, language problems, and financial barriers. Intercultural differences in the perception of health needs and reasons for consultation may be other important contributing factors.

Culturally sensitive interventions such as the introduction of community health workers (CHWs) have been used to address health disparities among ethnic minorities. CHWs share the same ethnic background, speak the same language, are aware of the health beliefs and understand the barriers to health care that ethnic minority adults experience. In addition, they act as intermediaries between community members and providers of health care services. CHWs are employed in various programmes to reduce disparities in health, most frequently related to specific health conditions such as cancer, diabetes, hypertension, asthma, nutrition, and tobacco control. CHWs work in various functions: to improve health knowledge, to increase access to health care, to induce behavioural changes, and to reduce health care costs.

In the US, the implementation of CHWs has been identified as a strategy to address disparities in health status among ethnic minorities since the 1960s. Over the last decades, the number of intervention studies aiming to address health disparities using CHWs has increased rapidly in the US. The effectiveness and content of CHW interventions for ethnic minorities have been reported in a previous review of ethnic minority women of all ages in the US. CHWs have been demonstrated to be effective in increasing health knowledge, changing health behaviour, and increasing access to care in this target group. However, an overview of CHW benefits for older adults is lacking in the literature.

We aimed to investigate whether CHWs are also effective in providing the aforementioned benefits to ethnic minority older adults. The number of older adults from ethnic minorities is increasing rapidly in Western countries, and their utilisation of health facilities has been reported to lag behind. Better access to health care would optimising their health and enable them to maintain independence, improve societal participation, and diminish existing disparities. Therefore, we systematically reviewed the literature on the implementation of CHW programmes in ethnic minority older adults in Western countries.
COMMUNITY HEALTH WORKER INTERVENTIONS: A SYSTEMATIC REVIEW

Chapter 3

Methods

Protocol and registration
Methods of analysis and inclusion were specified in advance, but not documented in a review protocol.

Search strategy

In addition, we used the PubMed filters “full text available”, “English language”, “published in the last ten years”, and “age 45 years and over”.

Inclusion criteria
• Type of intervention: CHW interventions focussed on health-related outcomes.
• Type of studies: randomised controlled trials (RCTs) that compared a CHW arm against a control arm receiving either usual care, no intervention, or another intervention.
• Target population: ethnic minority older adults (50 years and over). Studies in which ethnic minority older adults were at least 70% of the total sample or in which the results were specified for ethnic older adults. The minimum age was set to 50 because adults belonging to ethnic minority groups often experience health problems at a younger age than the majority population.
• Setting: studies conducted in Western countries. Western countries were limited to Europe, the US, Canada, Australia, and New Zealand because these countries currently host a growing number of aging adults belonging to ethnic minorities.
• Time period: studies published in the last ten years. The time period was limited to the last ten years to include recently conducted studies.

Exclusion criteria
Studies were excluded if:
• The intervention was not adequately described to determine that it was a CHW intervention.
• The effects were not properly described to determine whether the CHWs produced the effects.

Methodological quality
Two reviewers (IV and BS) independently performed the methodological quality assessment of the included studies. Because all studies were RCTs, the methodological quality was assessed using the Cochrane criteria for RCTs from the Dutch Cochrane Centre (Table 1). Two items (blinding of participant and blinding of care provider) were disregarded because these items were not applicable to the evaluated field interventions. Two items were added (statistical power and validity and reliability of the measuring instruments). Follow-up was considered acceptable if the loss to follow-up did not exceed 20% because the extant research suggests that more than 20% loss poses serious threats to validity.

Each item scored 1 point (+) if the criterion was met, 0.5 points (+/-) if the criterion was partially met, and 0 points (-) if the criterion was not met. The score was “?” if the information was not reported or unclear. We reported “NA” if the item was not applicable. The total score for the methodological quality was calculated by summing the subscores. We adjusted the total scores for “NA” (by summing the subscores, dividing this score by the total number of applicable items, and multiplying it by the total number of items). Methodological quality was considered “high” between 8 and 9, “moderate” between 4 and 7, and “low” between 1 and 3.

Data extraction and analysis
Two reviewers (IV and BS) independently screened the importance of all titles and abstracts searched in PubMed. The full text of all articles that were considered as possibly relevant was further screened based on inclusion criteria by either reviewer. Selected
articles eligible for inclusion were compared, and discrepancies were discussed by the reviewers and resolved by consensus. When the two reviewers disagreed on the eligibility, the decision was referred to a third reviewer (WR).

In addition, one reviewer (IV) extracted data from the included studies and documented these data on a data extraction sheet. Information was extracted from each included study on: (1) study features (including objective, setting, study design, length of follow-up, health focus); (2) number of study participants; (3) type of intervention; (4) type of CHW (including term used for the CHW, CHW’s role, paid or volunteer, number of CHWs, training, supervision); (5) characteristics of the target population (including age, gender, ethnicity/race); (6) results. If the effect of CHW interventions was evaluated on more than one outcome (e.g., health behaviour and health outcomes), the impact on each outcome was evaluated and documented independent of the results for the other outcomes.

The studies were categorised according to CHW roles and outcomes assessed. According to Andrews 14, the CHW roles were grouped into four categories based on the aim of their intervention: outreach, case management, data collection, and education. In line with other reviews on CHWs, outcomes were grouped into three categories: access to care, health behaviour, and health status.

The p-values were grouped into three categories: \( p \leq 0.05 \) was considered “significant”, \( p > 0.05 \) and \( \leq 0.10 \) as “a trend towards significance”, and \( p > 0.10 \) as “not significant”. Because the studies differed in the number of measured outcomes, we assessed the “effect ratio (ER)” by dividing the total number of (trend towards) significant outcomes by the total number of measured outcomes. The ER made comparisons between studies possible because it took the differences in the number of measured outcomes into account. The ER ranged from 0 to 1. A score of 0 indicated that there was no significant effect, and a score of 1 indicated that all measured outcomes were significant. We calculated the mean ER per outcome category (access to care, health behaviour, and health outcomes) by summing the ERs per outcome category and dividing the total score by the total number of ERs for that particular category.

Because one study 18 did not report the significance of between-groups differences, we considered the CHW arm and the usual care arm as significantly different if the confidence intervals did not overlap.

RESULTS

As a result of our selection process, 729 studies were identified in PubMed. After an abstract review, 73 studies were considered potentially eligible for inclusion. Eight studies could not be retrieved online, and the full text of four of them was obtained by contacting the first author. Of the resulting 69 studies, 62 were excluded for not meeting the inclusion criteria (Figure 1). The resulting seven studies were included in this review. Two papers were based on data from the same study population 18-19. We evaluated the content of these papers as two separate studies because of the difference in their study objectives.

All included studies took place in the US and were focussed on specific ethnic populations (Table 2). Five studies targeted Hispanics/Latinos, one study targeted African Americans, and one study targeted Koreans. In four studies, the intervention was solely focussed on women. Additionally, in four studies, CHWs had more than one role. CHWs had an outreach role in which they recruited participants for the study (n= 1). In four studies, CHWs were case managers by e.g., offering emotional support, scheduling appointments, providing reminders of appointments, providing educational information, arranging travel, and accompanying patients to appointments. In three studies, CHWs collected data, and in five studies, they provided educational programmes.

Figure 1 | Flow Diagram
Methodological quality
As shown in Table 1, two studies reported concealment of the allocation. Six studies did not use a power analysis to calculate the sample size. In four studies, an intention-to-treat analysis was conducted. Five studies reported an acceptable percentage of loss to follow-up (not greater than 20%). Two studies met this criterion to some extent because loss to follow-up exceeded the 20% in the intervention arm (22%) but not in the usual care arm (20%). Six studies reported the comparability of groups. One study fulfilled this criterion partially because not all baseline characteristics were identical. In four studies, objective and validated measuring instruments (laboratory measurements and/or questionnaires) were used. Six studies reported the comparability of treatment (except the introduction of CHWs). One study met this criterion partially because those in the CHW arm were referred to educational classes at three of the four sites, while at one site, verbal education was provided.

The total scores (within a range of 0–9 points) of the methodological quality ranged from 3.9 to 7.3. Six studies scored four points or more, indicating a moderate methodological quality. None of the studies had an optimal methodological quality.

Effectiveness of interventions
The outcomes of the studies were reported in three different categories: access to care, health behaviour, and health status (Table 2). No studies with knowledge as an outcome were found. Three studies evaluated more than one outcome category.

Access to care
A study of Korean women showed positive results. Using a full case analysis, statistically significant ($p = 0.001$) higher rates of completion of diagnostic follow-up after breast cancer screenings were reported in the CHW intervention arm compared to the usual care arm. An intention-to-treat analysis showed a trend towards significance ($p = 0.069$) for the difference in the completion of diagnostic follow-up, favouring the CHW intervention arm. An ER of 1.00 was found.

A study of primarily Hispanic women also showed positive results. Statistically significant ($p = 0.005$) higher rates of endoscopy appointments at three months were found in the CHW intervention arm compared to the usual care arm. A trend towards significance ($p = 0.086$) was found for completing faecal occult blood tests (FOBT) after three months: a greater proportion of women in the CHW intervention arm completed the FOBT. No statistically significant differences in the completion of endoscopy at three months were found. The ER for this study was 0.75.

A third study with Hispanic women did not show statistically significant differences in the number of women returning for a second annual preventive exam compared to women receiving only postcard reminders. Consequently, the ER was 0.00.

The mean ER for the outcome category “access to care” was 0.58.
<table>
<thead>
<tr>
<th>Author</th>
<th>Publication year</th>
<th>Objective</th>
<th>Setting</th>
<th>Study design</th>
<th>Length of follow-up</th>
<th>Health focus</th>
<th>CHW Term used for CHW</th>
<th>CHW’s role</th>
<th>CHWs (N)</th>
<th>Study features</th>
<th>Objective</th>
<th>Setting</th>
<th>Study design</th>
<th>Length of follow-up</th>
<th>Health focus</th>
<th>Results</th>
<th>Effect ratio</th>
<th>Mean effect ratio</th>
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</thead>
<tbody>
<tr>
<td>Hunter et al.</td>
<td>2004</td>
<td>To test the effectiveness of a promotora programme to increase compliance with annual preventive exams among uninsured Hispanic women aged 40 and older living at the U.S.-Mexico border</td>
<td>N= 103</td>
<td>N= 101</td>
<td>G1: postcard</td>
<td>Accessibility</td>
<td>N= 51</td>
<td>Promotora</td>
<td>Case management</td>
<td>G1: 50.3 (± 7.5)</td>
<td>Returned to the clinic for a second annual exam</td>
<td>0.58 (0.00+0.75+1.00)/3</td>
<td></td>
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<tr>
<td>Jandorf et al.</td>
<td>2005</td>
<td>To determine whether a patient navigator would enhance CRC screening participation beyond that due to physician recommendation alone in a neighbourhood health clinic</td>
<td>N= 125</td>
<td>N= 78</td>
<td>G1: patient</td>
<td>Patient navigator</td>
<td>N= 1</td>
<td>Case management</td>
<td>Data collection</td>
<td>G1: 61.2 (± 7.8)</td>
<td>Completed FOBs after 3 months, Had endoscopy appointment at 3 months</td>
<td>0.75 (3/4)</td>
<td></td>
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</table>

**Table 2 I General characteristics and outcome effectiveness of the included studies**
Maxwell et al. 2010

To test a peer navigation programme to increase adherence to diagnostic follow-up test after breast cancer screening among Asian American women US RCT 6 months


Table 2 | Continued

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>0.45</th>
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<tr>
<td>Gary et al. 2003</td>
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<td>To determine whether multifaceted, culturally sensitive primary care–based behavioural intervention implemented by a nurse case manager (NCM) and/or a CHW improves HbA1c and other diabetic control indicators in urban African Americans with type 2 diabetes</td>
<td></td>
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<tr>
<td>US RCT 2 years</td>
<td></td>
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<tr>
<td>Diabetes type 2</td>
<td>0.00 (0/3)</td>
</tr>
<tr>
<td>2010</td>
<td>To promote behaviour changes to decrease CVD risk factors in a high-risk Hispanic border population</td>
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<td>-------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>G1:</td>
<td>promotores de salud</td>
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<td>G2:</td>
<td>basic educational materials</td>
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<td>N: 328</td>
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<tr>
<td>G37:</td>
<td>N: 3</td>
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</table>
Perceived susceptibility
G1: 3.5 (± 0.4)
G2: 3.4 (± 0.5)
P = 0.01

Self-efficacy and perceived severity were not significantly different between the two intervention groups

Hayashi et al. 2010
To evaluate the short-term impact of a lifestyle intervention on CVD risk factors and health behaviours among underserved middle-aged Hispanic women with one or more CVD risk factors
US
RCT
12 ± 2.5 months
Cardiovascular disease
N= 1093
N= 1093
N= 869
G1: lifestyle intervention delivered by CHWs
G2: usual clinical care
G1: 3 face-to-face sessions of assessment and counselling for nutritional and physical activity
G2: educational classes or verbal education
N= 8
N= 8
2.5-day hands-on training on conducting the study—trained by professionals specialised in lifestyle counselling, evaluation and cardiovascular health
Supervised by clinical staff member (RN)—content NR
CHWs
Education, data collection
NR
100%
100% Hispanic American
High improvement in eating habits vs. no change
Relative risk ratio: 3.32 (p < 0.001)
Low improvement in eating habits vs. no change
Relative risk ratio: 1.56 (p = 0.105)
Worse vs. no change in eating habits
Relative risk ratio: 0.90 (p = 0.681)

G2: educational pamphlets on high blood pressure and high cholesterol, educational classes or verbal education
G1: N= 552
G2: N= 541

High improvement in physical activity vs. no change
Relative risk ratio: 2.11 (p < 0.001)
Low improvement in physical activity vs. no change
Relative risk ratio: 2.26 (p = 0.006)
Worse vs. no change in physical activity
Relative risk ratio: 0.83 (p = 0.507)
No significant between-groups differences for smoking
To assess the effect of a CHW programme on low-income Latinas’ readiness to change physical activity and on physical activity behaviour.

### Participants

**US RCT**

- **N= 1093**
- **G1: lifestyle intervention delivered by CHWs**
- **G2: usual clinical care**

#### Intervention Details

- **G1**: 3 individually tailored 2.5 day on intervention delivery—trained by programme staff and other state programme partners on study protocols, nutrition and physical activity behaviour, counselling, education, data collection.
- **G2**: usual care for elevated blood pressure or cholesterol, healthy behaviour education, hand outs, referral to healthy lifestyle education classes.

#### Outcome Measures

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>CHW Details</th>
<th>Comparison Group</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readiness to engage in vigorous physical activity</td>
<td>Education, data collection</td>
<td>G1: 52 (± 6)</td>
<td>2.34 (1.77-3.09)</td>
<td>1.26 (0.96-1.65)</td>
</tr>
<tr>
<td>Take up new physical activity</td>
<td></td>
<td>G1: 552</td>
<td>4.53 (3.37-6.10)</td>
<td>2.22 (1.66-2.95)</td>
</tr>
<tr>
<td>Perform daily activities more briskly</td>
<td></td>
<td>G1: 52 (± 6)</td>
<td>4.52 (3.39-6.02)</td>
<td>2.72 (2.06-3.59)</td>
</tr>
<tr>
<td>Incorporate physical activity into daily activity</td>
<td></td>
<td>G1: 52 (± 6)</td>
<td>5.21 (3.82-7.09)</td>
<td>3.06 (2.30-4.08)</td>
</tr>
<tr>
<td>Moderate physical activity</td>
<td></td>
<td>G1: 52 (± 6)</td>
<td>2.19 (1.57-3.07)</td>
<td>1.10 (0.80-1.50)</td>
</tr>
</tbody>
</table>

**Table 2 | Continued**

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>CHW Details</th>
<th>Comparison Group</th>
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<td>1.10 (0.80-1.50)</td>
</tr>
</tbody>
</table>

**Notes:**

- **NR = Not reported.**
- **100% Latina.**
- **Significant between-groups differences.**
- **Take up new physical activity.**
- **Significant between-groups differences.**
Table 2 | Continued

<table>
<thead>
<tr>
<th>HEALTH OUTCOMES</th>
<th>Gary et al. 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>To determine whether multifaceted, culturally sensitive primary care-based behavioural intervention implemented by a nurse case manager (NCM), and/or a CHW improves HbA1c and other diabetic control indicators in urban African Americans with type 2 diabetes in the US</td>
<td>2 years RCT Diabetes type 2</td>
</tr>
<tr>
<td>Health outcome</td>
<td>Community health worker</td>
</tr>
<tr>
<td>HbA1c</td>
<td>59 (± 9)</td>
</tr>
<tr>
<td>CHW</td>
<td>Case management, education G1: NCM/CHW</td>
</tr>
<tr>
<td>LDL cholesterol</td>
<td>G1: OR 3.37 (95% CI 2.38-4.77)</td>
</tr>
<tr>
<td>HDL cholesterol</td>
<td>G1: (0.00+0.29+0.22/3)</td>
</tr>
</tbody>
</table>
To promote behaviour changes to decrease CVD risk factors in a high-risk Hispanic border population, US RCT, 4 months.Cardiovascular disease.

Balcázar et al. 2010

<table>
<thead>
<tr>
<th>Table 2</th>
<th>To promote</th>
<th>N= 568</th>
<th>Promotores de salud G1: 53.5 (± 13.4)</th>
<th>Adjusted post-intervention differences at follow-up 0.29 (4/14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>behaviour changes</td>
<td>N= NR</td>
<td>Education G2: 54.0 (± 13.2)</td>
<td>Diastolic blood pressure (mm Hg) G1: 79.8 (± 9.3) G2: 75.5 (± 10.6) p &lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>to decrease CVD risk factors in a high-risk Hispanic border population, US</td>
<td>N= 328</td>
<td>NR G1: 75% G2: 68%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>N= 284</td>
<td>G1: promotora intervention 18 hours—content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCT</td>
<td>materials NR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 months</td>
<td>G1: 8 health classes</td>
<td>NR G1: 100% Hispanic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>conducted by promotores—every week for 2 months.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 months</td>
<td>G1: 1-week training (16-18 hours)—content</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 months</td>
<td>G2: basic educational materials provided in person at baseline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G1: N= 192</td>
<td>Follow-up—3 phone calls and small group sessions discussing changes and encouraging further changes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G2: N= 136</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other clinical measures (BMI, weight, Framingham risk score, metabolic syndrome, LDL cholesterol, HDL cholesterol, total cholesterol, triglyceride level, fasting blood glucose, systolic blood pressure). Other clinical measures were not significantly different between the two intervention groups.
Health behaviour

Two studies showed statistically significant positive changes in behaviours related to cardiovascular disease risk for Hispanics in the CHW arm. One study showed that the probability of achieving a high degree of improvement in eating habits relative to no change was greater for women in the CHW intervention arm than for women in the usual care arm (p < 0.001). Regarding physical activity, the probability of achieving a high degree of improvement in physical activity was also greater in the CHW intervention arm (p < 0.001). No statistically significant differences were found for smoking. The ER for this study was 0.43.

The second study reported statistically significant changes in salt intake (p < 0.001), cholesterol and fat intake (p = 0.01), weight control practices (p = 0.01), perceived benefits (p = 0.01), and perceived susceptibility (p = 0.01) in favour of the CHW intervention compared with the intervention based on providing basic educational materials. No significant differences were recorded for perceived severity and self-efficacy. We found an ER of 0.71 for this study.

A third study focused on physical activity within a Hispanic population. Significant positive changes in the readiness to engage in vigorous physical activity and take up new physical activity were reported in the CHW arm compared to the usual care arm. Significant changes in moderate as well as vigorous physical activity were found, favouring the CHW intervention arm. No significant differences were reported for other physical behaviours (performing daily activities more briskly and incorporating physical activity into daily activity). The ER for this study was 0.67.

In a study on reducing diabetes risk factors among African Americans, none of the behaviours (dietary risk score, leisure-time physical activity, or BMI) showed significant differences. Therefore, the ER was 0.00.

The mean ER for the outcome category “health behaviour” was 0.45.

Health status

Two studies focused on reducing cardiovascular disease (CVD) risk factors for Hispanics. One study showed a statistically significant (p < 0.001) change in diastolic blood pressure in the CHW arm compared to those receiving basic educational materials. Trends towards significance were found for waist circumference (p = 0.09), non-HDL cholesterol (p = 0.10), and HbA1c (p = 0.09), favouring the CHW intervention arm. No significant differences were reported for BMI, weight, blood glucose or three other cholesterol measures. The ER for this study was 0.29.
The second study reported a statistically significant higher reduction in systolic blood pressure in the CHW arm compared to the usual care arm. A trend towards significance ($p = 0.081$) was found for 10-year CHD risk. The other clinical measures (including BMI, cholesterol, and two other blood pressure measures) did not show significant changes. We found an ER of 0.22 for this study.

In a study on reducing diabetes risk factors among African Americans, no statistically significant differences were found for HbA1c or five other clinical measures. As a result, the ER was 0.00.

The mean ER for the outcome category “health outcomes” was 0.17.

**Discussion**

The present evidence for the effectiveness of CHW programmes for older adults from ethnic minorities is not univocal. In two studies, we found no significant differences in health outcomes among ethnic minority older adults.

The second study reported a statistically significant higher reduction in systolic blood pressure and a higher reduction in diastolic blood pressure in the CHW arm compared to the usual care arm. A trend towards significance ($p = 0.051$) was found for 10-year CHD risk. The other clinical measures (including BMI, cholesterol, and two other blood pressure measures) did not show significant changes. We found an ER of 0.22 for this study.

In a study on reducing diabetes risk factors among African Americans, no statistically significant differences were found for HbA1c or five other clinical measures. As a result, the ER was 0.00.

The mean ER for the outcome category “health outcomes” was 0.17.

**Limitations**

Our review revealed a number of methodological issues regarding the seven included studies. First, interventions were quite clearly described, and most details were reported except for training, supervision (content and duration) and CHW characteristics (e.g., age, gender, educational level, and payment). Therefore, we could not determine whether the type of training, supervision and type of CHW influenced the effectiveness of CHWs. A second issue was that several studies did not mention which components of the CHW interventions were effective and produced the reported effects. Third, we identified only a small number of studies. Therefore, robust conclusions on effectiveness could not be drawn. In addition, all studies have been conducted in the US which makes generalisation of the results of these studies to other Western countries questionable. Finally, none of the included studies reported outcomes regarding knowledge. We would expect that an improvement in behaviour through CHW counselling and education could also have improved knowledge. This hypothesis was confirmed in a previous review of studies of ethnic minority women of all ages in the US, in which an increase in knowledge was shown as a result of CHW education.

**Recommendations**

First, further research is needed to draw more solid conclusions regarding CHW’s effects on the access to health care services, health behaviour, and health outcomes of ethnic minority older adults. Additionally, further studies should include knowledge as an outcome to examine whether CHWs can improve knowledge in ethnic minority older adults. For outcomes in which CHW interventions showed benefits, further research is needed to understand which components make the interventions effective in older adults belonging to ethnic minorities. This can be done by process evaluation whereby participants of the intervention are involved (providers of health care facilities, ethnic minority older adults, and CHWs). More uniformity in the interventions can be useful to determine which elements made the interventions effective. This also means that future studies should evaluate whether the type of training, supervision, type of CHW, and the function(s) of CHWs have an impact on the effectiveness of CHWs. Therefore, a clear description of the training and supervision procedures used and a specification of the functions and the type of CHWs that delivered the intervention are needed. In addition, an additional cost-effectiveness study would be useful to determine whether CHW interventions are a cost-effective alternative to health interventions to promote and prevent diseases.

**CONCLUSION**

The implementation of CHW programmes might be effective in improving the health care access, health behaviour, and, to a lesser extent, health outcomes of older adults belonging to ethnic minorities, but further research is required to draw more solid conclusions. Further research is particularly important for Western countries in which the number of ethnic minority older adults has increased significantly because their health status is mostly unfavourable and their utilisation of health services is reported to lag behind that of the majority population.
REFERENCES


CHAPTER 4

Culturally sensitive care for elderly immigrants through ethnic community health workers: Design and development of a community-based intervention programme in the Netherlands

Verhagen I
Ros WJG
Steunenberg B
De Wit NJ

ABSTRACT

Background
In Western countries, health and social welfare facilities are not easily accessible for elderly immigrants and their needs are suboptimally addressed. A transition is needed towards culturally sensitive services to overcome barriers to make cure and care accessible for elderly immigrants. We developed an intervention programme in which ethnic community health workers (CHWs) act as liaisons between immigrant elderly and local health care and social welfare services. In this study we evaluate the effectiveness and the implementation of this intervention programme.

Methods/design
In a quasi-experimental design, the effectiveness of introduction of CHWs, health needs assessment, and follow-up intervention programme will be evaluated in three (semi) urban residential areas in the Netherlands and compared with a control group. CHWs are selected from local ethnic communities and trained for the intervention. Data on health perception, quality of life, and care consumption are collected at baseline and after the intervention programme. Elderly’s informal caregivers are included to examine caregiver burden. The primary outcome is use of health care and social welfare services by the elderly. Secondary outcomes are quality of life and functional impairments. The target number of participants is 194 immigrant elderly: 97 for the intervention group and 97 for the control group. Implementation of the intervention programme will be examined with focus groups and data registration of CHW activities.

Discussion
This study can contribute to the improvement of care for elderly immigrants by developing culturally sensitive care whereby they actively participate. To enable a successful transition, proper identification and recruitment of CHWs is required. Taking this into account, the study aims to provide evidence for an approach to improve the care and access to care for elderly immigrants. Once proven effective, the CHW function can be further integrated into the existing local health care and welfare system.

Trial registration
ISRCTN89447795

BACKGROUND

Generally speaking, elderly immigrants in the Netherlands perceive a poorer health 1-4, more chronic conditions 3,4, and a less favourable mental health compared to native Dutch elderly 3,4,5,6. Moreover, elderly immigrants report more often physical limitations 3,4,6,7, illiteracy 5, poor education 7, low degree of social cultural integration 7, poor living conditions 1, and cultural differences in perception of health 1 may contribute to their poorer health status. As a consequence the use of health care facilities differs between elderly immigrants and native Dutch elderly. Immigrant elderly visit their general practitioner more often 1,4,10, whereas the use of physical therapy 2,4,10, home care 3,8,10, and residential care is lower 3,11. The lower care consumption may be explained by limited knowledge about health care facilities 3,11, language problems 3,4, and/or financial barriers 3,11. Intercultural differences in perception of health needs and reasons for consultation may also contribute 11,12. In addition, health care facilities are not easily accessible for elderly immigrants and do not adequately address their needs 13. One of the major reasons is that elderly immigrants are not involved in the development of services. To improve care and access to care, a transition is needed towards culturally sensitive services whereby elderly immigrants actively participate.

A widely studied means for improving care and access to care for ethnic minorities is the introduction of so called ethnic community health workers. These are community health workers (CHWs) who share a common language and are ethnically part of the community. They are trusted and respected by the community members and have an understanding of the community health beliefs and the barriers to health care and social welfare services. They act as intermediaries between community members and providers of services 14,15. Most CHW programmes focus on reducing health disparities through improving individual health outcomes on specific areas such as nutrition, diabetes, chronic disease screening, and cancer screening 16. Research demonstrates that these CHW programmes are effective in providing health knowledge, increasing health care utilisation, changing health behaviour, and improving health status 17. Little is known about the impact of community advocacy activities by CHWs on access to care and health outcomes 18.

In order to improve care and access to care on a community level, we developed an intervention programme based on the practice of multicultural health brokering 19. The CHWs serve as cultural health brokers and provide one-on-one support to individuals in gaining access to and navigating the Dutch health and social welfare system. Besides, they catalyse institutional changes. In this way, the CHWs are also engaged in community-level advocacy.
To evaluate the intervention of this present study, a three-year study will be conducted to examine the effect of the introduction of CHWs on health perception, quality of life, and health care consumption of elderly immigrants in the Netherlands. The aim of this paper is to describe the design, the content of the intervention, and its strengths and challenges.

**METHODS**

**Design and setting**
We conduct a quasi experiment with a pre-post test design with an intervention group and control group in three (semi) urban residential areas in the Netherlands with each a concentration of immigrants. The intervention consists of selection and training of CHWs, assessment of health needs, and follow-up intervention programme coordinated by the CHWs.

**Participants**
Three immigrant populations in the Netherlands with a different migrant background take part: Turks, Moroccans, and Moluccans. These immigrant populations represent a large proportion of the elderly immigrant population in the Netherlands and therefore form a representative reflection of elderly immigrants in the Netherlands.

Turkish and Moroccan men came to the Netherlands as labour migrants in the 1960s and early 1970s. Turkish and Moroccan women moved to the Netherlands in the 1970s and 1980s as a result of family reunification or family formation. The Moluccans, soldiers in the former Dutch colonial army and their families, were “demobilised” to the Netherlands in 1951 after decolonisation of Indonesia (a former Dutch colony) and temporary housed in Moluccan “camps” due to shortage of housing and the expectation that their stay would be temporarily.

**Inclusion criteria**
Elderly meeting the following inclusion criteria are eligible to participate:

- Aged 55 years and over
- Living independently (alone or with others)
- Born in Turkey, Morocco, Moluccan Islands or descendant of Moluccan immigrants born in the Netherlands and lived in one of the Moluccan “camps”

**Exclusion criteria**
Elderly using care for severe psychiatric disorders are excluded from the study.

**Control group**
In order to assess the effectiveness of the intervention, the effects of introduction of the CHW will be compared with a group where the CHW is not introduced. No CHWs involvement is provided to the controls. The control group consists of a matched group comparable in size and composition. All controls live outside the three (semi) urban residential areas in the Netherlands that take part in the intervention. We use data from the ongoing SYMBOL study (Systematic Memory testing Beholding Other Languages) in the Netherlands to collect data on Turkish and Moroccan controls. Recruitment of Moluccan controls will be completed through bilingual interviewers in collaboration with a local social welfare organisation that serves Moluccan elderly.

**Recruitment of intervention participants**
Intervention participants are identified, recruited, and selected by CHWs representing the elderly immigrant population. All CHWs have strong ties to and rootedness within the local migrant community. All elderly reached by the CHW will be screened on the in- and exclusion criteria. Eligible elderly receive study information and an informed consent form in the preferred language for participation. If literacy makes reading impossible, the information will be read by the CHW. If the participant is not willing and/or not able to sign the written informed consent, the CHW holds the option of offering the potential participant the possibility for oral consent. After permission, the CHW makes an appointment for the baseline interview. In case of an informal caregiver, the care giver is also invited by the CHW to participate to measure care giver burden.

The CHWs do not conduct the interviews to avoid bias in the data collection. The interviews will be conducted by bilingual interviewers who are not involved in intervention activities. To ensure the examination of the intervention under real world circumstances no (financial) incentives will be offered for study participation.

**Intervention programme**
The intervention consists of four steps:

1. In the first step, the CHW conducts home visits to the elderly to examine health problems, barriers to health care and social welfare services, and needs for adequate care. During the home visits, the CHW registers the outcomes. The CHW provides information on health and social welfare and refers to health and social welfare services if desirable. In addition to the home visits, information meetings are set up by the CHW in collaboration with local migrant organisations.

2. In the second step, the CHW identifies commonly shared problems based on the home visits and organises problem-focussed working groups of eight to twelve elderly persons (elderly who experience one of these problems), their family members/ informal care givers, and local providers of health care and social welfare facilities.
In the third step, the CHW co-operates with the elderly and providers of health care and social welfare services in finding solutions and in creating and conducting improvement programmes. These consist of concrete initiatives necessary for providing care and social welfare services that meet the health and social welfare needs of the elderly involved.

In the fourth step, these new initiatives will be implemented by the local providers of health care and social welfare facilities in their existing health care and welfare services in collaboration with the elderly. The CHW monitors the process of implementation of the improvements programmes in the community.

Besides, the CHW serves as participant in the research process by approaching participants for interviews.

Selection of CHWs
The CHW will be paid as a part-time worker who is connected to, but not a staff member of one of the local social welfare organisations involved to keep their independent role as intermediary.

A local programme coordinator will preselect community members who have the qualities and skills required to become a CHW:
- Empathetic attitude towards elderly
- Understanding of elderly’s needs and socio-cultural norms
- Known within the community as a trusted and respected community member
- Ability to communicate with representatives of the elderly involved and providers of health care and social welfare services
- Ability to provide community outreach through offering information meetings on health care and social welfare services
- Providing advice and referring elderly in need to health care and social welfare services
- Knowledge of local health care and social welfare facilities
- Knowledge of the Dutch care and social welfare system

Training and supervision of CHWs
The CHW will be trained and prepared for his/her roles and tasks. Trainers with extensive experience in training CHWs collaborate with the research group in developing and carrying out the training. The training consists of two, six-hour sessions. During the sessions, the trainers explain and discuss the intervention programme. The sessions have an interactive character and contain exercises to practice necessary skills and a role play with an actor. Furthermore, the research team will discuss the research process and the collaboration between the CHWs and the research team.

During the intervention programme, ongoing supervision will be delivered by the local programme coordinator acting as a mentor and supervisor. In addition, the CHWs participate on a regular basis in intervention sessions by the trainers involved in the training sessions to address difficulties and to further develop skills. The research team can be contacted for advice in case of questions and/or difficulties in the research activities.

Assessments
Data are collected at two points in time. A baseline assessment within two weeks after the home visit by the CHW (T0) and a follow-up assessment 18 months after the baseline assessment (T1). The assessments are structured face-to-face interviews in the preferred language of the respondent performed by trained bilingual interviewers. To ensure the compatibility of interviews across the different interviewers and to minimise the variation in results, the interviewer will use standardised, translated versions of the questionnaire instead of translating the questionnaire during the interview. The interviewers have a Turkish, Moroccan or Moluccan background.

All interviewers will receive a training that consists of three hours. During this training, the content of the study and the collaboration between the interviewers and the research team will be explained and discussed. An instruction on the translated questionnaires will be given. The training is interactive and contains a role play to address possible difficulties. All interviewers will further receive interview guidelines and a definition list of medical terms used in the questionnaire. During the period of data collection, the research team can be contacted for advice in case of questions and/or difficulties.

To ensure the quality of the collected data the research team monitors the questionnaires on completeness and occurrence of impossible answers.

Outcomes
The primary outcome measure is the use of health care and social welfare facilities, which will be assessed by self-reported care consumption.

The secondary outcome measures are perceived quality of life and functional impairments in daily functioning. Perceived quality of life will be measured by using the validated Short Form-12 (SF-12) and the EQ-5D+C. Functional impairments will be measured by using the Katz-15 frequently used to assess functional status of elderly and valid to assess functional ability of Turkish, Moroccan, and native Dutch elderly.
Moderating variables
Several possible moderators of care consumption, quality of life, and functional impairments will be explored:

1. Multimorbidity will be assessed by self-reported illnesses and conditions.
2. Anxiety and depressive disorders will be screened by the Kessler Psychological Distress Scale (K10) 24, a reliable and valid measure for screening anxiety and depression among Turkish, Moroccan, and native Dutch subjects 25.
3. Loneliness will be assessed by using the Jong Gierveld loneliness scale 26-28, a sufficiently reliable instrument for measuring loneliness among elderly 28 and used in studies among older people in the Netherlands 29.
4. Acculturation will be measured by using the adapted Psychological Acculturation Scale (PAS) 30, an internal consist and reliable measure suitable for use among Moroccan adults 31. The PAS is originally designed by Tropp et al. 31 and used among Anglo Americans and Latino/Hispanic Americans.
5. Feelings of loss as part of acculturation will be measured by the subscale "loss" from the Lowlands Acculturation Scale (LAS) 32, a valid measure used among Turkish and Moroccan immigrants, and other immigrant populations in the Netherlands 32-36.
6. Dutch language proficiency will be assessed by self-reported difficulty in speaking Dutch.

Additional data collection
Socio-demographic factors such as age, sex, marital status, ethnicity, migration background, living situation, religiosity, and educational level will be obtained at baseline.

Translation of instruments
The interviewers will use translated versions of the instruments for the Turkish, Moroccan-Arabic, Berber or Malay speaking respondents. Several translated instruments used in previous studies will be used:

- Turkish version of the K10 used in a study by Fassaert 37
- Turkish, Moroccan-Arabic, and Berber version of the Jong Gierveld loneliness scale used in a study by Uysal-Bozkir et al. 38
- Turkish and Moroccan-Arabic version of the SF-12 used in a study by Denktaş 9
- Moroccan-Arabic version of the adapted PAS used in a study by Stevens 39

For the other instruments complete translated versions are accomplished using a forward-backward procedure 40. Two forward translators, both native speakers, translated the measures from the Dutch version into the target language (Turkish, Berber, Moroccan-Arabic, and Malay) and were translated back into Dutch by a backward translator, a native speaker of Dutch and fluent in the target language. Differences from the Dutch version were discussed with the translators and resolved.

Sample size calculation
No comparable interventions studies are available to determine the sample size. Therefore, we conducted a power analysis to determine the number of elderly based on a theoretical effect size assessed effect size. Based on research literature an effect size of 0.50 is estimated to provide a minimal clinically important difference 41. We chose a moderate theoretical effect size of 0.40 to ensure that potential relevant findings are included. Power analysis showed that 97 elderly in each group should be included (an effect size of 0.40, an alpha of 0.05 and a beta of 0.20). Thus, we need a total of 194 elderly.

Process evaluation
Each part of the intervention delivered by the CHWs will be monitored and registered. This qualitative data will be gathered from registrations forms. In the end, focus groups will be carried out with the elderly and their informal caregivers, the CHWs, and the stakeholders in the (semi) urban residential areas.

Data analysis
The data will be analysed using SPSS version 20. We compare the use of health care and social welfare facilities, quality of life, and functional impairments between the intervention group and the control group. To correct for the clustering of participants within wards and for baseline characteristics, multilevel analysis will be used to evaluate differences in outcome between the two groups regarding baseline and follow up measurements. Estimates will be performed with 95% confidence intervals. An intention to treat analysis (ITT) will be conducted consisting of data from all subjects including those lost to follow up. Audio recordings of the focus groups will be transcribed verbatim and analysed thematically using NVivo version 9.

ETHICAL PRINCIPLES
Participants are informed that participation is voluntary and anonymity is guaranteed. Besides, participants are informed that their participation could be finished during the study without giving a reason and without negative consequences. Participants sign an informed consent form. Those who are not willing and/or not able to sign the written informed consent form give oral consent.

We submitted our study protocol to the Medical Ethics Committee of the University Medical Center Utrecht (UMCU) if this study falls under the Medical Research Involving Human Subjects Act (Wet medisch wetenschappelijk onderzoek met mensen (WMO) in Dutch). The committee judged that our study does not meet the WMO criteria and therefore is not subject to the WMO.
DISCUSSION

In the development of this study we made a number of choices that need to be addressed. We chose a quasi experiment, because a randomised controlled trial (RCT) is less suitable for community-based intervention research using CHWs. A RCT whereby the CHWs randomise participants to specific conditions is difficult to translate into practice, because this may conflict with their role as a community health advocate due to the assignment to control conditions with no direct benefit to the community members they serve.

For the generalisability of our findings, we chose for diversity in immigrant populations (migrant background) and sites (semi large urban residential areas) and we recruited several CHWs on each site to deliver the intervention.

To ensure a representative reflection of elderly immigrants in the Netherlands, the three immigrant populations in this study were chosen, because these together represent the majority of the elderly immigrant population in the Netherlands. The three (semi) urban residential areas in the Netherlands were selected, because of the concentration of the immigrant populations involved in this study. The diversity in immigrant populations and the enrolment of multiple CHWs provide the opportunity to compare the results between three different locations with each a specific concentration of immigrants and to examine if and under which conditions the CHW has impact on the outcome measures.

The outcomes measures in this study were chosen to ensure that the effectiveness of the intervention is assessed on outcomes that are directly relevant for elderly immigrants. The health problems among elderly immigrants often lead to long-lasting functional limitations and need for health care. Functional limitations and perceived health may have impact on their daily functioning and quality of life.

Strengths

A positive aspect of the present study is that the recruitment of the participants is conducted by CHWs who are trusted and respected members of the communities and ethnically matched with the elderly immigrants involved. Regarding to other studies, this is mentioned as a successful strategy for recruitment in ethnically diverse populations.

Additional, the interviews are conducted by well-trained bilingual interviewers of the same ethnicity. In combination with translated measures in the native language of the elderly involved we expect that this will result in the participation of elderly who are mostly excluded from research due to language barriers, illiteracy, and distrust of research.

The design of a multi-site, quasi-experimental design enables us to examine the effectiveness of the intervention among elderly from different immigrant groups compared to elderly with a similar ethnic background in a middle and large urban setting. Moreover, the study population will be recruited from different (semi) urban residential areas and varied immigrant populations and the intervention involves multiple CHWs in the delivery. These enhance the external validity of the intervention and make our findings generalisable to immigrant populations that represent a large proportion of the elderly immigrant population in the Netherlands.

Data for this study will be collected using mixed methods including quantitative data and qualitative data. This enables us to examine the effectiveness of the intervention with standardised instruments and to conduct a process evaluation on the delivery of the intervention programme with focus groups and analysing data registration forms. Moreover, this triangulation enhances the reliability of our results.

Limitations

Besides the strengths, there are some limitations to this study. Health and health care use will be measured by self-report. Although, self-reported measures may influence the estimate of care utilisation, self-reporting is considered a reasonably valid estimation of ethnic differences in use of health care. At the same time, however, not all measures in this study have been cross-culturally validated yet.

Challenges

First of all, it is important that the immigrant elderly reached by the CHWs also include the more difficult-to-reach frail elderly. Therefore, only CHWs with deep roots and strong ties within the local immigrant community will be selected.

The intervention fidelity is of crucial importance too. To avoid variation in the intervention delivery, each CHW will be trained in all of the components of the intervention programme and receive ongoing supervision during the intervention delivery. Besides, documentation from the CHWs regarding their intervention activities will be reviewed. Ongoing feedback to CHWs regarding the intervention delivery further enhances the intervention fidelity.

Additional, proper identification and recruitment of the CHWs are crucial for a successful implementation of the intervention in this study. Therefore, the CHWs will be identified and recruited by using a profile consisting of necessary qualities and skills.

Finally, commitment of local community-based health care or social welfare organisations is needed to start up culturally sensitive care and to integrate this care into their existing services. The required commitment will be obtained by actively involving these organisations in the preparation of the study and formally establish the corporation by means of a corporation agreement.
Chapter 4

REFERENCES


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CHAPTER 5

Ethnicity does not account for differences in the health-related quality of life of Turkish, Moroccan, and Moluccan elderly in the Netherlands

Verhagen I
Ros WJG
Steunenberg B
De Wit NJ.

Health and Quality of Life Outcomes 2014;12:138
ABSTRACT

Background
Data on how different groups of elderly immigrants perceive health-related quality of life (HRQOL) is scarce and research on the influence of ethnicity on HRQOL across ethnic groups is missing. Measuring HRQOL may help to detect cross-cultural differences and to decide whether ethnic-specific health and prevention programmes are required to improve HRQOL. We investigated differences in HRQOL among three elderly immigrant populations with a special focus on the contribution of ethnicity, in addition to other well-known determinants, to HRQOL.

Methods
Data were collected between October 2011 and July 2012 as part of the project entitled “Stem van de oudere migrant”, a quasi-experimental study in the Netherlands focussing on health of immigrant elderly. A survey was conducted among 201 elderly (aged 55 years and older) Moroccans (98), Turks (69), and Moluccans (34). HRQOL was assessed using the SF-12, measuring physical and mental health composite scores (PCS resp. MCS). Chi-square tests and ANOVAs were performed for group comparison. Hierarchical multiple linear regressions were conducted to examine whether ethnicity uniquely contributed to the observed variance in HRQOL when multimorbidity, loneliness, socio-demographics, and acculturation were taken into account.

Results
Moroccans had the lowest scores on PCS (34.3 ± 31.4) and MCS (42.1 ± 27.0), followed by Turks (45.7 ± 27.0 for PCS and 54.7 ± 22.2 for MCS), and Moluccans (71.7 ± 21.2 for PCS and 74.4 ± 22.1 for MCS). Ethnicity was not independently associated with PCS and MCS scores, in contrast to loneliness (PCS β = -0.461, p < 0.001 and MCS β = -0.435, p < 0.001) and multimorbidity (PCS β = -0.380, p < 0.001 and MCS β = -0.398, p < 0.001). Gender was independently associated with PCS (β = 0.148, p = 0.026) and attachment to Dutch culture with MCS (β = 0.144, p = 0.029).

Conclusions
The lower level of HRQOL reported by elderly immigrant populations was affected by multimorbidity and loneliness but not ethnicity. Similar to native elders, interventions aiming at improving HRQOL for immigrant elderly should focus on loneliness and (mental and physical) disease. Finally, health literacy deserves attention to maintain health.

Trial registration
ISRCTN89447795.

INTRODUCTION

The population in Western countries is ageing and becoming more ethnically diverse. The health status and health-related quality of life (HRQOL) of immigrant elderly is often less favourable compared to native elderly. So far, data on how different groups of elderly immigrants perceive HRQOL are scarce, and research on the influence of ethnicity on HRQOL across ethnic groups is lacking. Measuring HRQOL may help to detect cross-cultural differences and to determine the necessity for ethnicity-specific health and prevention programmes to improve HRQOL.

Optimal health for the elderly is not a goal, as such, but it enables this population to maintain their independence, mobility and participation in life activities, as well as to respond to the challenges of old age. The consequences of impaired health, rather than the absence of disease, mainly determine the quality of life for the elderly. Therefore, HRQOL is the most adequate parameter of well-being in older populations.

The health status and health-related quality of life of immigrant elderly is often less favourable compared to native elderly. So far, data on how different groups of immigrant elderly perceive HRQOL are scarce, and research on the influence of ethnicity on HRQOL across ethnic groups is lacking. Measuring HRQOL may help to detect cross-cultural differences and to determine the necessity for ethnicity-specific health and prevention programmes to improve HRQOL.

Ethnicity does not account for differences in health-related quality of life

Methods

Study population
The study population consisted of a sample of elderly Moroccans, Turks, and Moluccans who participated in the project entitled “Stem van de oudere migrant”. This quasi-experimental study aimed to assess the effect of contact with community health workers (CHWs) in improving access to health care facilities. The design and aims of that study are described elsewhere.

Turks and Moroccans immigrated to the Netherlands in the 1960s and early 1970s in pursuit of work and, later on, for family reunification or family formation. Moluccans, former soldiers in the Dutch colonial army, and their families were transferred to the Netherlands in 1951 after the decolonisation of Indonesia and were housed in resettlement camps in remote areas. Also included in the study were descendants of Moluccan immigrants who...
were born between 1951 and 1957 and raised in the Netherlands in the relatively isolated camps where the living situation, language and customs resembled those of the country of origin. Eligible participants were aged 55 years or older, living independently and currently not being treated for severe psychiatric disorders. Participants were recruited through CHWs. Details of the recruitment procedures have been described elsewhere.

Data collection
Data were collected between October 2011 and July 2012 by means of a structured personal interview conducted at home or at another location chosen by the participant. Trained interviewers from similar ethnic backgrounds verbally administered all questionnaire items by reading aloud the questions and the response options in the language of the participant. Standardised, translated versions of the questionnaire were used to minimise the variation in results and ensure the compatibility of interviews across all interviewers.

Ethical principles
All the participants provided oral or written informed consent. The Medical Ethics Committee of the University Medical Center Utrecht (UMCU) did not consider the study to be subject to the Medical Research Involving Human Subjects Act (WMO in Dutch); therefore, full ethical assessment was not required. The study is registered with the ISRCTN register: ISRCTN89447795.

Outcome, determinants, and measurements
The primary outcome was self-reported HRQOL, measured with the Short Form-12 (SF-12). The SF-12 is a widely used instrument to measure physical and mental aspects of HRQOL. The SF-12 is comprised of 12 items and yields 8 domain scores Physical Functioning; Role Physical, Bodily Pain, General Health, Vitality, Social Functioning, Role Emotional, and Mental Health that can be condensed into physical and mental health summary scores respectively the Physical Component Summary (PCS) and the Mental Component Summary (MCS).

We assessed the following determinants:

Ethnicity was determined by self-reported country of birth or birth in one of the Moluccan resettlement camps.

Regarding socio-demographic variables, socio-economic status (SES) was determined using the Netherlands Institute for Social Research (SCP) status scores that are based upon the social status of a particular postcode area. The number of years of education was measured by the sum of years of education in the country of origin and in the Netherlands. Age, gender, and marital status were self-reported. The number of years of residence in the Netherlands was determined from the year of immigration to the Netherlands. Language proficiency was measured by self-reported difficulty in speaking Dutch. Acculturation was measured using the adapted Psychological Acculturation Scale (PAS), originally developed by Tropp et al. The PAS consists of two scales evaluating emotional attachment to Dutch culture (D-PAS) and culture of origin (in this study defined as C-PAS). Multimorbidity was defined as the presence of two or more chronic conditions from a selection of 17 self-reported chronic conditions. Loneliness was measured by the De Jong Gierveld loneliness scale.

Data analysis
We compared the three ethnic groups with respect to socio-demographic information, health characteristics, and HRQOL. Chi square tests were performed to evaluate differences in nominal and ordinal variables. Analysis of variance (ANOVA) was used for continuous variables with the Welch modification when the assumption of homogeneity of variance was not met. A significant ANOVA was followed by post hoc multiple comparison testing using Bonferroni’s test. The Games-Howell test was used when the assumption of homogeneity of variance was violated.

Psychometric properties of the translated instruments were absent for the immigrant groups in our study. We therefore assessed Cronbach’s alpha in the total population and for the three immigrant groups separately.

Hierarchical multiple regressions were executed for PCS and MCS to examine whether ethnicity contributed uniquely to the variance in HRQOL when multimorbidity, loneliness, socio-demographics, and acculturation were taken into account. Correlations lower than 0.80, suggesting that multicollinearity was at an acceptable level, permitted the entry of the variables. Independent variables were entered into five blocks in the hierarchical multiple regression. In the first block, PCS was regressed on ethnicity only. In the second block, PCS was regressed on multimorbidity, in addition to ethnicity. In third block, loneliness was added. In the fourth block, acculturation, years of residence in the Netherlands, and language proficiency were entered. In the final block, age, gender, SES, years of education, and marital status were added. An identical regression analysis was performed with MCS as the dependent variable.

Statistical significance level was set at 0.05. All analyses were performed in SPSS 20.0 for Windows.

RESULTS
Sample. A total of 478 elderly immigrants were approached for participation in the study, and 201 completed the questionnaire. The overall response rate was 42.1% (38.1% among Moroccans, 79.3% among Turks, and 25.4% among Moluccans).
As shown in Table 1, the mean (±SD) age of the Turks was 63.3 ± 5.0; of the Moroccans was 67.1 ± 7.3; and of the Moluccans was 69.7 ± 8.6. The average number of years of residence in the Netherlands was 59.4 ± 4.8 for the Moluccans, 34.7 ± 10.6 for the Moroccans, and 34.2 ± 8.1 for the Turks. A high proportion of Moroccans (100%) and Turks (89.9%) showed an SES below the Dutch average. Additionally, 76.8% of the Turks, 57.1% of the Moroccans, and 44.1% of the Moluccans reported multimorbidity. Moroccans scored highest on loneliness (7.3 ± 4.2), followed by Turks (5.4 ± 3.8), and Moluccans (1.6 ± 2.0).

**Psychometric properties.** The overall Cronbach’s alpha \( \alpha \) was 0.89 for PCS (0.80 for Moroccans, 0.82 for Turks, and 0.75 for Moluccans) and 0.82 for MCS (0.90 for Moroccans, 0.88 for Turks, and 0.77 for Moluccans). Overall Cronbach’s alpha \( \alpha \) was 0.79 for the D-PAS (0.86 for Moroccans, 0.75 for Turks, and 0.85 for Moluccans) and 0.85 for the C-PAS (0.91 for Moroccans, 0.70 for Turks, and 0.70 for Moluccans). Cronbach’s alpha \( \alpha \) was 0.92 for the loneliness scale (0.93 for Moroccans, 0.91 for Turks, and 0.69 for Moluccans).

**Sample characteristics.** Table 1 shows that differences among the ethnic groups were found in the categories of years of education \((p < 0.05)\), language proficiency \((p < 0.05)\), loneliness \((p < 0.05)\), and HRQOL \((p < 0.05)\). Regarding HRQOL, Moroccans had the lowest scores on PCS (34.3 ± 31.4) and MCS (42.1 ± 27.0), followed by Turks (45.7 ± 27.0 for PCS and 54.7 ± 22.2 for MCS), and Moluccans (71.7 ± 21.2 for PCS and 74.4 ± 22.1 for MCS).

**Determinants of HRQOL.** Multiple regression analysis (Table 2, Model 5) showed that ethnicity was not independently associated with PCS and MCS, in contrast to loneliness \((PCS: \beta = -0.461, p < 0.001\) and MCS: \(\beta = -0.435, p < 0.001\)) and multimorbidity \((PCS: \beta = -0.380, p < 0.001\) and MCS: \(\beta = -0.398, p < 0.001\)). Gender was independently associated with PCS (\(\beta = 0.148, p = 0.026\)) and attachment to Dutch culture with MCS (\(\beta = 0.144, p = 0.029\)).

### Table 1 | Socio-demographic and health characteristics of the study sample

<table>
<thead>
<tr>
<th></th>
<th>Moroccan</th>
<th>Turkish</th>
<th>Moluccan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean, SD)</td>
<td>67.1 (7.3) (^1)</td>
<td>63.3 (5.0) (^1)</td>
<td>69.7 (8.6) (^1)</td>
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<tr>
<td>Gender (%)</td>
<td></td>
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<tr>
<td>Female (%)</td>
<td>60.9</td>
<td>41.8</td>
<td>37.6</td>
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<tr>
<td>Male (%)</td>
<td>39.1</td>
<td>58.2</td>
<td>62.4</td>
</tr>
<tr>
<td>Years of residence in the Netherlands (mean, SD)</td>
<td>34.7 (10.6) (^1)</td>
<td>34.2 (8.1) (^1)</td>
<td>59.4 (4.8) (^1)</td>
</tr>
<tr>
<td>Years of education (mean, SD)</td>
<td>1.1 (3.0) (^2)</td>
<td>3.7 (3.2) (^2)</td>
<td>10.4 (4.3) (^2)</td>
</tr>
<tr>
<td>SES below Dutch average (%)</td>
<td>100</td>
<td>89.9</td>
<td>55.9</td>
</tr>
<tr>
<td>Marital status (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>82.3</td>
<td>88.4</td>
<td>82.4</td>
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<td>Divorced/widowed</td>
<td>17.7</td>
<td>11.6</td>
<td>17.6</td>
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<td>Acculturation (PAS)</td>
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<tr>
<td>D-PAS (mean, SD)</td>
<td>19.3 (4.6) (^3)</td>
<td>18.8 (5.4) (^3)</td>
<td>21.9 (6.2) (^3)</td>
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<tr>
<td>C-PAS (mean, SD)</td>
<td>23.1 (5.1) (^3)</td>
<td>26.9 (3.9) (^3)</td>
<td>26.2 (3.9) (^3)</td>
</tr>
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<td>Language proficiency (mean, SD)</td>
<td>2.7 (0.5) (^4)</td>
<td>2.3 (0.5) (^4)</td>
<td>3.6 (0.5) (^4)</td>
</tr>
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<td>Multimorbidity (%)</td>
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<td></td>
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<td>0 chronic conditions</td>
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<td>10.1</td>
<td>38.2</td>
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<td>1 chronic condition</td>
<td>22.4</td>
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<td>17.6</td>
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<td>≥ 2 chronic conditions</td>
<td>57.1</td>
<td>76.6</td>
<td>44.1</td>
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<tr>
<td>Loneliness (De Jong Gierveld loneliness scale) (mean, SD)</td>
<td>7.3 (4.2) (^5)</td>
<td>5.4 (3.8) (^5)</td>
<td>1.6 (2.0) (^5)</td>
</tr>
</tbody>
</table>

- \(^1\) Moluccans born in the Netherlands were not asked.
- \(^2\) Status scores were classified into SES above the Dutch average and below the Dutch average. The average status score in the Netherlands was used as cut-off point.
- \(^3\) Ranged from 0 to 11. A higher score indicates a greater experience of feelings of loneliness.
- \(^4\) Ranged from 6 to 30. A higher score means a better command of the Dutch language.
- \(^5\) Ranged from 0 to 11. A higher score indicates a greater experience of emotional attachment and belonging within the Dutch culture.
Table 2  PCS and MCS assessed by linear regression analysis (β’s)

<table>
<thead>
<tr>
<th>Physical Component Summary (PCS)</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R² adj. 0.114</td>
<td>R² adj. 0.335</td>
<td>R² adj. 0.506</td>
<td>R² adj. 0.516</td>
<td>R² adj. 0.538</td>
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<td></td>
<td>F 11.624 (p &lt; 0.001)</td>
<td>F 28.711 (p &lt; 0.001)</td>
<td>F 43.286 (p &lt; 0.001)</td>
<td>F 23.027 (p &lt; 0.001)</td>
<td>F 15.775 (p &lt; 0.001)</td>
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<td>Ethnic group (vs. Moluccans)</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Turkish</td>
<td>-0.396</td>
<td>0.001</td>
<td>-0.321</td>
<td>0.001</td>
<td>-0.140</td>
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<td>Moroccan</td>
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<td>&lt;0.001</td>
<td>-0.564</td>
<td>&lt;0.001</td>
<td>-0.251</td>
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<td>Multimorbidity (vs. no multimorbidity)</td>
<td>-0.480</td>
<td>&lt;0.001</td>
<td>-0.395</td>
<td>&lt;0.001</td>
<td>-0.395</td>
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<td>Loneliness</td>
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<td>-0.454</td>
<td>&lt;0.001</td>
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<td>0.088</td>
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<td>0.291</td>
<td>0.005</td>
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<td>0.047</td>
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<td>Language proficiency</td>
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</tr>
<tr>
<td>Age</td>
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<tr>
<td>SES below Dutch average (vs. above Dutch average)</td>
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<tr>
<td>Education years</td>
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<td>Married (vs. divorced/widowed)</td>
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<table>
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<th>Mental Component Summary (MCS)</th>
<th>Model 1</th>
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<th>Model 4</th>
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<tr>
<td></td>
<td>R² adj. 0.117</td>
<td>R² adj. 0.319</td>
<td>R² adj. 0.480</td>
<td>R² adj. 0.527</td>
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<td>F 11.891 (p &lt; 0.001)</td>
<td>F 26.767 (p &lt; 0.001)</td>
<td>F 39.085 (p &lt; 0.001)</td>
<td>F 23.955 (p &lt; 0.001)</td>
<td>F 15.233 (p &lt; 0.001)</td>
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<td>&lt;0.001</td>
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<td>0.009</td>
<td>0.881</td>
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<td>Education years</td>
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</table>

Table 2  Continued
DISCUSSION

The present study revealed that elderly immigrant populations in the Netherlands experience different levels of HRQOL, but these differences are not related to ethnic background. Multimorbidity and loneliness counted for most of the differences in HRQOL. In addition, gender and attachment to Dutch culture moderately contributed to the variance in HRQOL. These outcomes suggest that elderly from different ethnic backgrounds have a more or less comparable level of HRQOL as long as their health status, social resources, and level of acculturation are comparable.

Within the different ethnic groups, Moluccans had, by far, the best HRQOL, whereas Moroccans had the poorest. The Turks scored in between these two groups. This trend was evident in both the physical and mental aspects of quality of life. In addition to our findings that multimorbidity and loneliness are important predictive factors, we performed additional analyses for the mean scores of HRQOL adjusted for these two factors. After adjustment, average physical and mental quality of life improved slightly for Moroccans and Turks, but not for Moluccans (adjusted mean PCS scores: Moroccans 38.8, Turks 47.7, Moluccans 53.0; adjusted mean MCS scores: Moroccans 45.7, Turks 55.2, Moluccans 59.5). The Moroccans, in contrast to the Turks, even after adjustment still showed significantly worse HRQOL than the Moluccans.

Our results raise the question: Does the mean score of older immigrants differ from that of the native Dutch elderly population? Comparison with available data on the average PCS and MCS scores for elderly from the native Dutch population in 2012 showed that Moroccans and to a lesser extent Turks had a worse score on PCS than the Dutch (55-65 years 48.6; 65-75 years 47.4; ≥ 75 years 42.4). The Moluccans had a better physical and mental quality of life. Moroccans had a worse score on MCS than the Dutch (55-65 years 53.5; 65-75 years 55.0; ≥ 75 years 54.0), Turks had a quite comparable score, and Moluccans had a better one. In general, with the exception of the Moluccans, we can conclude that HRQOL, particularly physical quality of health was poorer than the native Dutch elderly population.

Our results did not completely resemble earlier research. In line with Schellingerhout, Moluccans reported the best mental quality of life. Schellingerhout and Denkta found no differences between Turks and Moroccans. However, in our study, Turks and Moroccans experienced different levels of HRQOL with Moroccans being the most disadvantaged. Differences in area of residence could explain discrepancies in HRQOL. The Turks in our study lived in a semi-urban setting. However, the Moroccans in our study and the Moroccans and Turks in the studies by Schellingerhout and Denkta lived in deprived neighbourhoods in a large city. The literature suggests that poorer health status and harmful health behaviour occur more often in deprived neighbourhoods.

That multimorbidity as an important predictive factor for low HRQOL is consistent with research showing that chronic conditions and multiple morbidities are associated to poorer HRQOL. Our study confirms this for elderly immigrants. Our results also confirm that loneliness is highly associated with low HRQOL in the elderly, but the causal relation can be interpreted in two different ways. On the one hand, a low HRQOL may lead to loss of social interactions and, ultimately, to feelings of loneliness. On the other hand, loneliness may lead to experiencing poor HRQOL.

We found gender to be associated with physical quality of life, which is consistent with previous studies showing a better HRQOL for men, regardless of whether they were natives or immigrants. As we corrected for age and multimorbidity these factors are not a plausible explanation. The association is more likely to be explained by the fact that women have a more acute perception of their health problems and consequently they are more likely to report them.

Our finding that attachment to Dutch culture is associated with a higher mental quality of life is in contrast to earlier research. Schellingerhout found no influence of acculturation. This discrepancy might be due to differences in the acculturation measures used in the different studies. Schellingerhout used variables such as Dutch language use, informal contacts with native Dutch, and attitudes on care and family values as indicators of acculturation, whereas we focussed on individuals’ psychological identification with Dutch culture and the subjects’ cultures of origin. Nevertheless, it is quite understandable that elderly who are more emotionally attached to and integrated with Dutch people and culture perceive a better quality of life.

There are some limitations to our study that need to be considered when interpreting our results. First, although the SF-36, the parent questionnaire for the SF-12, and the SF-12 itself are widely used valid instruments that have been previously used to measure HRQOL including immigrants, measurement bias might have been occurred by the blending of health and physical and mental function concepts in the SF-36. As our study focussed on the physical and mental health summary scores, it could still be possible that ethnicity affected HRQOL independently of physical and mental functioning. To exclude this possibility, additional analyses were performed on the SF-12 general health rating item (“In general how would you rate your health?”), which is in contrary to the other SF-12 items not specifically related to physical and mental function. It is one of the most frequently asked questions to assess health status. In line with our findings on the PCS and MCS, ethnicity was not associated with this single SF-12 item. This suggests that even independently of physical and mental functioning, ethnicity seems not to affect HRQOL.
A second limitation was the non-random sampling of the study participants. Given the often poor response in migrant groups and the risk that the role of CHWs in recruiting participants in a strictly randomised design conflicts with their role as community health advocates, we believed that random sampling was not appropriate for our study. This has most likely not biased the selection of the study population because approximately half of the total number of elderly from each ethnicity, approximately 42.9% Turks, 46.6% Moroccans, and 67.3% Moluccans, were approached and participated in the study.

A third limitation was the unbalanced response rate. The overall response rate of 42.1% was acceptable and comparable with previous research among elderly immigrants (48%)\(^1\). However, as in the study by Schellingerhout (65.3% Moroccans, 43.6% Turks, Moluccans not reported)\(^1\), the response rate in our study varied strongly across the three ethnic groups (38.1% Moroccans, 79.3% Turks, and 25.4% Moluccans). A non-response analysis showed no selection according to age and gender for Moroccans and Turks. Selection for Moluccans was found regarding age (a lower average age among non-participants: 63.8 versus 69.7) but not gender. Because our findings are consistent with previous research\(^1\), this, as well as the small number of Moluccans, has not likely influenced the results for Moluccan participants. Another possible risk for bias was that we, due to the limited number of first generation Moluccan immigrants, also included descendants of Moluccan immigrants born and raised in resettlement camps in the Netherlands. We compared Moluccan immigrants with descendants born in the resettlement camps and found that no differences between the two groups, except of course for age, existed in socio-demographic features, health characteristics and HRQOL.

Fourth, not all measuring instruments were available in the appropriate language for the immigrant groups studied, and they were therefore translated. We presented Cronbach’s alpha in the total population and for the three immigrant groups separately for PCS, MCS, D-PAS, C-PAS, and the De Jong Gierveld loneliness scale. These scales showed a good to acceptable reliability in all three groups, with alphas varying from 0.69 to 0.93. We can conclude that these instruments are appropriate for the immigrant groups.

Finally, the self-reported data may have resulted in either report or recall bias. Previous research on HRQOL\(^6\) determined that cross-cultural differences in health perceptions might influence self-reported HRQOL. One might hypothesise that the conceptualisation of health and quality of life depends on cross-cultural differences. Because we found that the PCS and MCS were highly reliable (0.75-0.90), we conclude that the underlying structure of the concept of quality of life is the same for all three immigrant groups.

**CONCLUSION**

Multimorbidity and loneliness, rather than ethnicity, determine the level of HRQOL reported by elderly immigrant populations. Our results suggest that health and prevention programmes meant to improve HRQOL within the ethnic groups do not need to be specific for a particular elderly immigrant population but, rather, should address loneliness and multimorbidity. A potential successful approach to improve HRQOL for both immigrant and native elderly, could be to screen for developing loneliness and multimorbidity. This could be particularly supportive for Moroccan and Turkish elderly who are most at risk. In addition, interventions addressing loneliness and chronic diseases should be provided as a regular part of usual care. But additional interventions when meant to remove HRQOL differences between the ethnic groups are needed in case of Moroccan and Moluccan elderly. Finally, health literacy deserves attention as immigrants often lack the requisite health literacy skills to maintain health\(^27\). Therefore culturally sensitive communication programmes are needed for providing immigrant elderly with the health information they need to accessing and making sense of relevant health information.
REFERENCES


CHAPTER 6

Effectiveness of a community health worker intervention programme for older immigrants: Results from a quasi-experimental study in the Netherlands

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ABSTRACT

Background
Non-Western older immigrants experience poorer health outcomes than their Western counterparts, potentially due to limited access to health care services. We aimed to assess the effect of a community health worker (CHW) intervention on the use of health services, loneliness, health-related quality of life (HRQOL), and functional limitations among Moroccan and Turkish elderly immigrants.

Methods
In a quasi-experimental study, we evaluated the effectiveness of a CHW intervention programme among elderly individuals born in Morocco and Turkey by comparison with a control group. In this programme, the CHWs were specifically trained to involve the target group in identifying problems and framing solutions at the community level and to initiate locally feasible solutions in close collaboration with the local providers of health care and social welfare services.

Results
241 elderly immigrants participated, and 147 (61.0%) completed all the measurements. After the intervention, the use of curative health services did not increase in the intervention group compared with the control group (between-group mean difference: -0.86, 95% CI: -1.12 to -0.60). Loneliness was reduced in the intervention group (-0.71, 95% CI: -1.43 to 0.00). After adjusting for baseline differences, loneliness improved in the active group compared with the inactive group ($p=0.016$). We did not identify any changes in the use of care health services, HRQOL, or functional limitations.

Conclusion
CHWs may be supportive in improving health perceptions, reducing loneliness, and promoting the effective use of health care facilities among older immigrants. However, active participation, partnership with key cultural stakeholders, and commitment of the community are critical factors for successful CHW deployment.

INTRODUCTION

The population in Western countries is ageing, and the elderly population is becoming more ethnically diverse. In the Netherlands, Moroccans (39,442) and Turks (41,328) are two main groups of non-Western immigrants, comprising 33.9% of the non-Western elderly population.

Older immigrants have poorer health statuses compared with native Dutch older adults, but they also face personal (e.g., language problems and limited knowledge about the health care system) and institutional barriers (e.g., poor understanding of their needs and culturally inappropriate services) in their access to health care facilities.

An effective way to improve ethnic minorities’ access to and navigation through the health and social welfare system is the deployment of ethnic community health workers (CHWs). CHWs act as intermediaries between community members and providers of health care and welfare services. They share the same ethnic background and speak the same language as the target population, they have awareness of that population’s health beliefs, and they understand the barriers that immigrant and minority adults encounter. Although the effectiveness of CHWs in implementing health programmes has been demonstrated for various immigrant populations, it has not yet been well established for elderly immigrants.

Therefore, the aim of our study was to assess the effect of a CHW intervention within a group of elderly immigrants. We hypothesised that deploying CHWs from the immigrant community and engaging them in cultural brokering could improve the access of elderly immigrants to health services, improve their HRQOL, and could help reduce their functional limitations and loneliness.

METHODS

Design
This study was a quasi-experimental study with a pre-post design and a control group comparison. The design and methodology of the study are described in detail elsewhere.
Effectiveness of a community health worker intervention programme

Chapter 6

Setting
The intervention occurred in two (semi) urban residential areas in the central part of the Netherlands: Utrecht (Moroccan elderly) and Harderwijk (Turkish elderly). Originally, we planned to conduct the intervention at a third site (Tiel, using elderly immigrants of Moluccan origin), but that implementation was terminated at an early stage because the Moluccan elderly did not report problems in access to health services and did not consider improvement programmes necessary. The control group consisted of elderly Moroccans and Turks from an urban residential area in the Amsterdam region.

Recruitment of participants
The participating elderly were identified and recruited by the CHWs. The eligible older adults received study information and an informed consent form in their native language. After each participant provided consent, the CHWs made an appointment for the baseline interview. Bilingual research assistants who were not involved in the intervention programme conducted the interviews. In addition, they recruited elderly adults without the interference of the CHWs.

The control group of immigrant elderly adults was recruited from the SYMBOL study of the Academic Medical Center (AMC) in Amsterdam, the Netherlands, which was conducted in the urban area of Amsterdam. The SYMBOL project studied the development of new neuropsychological dementia screening test for older immigrants in the Netherlands and did not involve CHWs.

Intervention programme
The CHW intervention programme was based on the practice of multicultural health brokering in Edmonton, Canada. The core of the intervention programme was the deployment of CHWs in the community to bridge the gap between service providers and older immigrants. Seven CHWs were recruited and trained (two males and two females with a Moroccan ethnic background and two males and one female with a Turkish ethnic background).

The profiles of the CHWs were based on the literature and on input from the Dutch Network of Organisations of Older Migrants (NOOM). The main skills required were being known within the community as a trusted and respected community member and being competent in providing advice and referring the subjects to health care and social welfare services.

The intervention programme consisted of four steps. In the first step, which primarily took place through home visits, the CHWs identified individual problems with respect to health, well-being, housing, financial conditions, and access to health and welfare services during a one-to-one conversation with the elderly. Those in need of treatments and/or care were referred and -if necessary- accompanied to health and welfare services by the CHWs. In the second step, CHWs organised group meetings with the elderly, their family members/informal care givers, and local providers of curative and care health services to inform and educate them about the identified problems and discuss possible solutions. In the third step, in collaboration with the target group and local health professionals, the CHWs developed and initiated interventions with activities for improvement. In the fourth step, after the completion of the interventions, these improvements were embedded within the community.

Training of the CHWs
To maximise the quality of the intervention programme, the CHWs received manuals and completed two six-hour training sessions. During the intervention, continuous supervision was delivered by the local project coordinator at each site. In addition, the CHWs participated on a regular basis (at least once a month) in intervention sessions moderated by the local project coordinator to address difficulties and to further develop skills.

Ethical principles
All the participants provided oral or written informed consent. The Medical Ethics Committee of the University Medical Center Utrecht did not consider the intervention to be subject to the Medical Research Involving Human Subjects Act (WMO in Dutch); therefore, full ethical assessment was not required. The study is registered with the ISRCTN register: ISRCTN89447795.

Data collection
The baseline measurements (October 2011-July 2012) were conducted before the intervention, and the follow-up measurements were conducted after the intervention (October 2013-February 2014). The data were collected by means of a structured personal interview. Trained interviewers from similar ethnic backgrounds verbally administered all questionnaire items by reading aloud the questions and the response options in the language of the participant (Turkish, Berber or Moroccan-Arabic).

Outcomes and measurements
The primary outcome was the self-reported use of curative health services and care health services during the one-year follow-up. The secondary outcomes included self-reported HRQOL, functional limitations, and loneliness.

The use of curative health services was operationalised as the use of out-of-hours general practitioner consultations, day treatments at the hospital, and hospital admissions. The use of care health services was measured as home care assistance, nursing home admission (temporary), care home admission (temporary), and the use of day care facilities.

HRQOL was measured using the EuroQol Five Dimensional Scale (EQ-5D). Functional limitations were assessed with the Katz-15, a modified version of the Katz Index of Independence Basic Activities of Daily Living (ADL), the Instrumental Activities of Daily
Living (ADL), and an additional indicator of mobility. Loneliness was measured by the De Jong Gierveld loneliness scale, which proved to be valid for Turks and Moroccans. Multimorbidity was defined as the presence of two or more chronic conditions from a selection of a widely used list of 17 self-reported chronic conditions.

Age, gender, living arrangement, marital status, and ethnicity were self-reported. Socio-economic status (SES) was determined using the Netherlands Institute for Social Research (SCP) status scores that are based on the social status of postcode areas.

We used translated versions of all the instruments, which proved to be reliable within these immigrant groups (data upon request).

Data analysis
The analyses were performed according to the intention to treat (ITT) principle. State of the art multiple imputation was used to impute outcomes for those subjects who were lost to follow-up (39.0%). Additionally, a full case analysis was conducted with those participants who completed the pre- and post-intervention measurements.

First, descriptive statistics were calculated for the baseline characteristics. Independent t tests, Pearson’s Chi-Square tests, and Fisher’s exact tests were used for comparing the intervention and control groups and for the analysis of drop-out and adherence.

Second, we performed paired t tests within the intervention and control groups to assess changes in the mean scores between the pre- and post-intervention measurements and independent t tests for differences in changes between the intervention and control groups. Additionally, we used analysis of covariance (ANCOVA) procedures to control for variables in which differences existed between the two groups at baseline and for the outcome value at baseline.

Finally, we evaluated the actual participation and adherence of the participants to the intervention activities using the same statistical procedures. To control for adherence, we divided the intervention group into inactive participants (those who did not participate in the improvement activities initiated by the CHWs) and active participants (those who did participate in at least one activity).

The statistical significance level was set at 0.05. All analyses were performed in SPSS 20.0 for Windows.

RESULTS
Participants
The intervention group consisted of 167 elderly adults, and the control group consisted of 74 elderly adults. In the intervention group, 95 participants (56.9%) completed both measurements, against 52 (70.3%) in the control group. The reasons for the loss to follow-up are shown in Figure 1. There were no differences in the socio-demographic and health characteristics between those lost to follow-up (n= 94) and those who completed both measurements (n= 147), except for ethnic background. The participants who were lost to follow-up were more frequently Moroccan than Turkish (p < 0.001) (data not shown).

Participation in the intervention
The CHWs conducted group sessions with participating elderly and one-to-one conversations with 72/167 participants to identify health and social problems. The key problems faced by older immigrants were related to five issues: a high prevalence of chronic conditions; limited social networks; poor or inappropriate housing; poverty; and financial difficulties. The problems in accessing health services were related to insufficient knowledge of the Dutch health care system (particularly general practitioner services) and language barriers.

The community improvement activities initiated by the CHWs were diverse: (1) health education sessions on diabetes, psychological problems (depression), psychosomatic complaints, and healthy nutrition; (2) a housing programme (the CHWs renovated gardens in collaboration with volunteers, a local housing corporation, and the local government district); (3) excursions to care service providers (e.g., a culturally appropriate retirement home); (4) informational meetings (professionals provided information on available services and explained the Dutch health care system); (5) individual consultations (the CHWs helped with issues regarding contact with service providers); and (6) feedback meetings between the target group and general practitioners (GPs) in accessing GP services.

Baseline characteristics
The elderly in the intervention and control groups differed significantly in terms of age, ethnic background, and loneliness at baseline (Table 1).

The active participants were significantly younger, more frequently Turkish, less lonely, and less functionally limited compared with the inactive participants at baseline (Table 2).

Outcomes
Changes in the intervention and control groups
In the intervention group, there were no significant differences in the mean scores at baseline and after the intervention for the use of curative health services and care health services, for HRQOL and for functional limitations (Table 3). The mean score for loneliness at baseline was 6.49; and 5.78 after the intervention (mean difference of -0.71, 95% CI: -1.43 to 0.00).
### Table 1 | Socio-demographic and health characteristics of the participants at baseline

<table>
<thead>
<tr>
<th></th>
<th>Intervention N= 167</th>
<th>Control N= 74</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (mean, SD)</strong></td>
<td>65.5 (6.7)</td>
<td>62.6 (5.6)</td>
<td>0.001</td>
</tr>
<tr>
<td>55–64 years</td>
<td>47.9</td>
<td>68.9</td>
<td>0.003</td>
</tr>
<tr>
<td>≥ 65 years</td>
<td>52.1</td>
<td>31.1</td>
<td></td>
</tr>
<tr>
<td><strong>Gender (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>53.9</td>
<td>47.3</td>
<td></td>
</tr>
<tr>
<td><strong>Ethnicity (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moroccan</td>
<td>58.7</td>
<td>31.1</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Turkish</td>
<td>41.3</td>
<td>68.9</td>
<td></td>
</tr>
<tr>
<td><strong>Marital status (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>84.8</td>
<td>85.1</td>
<td>0.954</td>
</tr>
<tr>
<td>Divorced/widowed/single</td>
<td>15.2</td>
<td>14.9</td>
<td></td>
</tr>
<tr>
<td><strong>Living arrangement (%)</strong></td>
<td></td>
<td></td>
<td>0.658</td>
</tr>
<tr>
<td>Independently, with others (partner, children)</td>
<td>88.6</td>
<td>90.5</td>
<td></td>
</tr>
<tr>
<td>Independently, alone</td>
<td>11.4</td>
<td>9.5</td>
<td></td>
</tr>
<tr>
<td><strong>SES below Dutch average (%)</strong></td>
<td>95.8</td>
<td>95.9</td>
<td>1.000</td>
</tr>
<tr>
<td><strong>Multimorbidity (%)</strong></td>
<td></td>
<td></td>
<td>0.489</td>
</tr>
<tr>
<td>≥ 2 chronic conditions</td>
<td>65.3</td>
<td>60.6</td>
<td></td>
</tr>
</tbody>
</table>
| Loneliness (mean, SD)
  Possible range: 0-11. A higher score indicates greater feelings of loneliness. | 6.5 (4.1) | 4.5 (3.7) | < 0.001 |
| HRQOL (mean, SD)
  Possible range: -0.33-1.00. A higher score indicates a better perceived HRQOL. | 0.54 (0.36) | 0.60 (0.34) | 0.258 |
| Functional limitations (mean, SD)
  Possible range: 0-15. A higher score indicates worse functional status. | 2.5 (3.3) | 2.3 (3.8) | 0.735 |

1 The status scores were classified into SES above the Dutch average and below the Dutch average. The average status score in the Netherlands was used as the cut-off point.

2 Possible range: -0.33-1.00. A higher score indicates a better perceived HRQOL.

3 Possible range: 0-15. A higher score indicates worse functional status.

In the control group, the mean score for the use of curative health services was 0.49 at baseline; and 1.32 after the intervention (mean difference of 0.83, 95% CI: 0.44 to 1.23). There were no differences in the mean scores before and after the intervention for use of care health services, loneliness, HRQOL, and functional limitations.

**Effects of the intervention programme**

The change in the use of curative health services during the intervention period differed significantly between the intervention and control groups (-0.86, 95% CI: -1.12 to -0.60) (Table 3). No differences were found between the two groups for the other outcome variables. Adjusting for the baseline differences did not change the results for any of the outcome measures.
Compliance with the intervention
Of the 95 elderly immigrants who completed both measurements in the intervention group, 49 (51.6%) were active participants. The mean score for the use of curative health services in the active group at baseline was 1.27 (Table 4), and after the intervention, the mean score in the active group was 1.00 (mean difference of -0.27, 95% CI: -0.52 to -0.02). For loneliness, the mean score at baseline was 5.21, and after the intervention, the mean score was 3.77 (mean difference of -1.44, 95% CI: -2.61 to -0.28). For the other outcomes, no significant changes were found.

Table 2 | Socio-demographic and health characteristics by subgroup at baseline

<table>
<thead>
<tr>
<th></th>
<th>Total intervention group</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inactive participants N= 112a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Active participants N= 55b</td>
<td></td>
</tr>
<tr>
<td>Age (mean, SD)</td>
<td>66.4 (7.1)</td>
<td>63.6 (5.5)</td>
</tr>
<tr>
<td>Age (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55–64 years</td>
<td>43.8</td>
<td>56.4</td>
</tr>
<tr>
<td>≥ 65 years</td>
<td>56.3</td>
<td>43.6</td>
</tr>
<tr>
<td>Gender (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>49.1</td>
<td>63.6</td>
</tr>
<tr>
<td>Ethnicity (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moroccan</td>
<td>75.9</td>
<td>23.6</td>
</tr>
<tr>
<td>Turkish</td>
<td>24.1</td>
<td>76.4</td>
</tr>
<tr>
<td>Marital status (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>83.6</td>
<td>87.3</td>
</tr>
<tr>
<td>Divorced/widowed</td>
<td>16.4</td>
<td>12.7</td>
</tr>
<tr>
<td>Living arrangement (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independently, others</td>
<td>88.4</td>
<td>89.1</td>
</tr>
<tr>
<td>(partner, children)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independently, alone</td>
<td>11.6</td>
<td>10.9</td>
</tr>
<tr>
<td>SES below Dutch average1 (%)</td>
<td>94.6</td>
<td>94.5</td>
</tr>
<tr>
<td>Multimorbidity (%)</td>
<td>0.156</td>
<td></td>
</tr>
<tr>
<td>≥ 2 chronic conditions</td>
<td>61.6</td>
<td>72.7</td>
</tr>
<tr>
<td>Loneliness (mean, SD)2</td>
<td>7.1 (4.1)</td>
<td>5.2 (2.9)</td>
</tr>
<tr>
<td>HRQOL (mean, SD)3</td>
<td>0.54 (0.38)</td>
<td>0.55 (0.39)</td>
</tr>
<tr>
<td>Functional limitations (mean, SD)4</td>
<td>2.9 (3.5)</td>
<td>1.6 (2.7)</td>
</tr>
</tbody>
</table>

|                       | Control N= 74                  |         |
|                        | Before | After | Change (95% CI) | Intervention N= 95 | Control N= 52 | Difference (95% CI) | Intervention N= 167 | Control N= 74 | Difference (95% CI) |
| Health services (mean) | 1.02   | 0.99  | -0.03 (-0.48 to 0.42) | 0.49 | 1.32 | 0.83 (0.44 to 1.23) | -0.86 (-1.12 to -0.60) | -1.15 (-1.42 to -0.87) |         |
| Care health services (mean) | 0.10 | 0.41  | 0.31 (-0.10 to 0.71) | 0.15 | 0.33 | 0.18 (-0.23 to 0.59) | 0.00 (-0.16 to 0.16) | 0.00 (-0.16 to 0.16) |         |
| Loneliness (mean) | 6.48   | 5.18  | 1.30 (-0.26 to 0.64) | 6.43 | 4.43 | 1.99 (-0.24 to 3.11) | 1.18 (-0.98 to 3.33) | 2.36 (-1.11 to 6.77) |         |
| HRQOL (mean) | 0.34   | 0.47  | 0.13 (-0.23 to 0.49) | 0.33 | 0.33 | 0.00 (-0.15 to 0.15) | 0.00 (-0.15 to 0.15) | 0.00 (-0.15 to 0.15) |         |
| Functional limitations (mean) | 2.64 | 3.03  | 0.39 (0.24 to 0.53) | 2.23 | 2.37 | 0.14 (-0.26 to 0.54) | 0.36 (-0.33 to 1.03) | 0.36 (-0.33 to 1.03) |         |

1 All cases in the intervention group who did not actively participate in the improvement activities, including those lost to follow-up.
2 All cases in the intervention group who actively participated in the improvement activities, including those lost to follow-up.
3 All participants in the intervention group who completed both pre- and post-intervention measurements. We only present the unadjusted mean scores with their p-values because the adjustment with ANCOVA did not change the results for any outcome.
4 Possible range: 0-11. A higher score indicates greater feelings of loneliness.
5 Possible range: -0.33-1.00. A higher score indicates a better perceived HRQOL.
6 Possible range: 0-15. A higher score indicates worse functional status.
Table 4 | Differences in outcomes regarding health care use, loneliness, HRQOL, and functional limitations by subgroup (intensity of participation)*

<table>
<thead>
<tr>
<th>Active participants N= 55</th>
<th>Inactive participants N= 112</th>
<th>Difference in change between groups</th>
<th>Moderate-high participation N= 49; low participation N= 46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before</td>
<td>After</td>
<td>Change (95% CI)</td>
<td>Before</td>
</tr>
<tr>
<td>Cured health services (mean)</td>
<td>1.27</td>
<td>1.00</td>
<td>-0.27 (-0.52 to -0.02)</td>
</tr>
<tr>
<td>Care health services (mean)</td>
<td>0.03</td>
<td>0.12</td>
<td>0.09 (-0.09 to 0.26)</td>
</tr>
<tr>
<td>Loneliness (mean)</td>
<td>5.21</td>
<td>3.77</td>
<td>-1.44 (-2.61 to -0.28)</td>
</tr>
<tr>
<td>HRQOL (mean)</td>
<td>0.54</td>
<td>0.56</td>
<td>0.02 (0.11 to 0.13)</td>
</tr>
<tr>
<td>Functional limitations (mean)</td>
<td>1.69</td>
<td>1.74</td>
<td>0.05 (-0.82 to 0.92)</td>
</tr>
</tbody>
</table>

* We only present the unadjusted mean scores with their p-values because the adjustment with ANCOVA did not change the results for any outcome, except for loneliness (not shown in table).
* All cases in the intervention group who actively participated in the improvement activities, including those lost to follow-up.
* All cases in the intervention group who did not actively participate in the improvement activities, including those lost to follow-up.
* All participants in the intervention group who actively participated in the improvement activities, limited to those who completed both pre- and post-intervention measurements.
* All participants in the intervention group who did not actively participate in the improvement activities, limited to those who completed both pre- and post-intervention measurements.

A possible range: 1-3. Services consist of hospital admissions, out-of-hours general practitioner (GP) services, and day treatments at the hospital.

Possible range: 1-4. Services consist of home care, nursing home admission (temporary), care home admission (temporary), and day care.

Possible range: 0-11. A higher score indicates greater feelings of loneliness.

Possible range: -0.33-1.00. A higher score indicates a better perceived HRQOL.

Possible range: 0-15. A higher score indicates worse functional status.
No effect was found on functional limitations. Our study demonstrates that independent functioning remained stable. This result may be explained by several factors. First, independence in daily activities was already fairly high at baseline, which left little room for improvement. Second, the intervention programme initiated by the CHW did not focus on improving functional status.

Our results must be viewed with respect to the complexity of the intervention and the social reality of the environment in which it was implemented. We encountered a range of problems in contacting respondents that were not unique to our study but rather reflect persistent challenges in studies within (these) ethnic minority populations. These contact problems were related to mistrust and disappointment with governmental institutions, negative experiences with previous projects, drop out due to extended stay in the country of origin, and a lack of familiarity with research. In particular, the Moroccan elderly and family members often considered the study to be irrelevant. A lack of commitment from key cultural organisations, such as the local mosque, was another issue within the group of Moroccan elderly immigrants. Extra effort by the CHWs and an intense commitment by local stakeholders are required to overcome these challenges.

Limitations

Some limitations of this study need to be considered. The first limitation is the study design. Although a randomised controlled trial is the most valid design for evaluating health care interventions, we believe that randomisation was not appropriate for our study. In a strictly randomised design, CHWs cannot implement their role for the whole population, which may place compliance at an even greater risk. A second limitation was the high number of dropouts (39%), which was largely explained by the high number of Moroccan elderly who could not be reached for the post-intervention interview despite repeated attempts. To minimise any potential bias introduced by this loss of follow-up, we used an ITT approach. This approach most likely did not bias our results because the ITT and full case analyses showed comparable results (data available upon request). A third limitation was the unbalanced participation rate in the improvement activities, which varied strongly across the two ethnic groups (17.1% of the Moroccans vs. 77.8% of the Turks). As a consequence, the effects were most likely dominated by the elderly of Turkish origin. Supporting evidence is therefore needed from new studies among Moroccan subjects.

CONCLUSIONS

CHWs may be supportive in improving health perceptions, reducing loneliness, and promoting effective use of health care facilities among older immigrants. However, active participation, partnership with key cultural stakeholders, and community commitment are critical factors in the successful implementation of CHW programmes.

REFERENCES


CHAPTER 7

Successes and challenges of a community health worker intervention programme for older immigrants: Lessons from a Dutch programme

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ABSTRACT

We developed a community health worker (CHW) intervention programme for elderly from three different immigrant groups (Moroccan, Turkish, Moluccan elderly) in the Netherlands. Specifically trained CHWs identified health and social problems, framed solutions at the community level, and connected elderly to local health and welfare services. To explore the challenges associated with conducting a CHW intervention and the key factors for successful CHW function, two focus group sessions were held with the CHWs. In addition to the key qualifications for the successful functioning of CHWs, our study adds that it is necessary to consider the practical benefit that can be offered to the target group at an early stage of the intervention programme and to ensure that this offer can be quickly realised. Good insight into the composition of the target group is another important key factor. It is important to know whether the target group consists of a diversity of subgroups, forms a cohesive community (for example, around a certain church or mosque), and which languages are spoken. In the selection of the CHWs, one should ensure that the CHWs match the different subgroups within the community. Potential partnership and collaboration with institutions that are relevant to (elderly) immigrants is of importance when choosing a location for CHW implementation.

INTRODUCTION

Community health workers (CHWs) can help to improve immigrants’ access to and navigation of the health and social welfare system. CHWs act as intermediaries between community members and providers of services. Important determinants of CHWs’ success are that the workers share the immigrants’ ethnic background, speak the same language, are aware of the health beliefs, and understand the barriers to health care that immigrants experience. Until now, most CHW programmes in Western countries aimed to assist adult immigrants but did not include elderly immigrants. CHW programmes are likely to be effective in improving the health care access, health behaviour, and, to a lesser extent, health outcomes of older immigrants. However, thus far, there is little evidence for the effectiveness of such programmes within this group.

We developed a CHW intervention programme based on the practice of multicultural health brokering in Edmonton, Canada. In this project, called Voice of Elderly Immigrants (STEM), the CHWs were specifically trained to involve the target group in identifying problems and framing solutions at the community level and to initiate locally feasible solutions in close collaboration with the local providers of health care and social welfare services. The effectiveness of the STEM intervention programme was evaluated in a quasi-experimental study that demonstrated that CHWs may be supportive in improving health perceptions, reducing loneliness, and promoting the effective use of health care facilities among older immigrants.

To explore the challenges that are associated with a CHW programme and the key factors that lead to successful CHW deployment, we conducted a qualitative study using focus groups of CHWs. The CHWs in the STEM project assisted three different groups of older immigrants (Moroccan, Turkish, and Moluccan elderly), enabling us to identify critical success and failure factors of CHW implementation in different contexts.

METHODS

Design
A qualitative study with focus groups consisting of CHWs who were involved in the STEM intervention study.

The STEM project organisation
At the beginning of the project, a project organisation was set up with the involvement of relevant stakeholders such as the municipality, providers of care, cure and housing, and institutions relevant to (elderly) immigrants (migrant organisations, church, mosque). A project coordinator was employed at each location to coordinate and support the CHWs and to organise contacts with the local stakeholders. The local project coordinator also organised local intervention meetings with the CHWs.
The STEM intervention programme and the role of the CHW
The intervention programme consisted of four steps. In the first step, which primarily took place through home visits, the CHWs identified individual problems with respect to health, well-being, housing, financial conditions, and access to health and welfare services during a one-to-one conversation with the elderly. Those in need of treatments and/or care were referred and -if necessary- accompanied to health and welfare services by the CHWs. In the second step, CHWs organised group meetings with the elderly, their family members/informal care givers, and local providers of curative and care health services to inform and educate them about the identified problems and discuss possible solutions. In the third step, in collaboration with the target group and local health professionals, the CHWs developed and initiated interventions with activities for improvement. In the fourth step, after the completion of the interventions, these improvements were embedded within the community.

Ten CHWs were recruited and trained (two male and two female CHWs of Moroccan ethnic background, two male and one female CHW of Turkish ethnic background, and two female and one male CHW of Moluccan ethnic background).

The required skills of the CHWs were based on the literature and input from the Dutch Network of Organisations of Older Migrants (NOOM), as follows:

- Being familiar with the community and regarded as a trusted and respected community member
- Understanding of the elderly’s needs and social-cultural background
- Having an empathetic attitude towards the elderly
- Being competent in providing health advice, in referring elderly who are in need to health care and social welfare services
- Being competent in performing community outreach through offering information meetings on health care and social welfare
- Being competent in communicating with representatives of the elderly involved and providers of health care and social welfare services
- Being competent in communicating with the elderly in their native languages
- Having adequate knowledge of the Dutch health care and social welfare system and the local facilities

Study sample for the qualitative study
Two focus group sessions were held with the CHWs who were involved in the STEM project. The first focus group took place at the midpoint of the project, following the completion of the first step of contacting the target group and identifying key health and welfare problems. The second focus group took place at the end of the project, after the improvement activities were implemented.

All 10 CHWs who were involved in the intervention programme were approached for the first focus group session. Six agreed to participate, four of Moroccan ethnic background, one of Turkish ethnic background, and one of Moluccan ethnic background. For the second focus group, five agreed to participate (four of Moroccan ethnic background and one of Turkish ethnic background). The Moluccan CHWs did not participate in the second focus group, as the CHW intervention programme for the Moluccan elderly was terminated after the phase of problem identification, as the Moluccan elderly reported few problems with respect to health, well-being, housing, financial conditions, and access. We observed insufficient support for improvement activities (the next phase) among the Moluccan elderly, primarily because they did not recognise themselves in the aims of the project.

Process and data collection
The focus groups were conducted with a primary (WR) and a secondary (IV) moderator. The latter also took notes and supervised the audio recording of the session. At first, the topics that the CHWs introduced were discussed. After exhaustion of these topics, the moderators introduced additional predefined topics.

The first focus group aimed to elicit the successes and challenges of reaching the target group, the home visits, and the training and intervision provided to the CHWs. The second focus group focussed on emerging success and failure factors in initiating improvement activities, the sustainability of the intervention activities, and the support provided to the CHWs.

Each focus group session lasted 2.5 hours, was recorded with the participants’ consent, and was transcribed verbatim. Personal identifiers were removed to guarantee the anonymity of the participants.

Data analysis
The qualitative analysis was performed using NVivo 10.0 for Windows.

The analysis started with the open coding of the transcripts to explore meaningful issues that were discussed. Next, axial coding was conducted; the concepts that were considered relevant were further analysed and described. Finally, selective coding was performed with a focus on the relationships between the important concepts and developed the main themes.
RESULTS

After the review and coding of the transcripts, five main themes related to the successes and challenges of implementing the intervention were identified, as follows: (1) CHW competencies, (2) coordination and support, (3) community characteristics, (4) negative project experiences in the past, (5) possibility to support individual needs and questions, and (6) need for short-term benefits. Quotes are included to illustrate the main themes.

1. CHW competencies

As mentioned in the CHW function profile that was previously developed for this STEM project\(^8\), language and communication skills appeared to be important for the successful functioning of the CHW.

Language skills

Special attention needs to be paid to the CHWs’ language skills that stood in the way of reaching the target group. In some migrant communities, multiple languages are commonly spoken. This became clear within the Moroccan community, where the language proficiency of the male CHWs did not completely correspond with the different Moroccan languages of the target group.

“If you are competent in both Berber and Arabic you can reach more people [target group] than if you only speak Arabic. The fact is that most older people only speak Berber in our community.” (CHW, Moroccan community).

Communication skills

In addition to the necessary language skills, being culturally aware of how to communicate with immigrant elderly was essential for the work of CHWs. The CHW should, therefore, be skilled in cultural awareness, cultural knowledge and cultural skills and the ability to apply it in practice. It is important to provide the target group with transparent information about the role and possible benefits of the CHW and downscale the group’s high expectations to realistic proportions. This became clear within the Turkish and Moroccan communities, where the CHWs had to address resistance as a result of negative experiences and disappointment with previous projects.

“There was also a project carried out in Harderwijk in 2003 with a lack of tangible benefits for the target group. They are still disappointed because of this. I explained to them [target group]: I cannot promise that this time participation will provide something tangible to you, but if you want your needs to be met, make sure you let your voice be heard.” (CHW, Turkish community).

2. Coordination and support

Local project coordinator

The local project coordinator at each site was an important factor in coordinating the CHWs, providing them with the required support, and organising contacts with professionals and stakeholders.

“We received much support from our project coordinator. She was supportive in the issues we faced. In the early stage of the project, she facilitated by contacting professionals for the information meetings.” (CHW, Moroccan community).

Special attention needs to be paid to an ethnically matched team. This became clear within the Moroccan community. The project coordinator in Utrecht had extensive experience with migrants and was respected within the community but was not a member of the Moroccan community.

“If our project coordinator would have been an insider, a well-respected community member with Moroccan ethnic background e.g., connected to the mosque or to one of the well-respected community-based organisations, we could have reached twice as many people as we did.” (CHW, Moroccan community).

Intervision

The CHWs were trained for their roles. The training consisted of two six-hour sessions and had an interactive character. To ensure that each CHW had the same level of skills at the start the intervention programme, the training consisted of the following two parts: (1) theoretical instruction on the content and the logistics of the study and (2) training of communication skills with role plays with an actor\(^8\). Most CHWs considered the second part unnecessary because they thought that they already had these skills.

Continuous support during the intervention is important. The CHWs participated in intervision sessions that were moderated by the local project coordinator to address difficulties and to further develop skills on a regular basis (at least once a month). The CHWs experienced the intervision sessions as supportive in reducing problems with the conduct of the study and working on solutions.

3. Community characteristics

Because the intervention programme was implemented in three different communities, it became clear that two local context-related factors were of importance for the implementation of the programme, as follows: (1) group diversity and cohesion, (2) commitment of key stakeholders from the community.
Group diversity and cohesion and local context
The CHWs were deployed at three locations within their local context. The Kanaleneiland location in the urban area of Utrecht has a large number of health and welfare institutions. The Moroccan elderly population in this location is large (552 individuals aged ≥ 55 years), lacks cohesion, and consists of a diversity of subgroups. The elderly population is not homogeneous; rather, it is divided in terms of language (Moroccan-Arabic, Berber with both several dialects), religious orientation, and region of origin. Each deployed CHW was familiar with one subgroup only. Therefore, the CHWs’ own subgroup could be reached easily, but the CHWs’ unfamiliarity with other subgroups made it difficult to access them.

By contrast, the other two elderly populations (Turks and Moluccans) have strong cohesion. The Turkish elderly population (203 individuals aged ≥ 55 years) is small, originated from the same region in Turkey, and is strongly connected to the local mosque. The small Moluccan elderly population (160 individuals aged ≥ 55 years) shares a history of living in resettlement camps in remote areas in the Netherlands after the decolonisation of Indonesia in 1951, is largely housed in the Moluccan neighbourhood, and shares the same religious (Christian) background and church. The CHWs who were deployed in the Turkish and Moluccan communities were familiar with the entire target group. This made it much easier to access the target group.

“The community in Harderwijk is small and the group cohesion is strong. So, we know them [target group] very well. This really helped us to reach them.” (CHW, Turkish community).

Commitment from key cultural stakeholders
Commitment from the local mosque was lacking within the Moroccan community, despite the efforts of the CHWs and the local project coordinator to involve this important institution. The CHWs within the Moroccan and Turkish communities mentioned that partnership with key cultural stakeholders and the commitment of the mosque were critical to facilitating the participation of the target group.

“With the commitment of a well-respected person from the mosque, like within the Turkish community, or a Moroccan person from a well-respected community-based organisation, it would have been less challenging to reach them [target group].” (CHW, Moroccan community).

This situation is in contrast to that found in the Turkish community. The mosque in Harderwijk played an important role in facilitating participation.

“Indeed, we had the benefit that X [CHW] is the chairman of the mosque. This helped us to reach them [target group].” (CHW, Turkish community).

The CHWs mentioned that partnership with and the commitment of community-based organisations was also critical to initiating the improvement activities within the community.

4. Negative project experiences in the past
At the start of the project, the CHWs within the Moroccan and Turkish communities were confronted with distrust. This was due to the populations’ negative experiences with previous projects (not learning the results and not having benefits from participating) that were carried out within their community and disappointment with governmental institutions. Suspicion about what would be done with the collected data from the home visits and lack of trust in community improvements were the trust issues that most CHWs faced in contacting the target group. Later in the intervention, during the improvement activities, the CHWs experienced success in overcoming mistrust and resistance because the target group began to see tangible results from the project.

“At the start of the project, it was hard to convince them [target group] that the project was really going to do something beneficial to the community. And so there was much distrust and resistance until we actually started doing things.” (CHW, Moroccan community).

5. Possibility to support individual needs and questions
The CHWs had the expectation that they could provide immediate help for the problems of the elderly. The first step of the intervention programme was, however, primarily designed to contact the target group and identify the key problems with respect to health and welfare at the community level rather than to solve individual problems. Therefore, most CHWs were confronted with the constraints of the intervention programme that hindered direct intervention in the case of problems. The CHWs discussed that they felt a sense of personal responsibility to help the target group (and often went beyond their role in an attempt to help the target group and to overcome difficulties in reaching the target group).

“I am aware that I am not in the position to give care as a CHW. This is also discussed during our training. However, if I am asked for help with ‘urgent matters’ (e.g., help with making appointments, completing forms), I cannot turn a blind eye to their situation, especially when we expect people to participate in the study.” (CHW, Moroccan community).

6. Need for short-term benefits
One of the most frequently expressed challenges was the inability to demonstrate the immediate benefits of participation to the older migrants. Because enrolment in the improvement activities later in the intervention programme was a key incentive that the CHWs could offer, most CHWs felt ineffective when confronted with the expectations of the target group.
“At the start, there was much resistance to participation because they [target group] expected immediate solutions for all of the problems they faced which we could not offer.” (CHW, Moroccan community).

Due to the lack of benefits of participation in previous projects that were carried out in Utrecht and Harderwijk, the CHWs within the Moroccan community found it hard to convey the message that participation would provide the target group with tangible benefits.

DISCUSSION

Our study adds further insight into the prerequisites of the successful implementation of CHWs. The most important conclusion for future CHW interventions for elderly immigrants is that it is necessary to offer a perspective of short-term tangible benefits to the target group starting at an early stage of the intervention programme. Many elderly immigrants have negative experiences with previous projects. As known from previous community-based studies, high-risk target groups are often approached for participation in community projects, but they rarely experience tangible benefits and are typically not adequately informed about the results. Such research does not sustain groups’ willingness to participate and leads to mistrust and resistance. The CHWs in the STEM project had to invest substantial energy into overcoming this disappointment and mistrust. To stimulate elderly immigrants’ participation, simple short-term benefits, such as health information and assistance with completing administrative forms, should be offered.

Second, our study underlines that good insight into the local community is essential. Cultural diversity in a community should be acknowledged. A CHW may be a trusted and respected supporter of one subgroup but not a different subgroup. In the recruitment of the CHWs, one should match the CHWs with the different subgroups within the community. A thorough analysis of the local situation is needed. In a homogeneous community with social cohesion, the CHW can operate more easily.

Third, partnership and collaboration with stakeholders and institutions that are relevant for elderly immigrants (such as migrant organisations, church, mosque) are essential for a successful rollout of the intervention activities. This collaboration should be established locally before the CHW implementation.

Finally, our study underlines the importance of optimal facilitation of the CHW. CHWs should be competent in all of the different languages spoken by the target group. An important addition to the CHW function profile that was previously developed for the STEM project is that the CHWs with a Moroccan ethnic background should be trilingual (Dutch, Berber, and Moroccan-Arabic). Ongoing intervision for the CHWs is necessary to optimise the performance of the CHW team. The local project coordinator is not only an important sparring partner for the CHWs in the case of barriers but also organises contacts with professionals and stakeholders.

Limitations

Not all CHWs who were involved were able to participate in the two focus group meetings. Nevertheless, we do not have indications that we would have heard other perspectives if all CHWs had participated. Our conversations with the CHWs during the intervision meetings and our meetings with the local project coordinators and local stakeholders did not raise additional factors. No focus groups were held with the elderly or the local stakeholders involved in this project as initially planned. We did not expect to gain new information beyond that obtained from the questionnaires that the elderly completed and our meetings with the local stakeholders.

CONCLUSIONS

We conclude that when setting up a CHW programme in elderly migrant communities, it is important to offer immediate practical benefits to the target group at an early stage of the CHW programme, thus ensuring optimal participation of the target group. At the start of the programme, a thorough analysis of the local situation is required to assess cultural diversity and social cohesion and to identify essential partners in the local community. In addition to the qualifications that are considered to be essential for successful functioning, the profile of the CHWs should adequately match the different subgroups within the community.
REFERENCES


The aim of this thesis was to assess the effectiveness of the implementation of community health workers (CHWs) to improve access to health and welfare services of elderly immigrants. Therefore, we developed a CHW intervention programme that was implemented at three different locations, each with a specific population of immigrants: Moroccan elderly (Utrecht); Turkish elderly (Harderwijk); and Moluccan elderly (Tiel). The key element of the programme was the introduction of CHWs, who acted as intermediaries between elderly immigrants and providers of health and social welfare services. The CHWs were trained to identify health and social problems (phase one) and to frame feasible solutions in close collaboration with providers of health care and welfare services (phase two).

Currently, most CHW interventions in Western countries are aimed at adult immigrants and do not focus on older age groups (Chapter 3). This thesis adds to the evidence for the effectiveness of implementing CHWs amongst the subgroup of older immigrants. This aim is greatly important given their increasing number, their unfavourable health status, and the barriers they face in accessing health care services (Chapter 1). We hypothesised that deploying CHWs from the immigrant community and engaging them in cultural brokering could improve access to health services and health-related quality of life (HRQOL) and could help reduce functional limitations and loneliness. We have added loneliness as an extra outcome measure. In the first phase of the study, the CHWs identified loneliness as an important issue amongst the elderly.

In this chapter, we discuss the main findings, reflect on the results and the methodological choices we made and discuss the implications for future practice.

MAIN FINDINGS

Use of health care services

Our study showed that the health disadvantage previously observed within most ethnic minority elderly populations does not result in overall more frequent use of health care services (Chapter 2).

- The use of primary health care services (general practitioner services and medication prescriptions) within most ethnic minority groups is higher than that for ethnic Dutch, whereas they generally make less use of hospital care, medical aids, and physical therapy. This ethnic variation in health care utilisation could be an indication for potential inequity in health care either in accessibility or quality.

The effectiveness of the CHW programme

Our study adds further insight to the effectiveness of CHW deployment in the use of health services, loneliness, HRQOL, and functional limitations amongst elderly immigrants (Chapter 6).

- In contrast to the control group without CHWs, the use of curative health services did not increase in the intervention group after implementation of the CHW programme. The health information and education sessions in the intervention programme have probably resulted in increased knowledge on health and lifestyle, self-efficacy and improved self-management and thereby more efficient use of curative services.

- We could not identify any effect on the use of services of health care and well-being. Possible explanations are the pre-existing low use of home and day care services by elderly immigrants due to language barriers, the required financial contribution, and the strong preference for help by informal caregivers. This situation may place informal caregivers at risk for significant burden as a result of taking on the caregiver role. However, the CHW programme did not manage to overcome these barriers; possibly, more time is required.

- Loneliness decreased amongst the elderly immigrants who actively participated in the intervention programme in contrast to the inactive elderly population. Regular contact with the CHWs and participation in the health education sessions and informational meetings has most likely encouraged the participants to leave home and participate in local activities. Within the STEM project, several facilities were chosen for local informal meetings such as a meeting place for Turkish elderly, once-a-week-meetings for Moroccan elderly men, and a day care centre for Moroccan elderly men. The beneficial effect for those who actively participated supports the positive impact of the intervention programme on social isolation. This effect is particularly important because loneliness, although closely integrated in their kin network, is common amongst older immigrants, with a high impact on health quality of life and well-being. Our finding that loneliness is an important predictive factor for low HRQOL confirms this effect in elderly immigrants (Chapter 5).

- The CHW programme had no impact on HRQOL and functional limitations. Moroccan and Turkish elderly are reported to perceive a poorer HRQOL, particularly physical quality of health, than ethnic Dutch elderly (Chapter 5). Possibly, a longer period of time is required for the CHW programme to improve individual quality of life. In contrast to previous studies, independence in daily activities in the study group was already fairly high at baseline, which left little room for improvement.

METHODOLOGICAL REFLECTIONS

Design

Although a randomised controlled trial is the most valid design for evaluating health care interventions, we believed that randomisation was not appropriate for our study. The CHWs could not have implemented their role for the whole population, which would have placed compliance at risk. The assignment of elderly to control conditions without
obvious benefit to the participants would also have placed the CHW at risk for a role conflict. We considered two alternative designs: a quasi-experimental design and a stepped wedge design. We chose a quasi-experiment in which we controlled for pre-existing differences by comparing the changes in the intervention group with those in a control group. This design enabled us, in contrast to the stepped wedge design, to provide the intervention to the target group in the same time period. The time duration of the study was also too short for a stepped wedge design.

In the design of the study, we had chosen to conduct the pre-intervention research interview (conducted by trained bilingual interviewers) and the problem identification (conducted by the CHWs) in the same time period. In practice, the research obstructed the intervention. Distrust of research by the elderly impeded the recruitment of participants to the intervention programme and has been an important factor in the decision to participate in the intervention programme.

Recruitment
According to the literature, the recruitment of ethnic minority populations is challenging, and participation rates do not exceed 50% 13-14. Language barriers are one of the factors that influence the decision to participate. Therefore, we trained bilingual interviewers and used translated versions of the questionnaire. We ensured the compatibility of interviews and minimised the variation in results by using standardised translated versions of the questionnaire instead of translating the questionnaire during the interview.

Given the close relation of the CHWs with the communities from which participants had to be recruited, we initially involved the CHWs in research procedures. However, the research role put many demands on the CHW, and they encountered a range of problems in contacting respondents. These problems were partly related to mistrust and disappointment with governmental institutions, negative experiences with previous projects, and a lack of familiarity with research. For that reason, we decided to recruit professional transcultural research assistants to support the inclusion process amongst the Moroccan elderly. This method improved compliance. Without the interference of the CHW, the research assistant could schedule the interview appointments within a shorter time period, which improved the willingness to participate.

Nonetheless, we did not succeed in achieving a comparable proportional participation amongst the three groups. The CHWs in Tiel succeeded in reaching a large portion of the Moluccan elderly (70.6%), but the willingness to participate in the research was low (18.6%). In Utrecht, the CHWs and the research assistants reached 46.6% of the target group (Moroccan elderly) and the willingness to participate was moderate (38.1%). The CHWs in Harderwijk reached 42.9% of the target group (Turkish elderly), but the willingness to participate was high (79.3%). Overall, 41.1% of the people reached by the CHWs were willing to participate, which was comparable with previous research amongst these ethnic groups in the Netherlands (48%) 1.
REFLECTIONS ON THE CHW INTERVENTION

Ten specifically trained CHWs were deployed at three different locations in the region of Utrecht, each with a specific ethnic group of older immigrants. Culture- and site-specific factors have resulted in varying degrees of success of the CHW intervention programme.

Moroccan elderly

In Utrecht, we encountered a range of problems that greatly impacted the success of the intervention. First, the CHWs had difficulty contacting respondents. Research-distrust by the Moroccan elderly impeded their recruitment to the intervention programme. This distrust was rooted in negative experiences with previous (research) projects, such as not being informed about the outcome, a mismatch between expectations and the experienced lack of benefits from participation. High-risk groups are often approached for participation in community projects, and the absence of any short-term tangible benefits is reported to lead to distrust and resistance to future participation.18-19.

Second, we did not succeed in establishing an effective collaboration with the network of the local mosque despite substantial effort of the CHWs and representatives of the Dutch Network of Organisations of Older Migrants (NOOM)20. This factor also originated from a series of negative experiences in the past.

We also encountered diversity in the large Moroccan elderly population (n=552), which is divided into several subgroups through language (Moroccan-Arabic, Berber with both several dialects), religious orientation, and region of origin. Each CHW deployed was familiar with one subgroup only. Therefore, their own subgroup could be reached easily, but the unfamiliarity with other subgroups made it difficult to access them.

A fourth factor was coincidental: immediately before the start of the improvement activities, asbestos was found in the flats of the elderly population by the local housing corporation. Many of the residents could not enter their homes for weeks and feared that their homes were no longer suitable for living. The forced re-allocation resulted in much societal consternation, which negatively affected compliance with the intervention programme.

All of these circumstances made the recruitment of participants and the implementation of the programme in Kanaleneiland very challenging, especially in the initial phase. Later, the CHWs observed that the commitment of the elderly increased after they experienced tangible results from the project (Chapter 7). A longer time period may have resulted in a higher participation rate in the improvement activities, which was relatively low (17.1%).

Turkish elderly

In Harderwijk, we initially faced similar distrust amongst the Turkish elderly. This wariness was not focussed on the CHWs or the local project coordinator but again on negative experiences with research in the past. With substantial effort, the CHWs succeeded to overcome this resistance, resulting in a high participation rate in the improvement activities (77.8%) and high visibility of the project amongst the target group.

We observed several critical success factors in Harderwijk. First, all CHWs were well-integrated in the local community, had credibility and were visible for the Turkish elderly. Second, excellent collaboration developed between the project team and the local professionals. The local project coordinator initiated a so-called Ambassador’s network consisting of local care and cure providers, housing cooperation, the mosque and the city council. This local network committed itself to make existing facilities more culturally sensitive and was actively involved in the implementation of the project activities.

In Harderwijk, the local context most likely contributed to the success; the Turkish elderly population is small (n=203), originating from the same region in Turkey, and is strongly embedded in the local mosque organisation.

Moluccan elderly

In Tiel, we faced a rather existential problem: the Moluccan elderly reported to not experience the suggested problems with health, well-being, and accessibility of services. The target group could not identify themselves in the aims of the project. This factor resulted in very poor compliance in Tiel, despite maximum efforts of the CHWs, the project team and the local organisations.

To overcome these problems, we tried to implement the CHW intervention programme in Opheusden, a small village nearby Tiel with a well-organised Moluccan community. Again, despite the support of local care, cure and housing organisations, the project could not be fully implemented. Only a few barriers to health and welfare services were observed, and some local initiatives for improvement activities were already underway. As a result, we were unable to implement the CHW programme amongst the Moluccan elderly.

The question remains whether the health status of the Moluccan elderly is better than reported earlier, resulting in an accompanying lower use of services, or the actual need for health and welfare services is addressed by an intensive use of informal care services by relatives and fellow community members. Accordingly, problems may be obscured, which potentially results in increased pressure on the informal care providers. The latter was also the main concern of the local primary care providers at the start of the project and of the local branch of the Dutch Network of Organisations of Older Migrants (NOOM).
We conducted additional research on the health registry data from the insurance company to position the health care use by the Moluccan elderly (Chapter 2). Consistent with previous research, we found that the use of general practitioner services, medication prescriptions, physical therapy, and hospital care was relatively low amongst Moroccan elderly compared with other ethnic minorities but also with elderly with Dutch origins. However, we did not have medical background information, so the question whether the lower use is justified by better health could not be answered.

Inequities in health between Moluccan and Dutch elderly have most likely been marginalised over time. Moluccans, ex-soldiers of the Dutch colonial army and their families, were transferred to the Netherlands after the decolonisation of Indonesia in 1951. After arrival, they lived socially and physically isolated from Dutch society in resettlement camps (where the living situation, language, and customs resembled those of the country of origin) and later in ‘Moluccan neighbourhoods’. The group of first generation Moluccan elderly has become small, and many of the present elderly experienced their childhood in the Netherlands. They have become familiar with the Dutch language and institutions and values of the Dutch society. However, social support within the Moluccan community remains very strong, and traditional values of ‘taking care of own kin’ persist. With the cultural evolution amongst the second and third generation and the consequent integration into Dutch society, it is questionable if this social network will be sustainable in future.

**Critical success factors for CHW programmes**

Our study adds further insight to the prerequisites of successful implementation of CHWs (Chapter 7). The most important conclusion for future CHW interventions amongst elderly immigrants is that benefits of participation should be made clear to the target group from the beginning to maximise participation. Second, for optimal effectiveness, the profile of the CHWs should match the various subgroups within the community, not only in culture but also in language and societal position. This match should be ensured in the selection of the CHWs. Third, at the start of the programme, a thorough analysis of the local situation is required to assess cultural diversity and social cohesion and to explore essential partners in the local community. Fourth, collaboration with relevant stakeholders, such as the local migrant organisations, municipality, and health care and social welfare providers, and embedding in local migrant networks (e.g., mosque, church) are key factors for successful implementation of the intervention. The facilitation of the CHW is another essential success factor. Ongoing meetings and a local project coordinator as a sparring partner for the CHW are required to optimise the performance of the CHW team and to keep the CHWs engaged. Finally, for the optimal effectiveness of a CHW programme, time is needed to gain the trust of elderly immigrants and to stimulate them to participate.

**Recommendations for future practice**

The findings of this thesis are important for health care and welfare providers and policy makers in the joint ambition to create culturally sensitive care and cures for elderly immigrants. The deployment of CHWs is an effective means to achieve this goal and should be recommended on a large scale, given the rapidly growing elderly immigrant community.

The deployment of CHWs is even more pressing now that the support for programmes of ethnic care consultants (Allochton zorgconsulenten in Dutch) and that of educators in their own language and culture (VETC-er in Dutch) has been stopped in most municipalities. Additionally, the Dutch government abolished the financial reimbursement for professional interpreters in health care, whereas most elderly immigrants experience difficulties in explaining their complaints and care needs due to poor command of the Dutch language and illiteracy.

The urgency for deploying CHWs is also driven by the actual transitions in the social domain. The municipalities receive more tasks in supporting the elderly, and it is important that all groups, including elderly immigrants, are adequately reached. Although most municipalities have no targeted policies for elderly immigrants, our study demonstrated the potential of the CHW approach to bridge the gap between elderly immigrants and providers of services. Municipalities do well in examining whether this subgroup of older immigrants is sufficiently visible, whether their needs are adequately mapped and whether existing health and welfare services are sufficiently culturally sensitive. If not, the deployment of CHWs could be very supportive to achieve this aim.

In our view, CHWs should be embedded in the municipal organisation to ensure continuity. In response to the actual transitions in the social domain, municipalities have introduced so-called social neighbourhood teams inspired by the successful model of the ‘Behind the Front Door-approach’ (Achter-de-Voordeur-aanpak’ in Dutch)². In our view, the CHW function should be integrated into these teams.
Structural financing is required for successful large-scale implementation. Although volunteers are increasingly important in informal care provision and the original concept of multicultural health brokers in Canada was based on voluntary services, we think the CHW should be employed. Voluntary participation largely depends on ideological commitment, which may not always prove sustainable. In our opinion, CHWs deserve fair compensation for the work they perform, similar to any other employee. We observed that formal recognition and monetary appreciation was very important to maintain the CHWs’ engagement. However, there are some drawbacks as well. Paid CHWs have more of an obligation to adhere to the priorities established by an organisation. Those priorities may diverge somewhat from the priorities of the community and place the CHW at risk of having a greater commitment to the organisation/health system than to the community. These perceptions may impact trust and, therefore, reach and effectiveness.

Although we have focussed on first-generation immigrants and the use of CHWs within the large immigrant groups with a long history in the Netherlands, the use of CHWs might also be a feasible approach for refugee populations who have more recently arrived in the Netherlands. This approach has been successful in Canada. To facilitate large-scale implementation, a ready-to-use STEM toolkit has been recently developed and made available for health care and social welfare providers and municipal representatives. The kit includes the function profile of the CHW, the content of the training of the CHWs, the implementation steps of the CHW intervention programme, and important lessons learned from the STEM project. Currently, the municipalities and providers of health and social welfare services must decide to enhance consistency and effectiveness.

REFERENCES


SUMMARY

The proportion of non-western immigrants aged 55 years and older in the population is rapidly growing. In the Netherlands, the number is expected to increase from 183,000 in 2010 to 445,000 in 2025. The largest groups originate from Surinam, Morocco, Turkey and the Netherlands Antilles/Aruiba, in addition to smaller groups such as the Moluccans.

Older immigrants in the Netherlands, as in other Western countries, are often in poorer health than the indigenous population. This applies to self-reported health and mental health as well as the prevalence of chronic diseases such as diabetes mellitus, COPD, musculoskeletal disorders, hypertension, and cardiovascular disease. The incidence of many cancers is, however, lower. Although mortality is substantially lower, morbidity seems to be higher, in particular among those from the first-generation. Older immigrants not only have a poorer health status compared to native Dutch older adults, they also face personal (e.g., language problems and limited knowledge of the health care system) and institutional barriers (e.g., poor understanding of their needs and culturally inappropriate services) in their access to health care facilities.

Within the National Care for Elderly Programme, we designed the Voice of Elderly Immigrants (STEM) project, in which we used Community Health Workers (CHWs) from the community to improve the access of elderly immigrants to cure and care facilities. Our CHW programme was based on the practice of multicultural health brokering in Edmonton, Canada. Specifically trained CHWs from ethnic backgrounds similar to the elderly immigrants were deployed on a part-time basis (1 to 2 days a week) in a role that significantly expanded beyond the regular tasks of health care information and health navigation. In close collaboration with the local health care and social welfare providers, the CHWs were also trained to involve the elderly immigrant groups in identifying problems and framing solutions at the community level.

The primary aim of this thesis was to assess the effectiveness of a CHW intervention programme on improving elderly immigrant access to health and welfare services, and the secondary aim was to improve the health-related quality of life (HRQOL) and self-efficacy of elderly immigrants.

In Chapter 2, we explored whether the health care use of diverse ethnic minority elderly populations (Turks, Moroccans, Surinamese, and Moluccans) differs from that of indigenous elderly using the registry data from a Dutch health insurance company. Our study confirms that older adults from ethnic minorities and ethnic Dutch older adults differ in health care utilisation. The pattern of differences is, however, rather complex as the differences depend on the type of health care. We found that the use of primary health care facilities (GP services and medication prescriptions) within most ethnic minority groups is higher than that for ethnic Dutch, who generally make less use of hospital care, medical aids, and physical therapy. We also found differences between the ethnic minority groups. The Moluccans reported a systematically lower health care usage than the ethnic Dutch.

Further research on the interpretation of the ethnic variations in health care use as potentially inequitable should take medical need, patient treatment preferences, self-efficacy, and treatment adherence into account.

In Chapter 3, we systematically reviewed the international scientific literature to investigate whether CHWs are effective in providing benefits, specifically in terms of access to care, health knowledge, health behaviour, and health outcomes, to ethnic minority older adults. The strength of the evidence differs by outcome category. We found indications that CHWs serve as a means of improving access to health care, health behaviour and, to a lesser extent, health outcomes among ethnic minority older adults. No studies with knowledge as an outcome were found. Further studies should include knowledge as an outcome to examine whether CHWs can improve knowledge in ethnic minority older adults.

In Chapter 4, we reported the study protocol, describing the design, methods, strengths and challenges of the STEM study. We developed a CHW intervention programme that was implemented at three different locations, each with a specific population of immigrants: Moroccan elderly (Utrecht); Turkish elderly (Harderwijk); and Moluccan elderly (Tiel). The key element of the programme was the introduction of CHWs, who acted as intermediaries between elderly immigrants and providers of health and social welfare services. The CHWs were trained to identify health and social problems (phase one) and to frame feasible solutions in close collaboration with providers of health care and welfare services (phase two). In a quasi-experimental study, we evaluated the effectiveness of this CHW intervention programme.

In Chapter 5, we assessed differences in HRQOL among different ethnic groups of elderly immigrants (of Moroccan, Turkish, and Moluccan ethnic background) and whether, in addition to established determinants of HRQOL, such as multimorbidity, loneliness, socio-demographics (age, gender, and socio-economic status), and acculturation, ethnicity contributed independently to HRQOL. The study revealed that elderly immigrant populations in the Netherlands experience different levels of HRQOL: Moroccans reported the poorest HRQOL, whereas Moluccans had, by far, the best HRQOL. The Turks scored in between these two groups. Multimorbidity and loneliness, rather than ethnicity, determine the level of HRQOL reported by elderly immigrant populations. In addition, gender and attachment to Dutch culture moderately contributed to the variance in HRQOL. Our results suggest that interventions meant to improve the HRQOL within the ethnic groups do not need to be specific for a particular elderly immigrant population but should, similar to those for native elders, address loneliness and multimorbidity. Of course, it is important that such programmes, in terms of form, correspond to the cultures and languages of the target group.
In Chapter 6, we described the effectiveness of our CHW intervention programme. The evaluation of the deployment of CHWs was primarily focussed on access to health care services and secondarily focussed on the HRQOL, functional limitations, and loneliness in older immigrants. Our results demonstrate that the use of curative health services (hospital admissions, out-of-hours general practitioner (GP) services, and day treatments at the hospital) stabilised in the intervention group after the implementation of the CHW programme in the elderly immigrant community compared to a control group without CHWs. In the latter group, however, the use of curative health services was increased. The fact that the use of curative services did not increase in the intervention group was unexpected. The health education sessions and information meetings in the intervention programme may have resulted in increased knowledge and self-efficacy, improved self-management, and less frequent medical consultations and therefore in a more effective use of GP care and hospital care. We found no impact of the CHW programme on the use of care health services (home care, temporary nursing home or care home admission, and day care).

Loneliness was reduced among the elderly immigrants in the intervention programme, especially among those who actively participated in the improvement activities initiated by the CHWs. We found no impact of the CHW programme on HRQOL or self-efficacy. A longer period of time is likely required for the CHW programme to improve these outcomes.

Chapter 7 contains a qualitative study with two focus group sessions with the CHWs in which we explored the challenges of our CHW intervention programme and the key factors that lead to successful CHW function. Our study confirmed the key qualifications for the successful functioning of CHWs already known from the literature such as being competent in the Dutch language and the native languages of the elderly, understanding of the social-cultural background, norms, values and sensitivities of the elderly, having knowledge of the issues that the elderly face, and being regarded as a trusted and respected community member. Additionally, our study shows that for a successful deployment of CHWs, it is essential to gain the trust of the target group. To achieve this, first of all, more time is needed than the limited time available for this project. Additionally, it helps to offer a practical benefit to the target group at an early stage of the intervention programme and to ensure that this offer can be quickly realised, which supports commitment and trust. This seems important because a lot of distrust exists within the target group due to negative experiences with previous (research) projects.

Good insight into the composition of the target group is another important key factor. It is important to know whether the target group consists of a diversity of subgroups, forms a cohesive community (for example, around a certain church or mosque), and which languages are spoken. In the selection of the CHWs, one should ensure that the CHWs match the different subgroups within the community.

Commitment of and collaboration with stakeholders and institutions that are relevant for elderly immigrants (such as churches or mosques and migrant organisations) are essential for a successful rollout of the intervention activities.

A local project organisation with a local project coordinator embedded in a network of health- and welfare organisations is also an important supportive factor.

In Chapter 8, we discussed the main findings. We reflected on a number of methodological issues specific to this type of research (such as the inappropriateness of a randomised controlled trial and the limited willingness to participate in research studies). Furthermore, we provided recommendations for future practice. The findings of this thesis are important for health care and welfare providers and policy makers in the joint ambition to create culturally sensitive care and cures for elderly immigrants. This is essential because the number of elderly immigrants is rapidly growing. We showed that the deployment of CHWs could be an effective means to achieve this goal. The urgency for deploying CHWs is also visible now that the support for programmes of ethnic care consultants and that for educators in their own language and culture has been stopped, and the financial reimbursement for professional interpreters in health care has been abolished. In this context, new initiatives are essential to improve the access to health and welfare services for elderly immigrants.

Although most municipalities have no targeted policies for older immigrants, the STEM study showed the potential of the CHW approach to bridge the gap between elderly immigrants and providers of services. Municipalities will do well in examining whether this subgroup of older immigrants is sufficiently visible, whether their needs are adequately mapped and whether existing health and welfare services are sufficiently culturally sensitive.

CHWs should be embedded in the municipal organisation to ensure continuity. In response to the actual transitions in the social domain, municipalities have introduced so-called social neighbourhood teams. In our view, the CHW function should be integrated into these teams.

Structural financing is required for successful large-scale implementation. Although volunteers are increasingly important in informal care provision, and the original concept of Multicultural Health Brokers in Canada was based on voluntary services, we think the CHW should be employed. Voluntary participation largely depends on ideological commitment, which may not always prove sustainable.

To facilitate further implementation, a ready-to-use STEM toolkit has been recently developed and made available for health care and social welfare providers and municipal representatives. Currently, the municipalities and providers of health and social welfare services must decide to enhance the consistency and continuity of culturally sensitive care for older immigrants.
SAMENVATTING

Het aandeel niet-westerse migranten van 55 jaar en ouder in Nederland groeit snel. De verwachting is dat het aantal zal toenemen van 183.000 in 2010 naar 445.000 in 2025. De grootste groepen ouderen zijn afkomstig uit Suriname, Marokko, Turkije en de Nederlandse Antillen/Aruba, naast kleinere groepen waaronder Molukkers.

De gezondheidstoestand van oudere migranten in Nederland is, net als in andere Westerse landen, vaak slechter dan die van de autochtone ouderen. Dit geldt zowel voor ervaren gezondheid, psychische gezondheid als voor chronische aandoeningen zoals diabetes mellitus, gewrichtsaandoeningen, hypertensie en hart- en vaatziekten. Veel soorten kanker komen echter minder vaak voor onder migranten ouderen. Hoewel mortaliteit lager is, blijkt morbiditeit vaker voor te komen, met name onder migranten van de eerste generatie.

De gezondheidstoestand van oudere migranten is niet alleen minder gunstig in vergelijking met ouderen van Nederlandse komaf, ze ervaren ook vaak persoonlijke barrières in de toegang tot de bestaande zorg- en welzijnsvoorzieningen (bijvoorbeeld taal- en communicatieproblemen, beperkte kennis van het zorgsysteem) en institutionele barrières (bijvoorbeeld beperkte kennis van de wensen en behoeften van oudere migranten en onvoldoende cultusensensitive voorzieningen die hierop aansluiten).

Het in het kader van het Nationaal Programma Ouderenzorg (ZonMw) is het project “Stem van de oudere migrant” (STEM) ontwikkeld waarbij sleutelfiguren uit de eigen gemeenschap van de doelgroep ouderen zijn ingezet om de toeleiding naar bestaande zorg- en welzijnsvoorzieningen te verbeteren. De inzet van de sleutelfiguren is afgeleid van het concept van de Multicultural Health Brokers in Edmonton, Canada. Speciaal getrainde sleutelfiguren zijn parttime (1 tot 2 dagen per week) ingezet. Naast het verstrekken van informatie over gezondheidszorg- en welzijnsvoorzieningen en er zo nodig naar verwijzen, waren de sleutelfiguren in het STEM-project ook getraind om individuele gezondheidsproblemen, behoeften aan zorg- en welzijnsvoorzieningen en persoonlijke ervaringen met zorginstanties te inventariseren en op grond van deze probleemanalyse lokale ‘verbeterprojecten’ te initiëren, in samenspraak met de doelgroep ouderen (Tiel). De sleutelfiguur diende als intermediair tussen de oudere migranten en (de professionals van) de lokale zorg- en welzijnsinstellingen. De sleutelfiguren zijn getraind om individuele gezondheidsproblemen en behoeften aan zorg- en welzijnsvoorzieningen te identificeren (fase 1) en ‘verbeterprojecten’ te initiëren in nauwe samenwerking met lokale aanbieders van zorg- en welzijnsvoorzieningen (fase 2). Door middel van een quasi-experimenteel design met controlegroep is de effectiviteit van de interventie met sleutelfiguren geëvalueerd.

De gezondheidstoestand van oudere migranten in Nederland is, net als in andere Westerse landen, vaak slechter dan die van de autochtone ouderen. Dit geldt zowel voor ervaren gezondheid, psychische gezondheid als voor chronische aandoeningen zoals diabetes mellitus, gewrichtsaandoeningen, hypertensie en hart- en vaatziekten.

Het primaire doel van de in dit proefschrift beschreven studie is het onderzoeken van het effect van de inzet van sleutelfiguren op het gebruik van zorg- en welzijnsvoorzieningen door oudere migranten. Daarnaast zijn de effecten op zelfredzaamheid en kwaliteit van leven verkend.

In hoofdstuk 2 onderzochten we of het geregistreerd zorggebruik van ouderen uit diverse etnische minderheidsgroepen (Turken, Marokkanen, Surinamers, Molukkers) verschilt van dat van ouderen van Nederlandse afkomst. De analyse van data van een grote zorgverzekeringsbasis in Nederland bevestigde dat ouderen uit etnische minderheidsgroepen en autochtone Nederlandse ouderen verschillen in zorggebruik. Het patroon van verschillen is echter complex, is onder meer afhankelijk van type zorg.
kwaliteit van leven: ouderen van Marokkaanse afkomst rapporteerden de laagste kwaliteit van leven, Molukse ouderen rapporteerden de hoogste kwaliteit van leven en Turkse ouderen namen een middenpositie in. De analyse naar determinanten voor kwaliteit van leven toonde aan dat etniciteit als zodanig geen voorspeller was voor kwaliteit van leven. Multimorbiditeit en eenzaamheid bleken veruit de belangrijkste voorspellers voor kwaliteit van leven, en in minder mate geslacht en acculturatie (verbondenheid met de Nederlandse cultuur). De determinantenanalyse laat zien dat de belangrijkste voorspellers voor kwaliteit van leven van ouderen in de ethische minderheidsgroepen dezelfde zijn als die van autochtone ouderen. Onze resultaten suggereren dan ook dat gezondheid- en preventieprogramma’s voor het verbeteren van kwaliteit van leven van migrantenouderen geen specifieke inhoudelijke focus per migrantengroep hoeven te hebben, maar zich, net als bij autochtone ouderen, kunnen richten op het verminderen van eenzaamheid en multimorbiditeit. Natuurlijk is het wel van belang dat dergelijke programma’s qua vorm wel afgestemd zijn op de taal en de cultuur van de doelgroep.

In hoofdstuk 6 is de inzet van sleutelfiguren in de toeleiding naar het bestaande zorg- en welzijnsnetwerk rondom oudere migranten geëvalueerd aan de hand van het effect op het gebruik van zorgvoorzieningen op het gebied van de cure (huisartsenpost en ziekenhuiszorg) en de care (huiszorg, dagopvang en verblijfzorg). Daarnaast is gekeken naar de effecten op eenzaamheid, kwaliteit van leven en zelfredzaamheid.

In de groep waar sleutelfiguren actief waren, bleek het gebruik van curatieve zorgvoorzieningen gestabiliseerd in vergelijking met de groep zonder sleutelfiguren waar het zorggebruik toenam. Wellicht hebben de voorlichtingsbijeenkomsten met de sleutelfiguren bijgedragen aan meer kennis en meer gezondheidsvaardigheden zodat zij effectiever gebruik maken van huisarts en ziekenhuis. Er zijn geen verschillen gevonden in het gebruik van de care-voorzieningen.

De ouderen in de groep met sleutelfiguren rapporteerden ook een afname van eenzaamheid. Dat bleek in het bijzonder voor de ouderen die actief meededen aan de verbeterprojecten die door de sleutelfiguren waren opgezet.

Er werden geen verschillen gevonden in kwaliteit van leven en zelfredzaamheid. Wellicht was de duur van de inzet van sleutelfiguren te kort om hierin verbetering aan te brengen en heeft dit meer tijd nodig.

Hoofdstuk 7 bevat een kwalitatieve studie met twee focusgroepsbijeenkomsten met de sleutelfiguren waarin is nagedacht over welke factoren bijdragen aan het succesvol functioneren van sleutelfiguren en welke factoren succes in de weg staan. De studie bevestigde het belang van de reeds uit de literatuur bekende competenties waarover een sleutelfiguur zou moeten beschikken waaronder beheersing van de Nederlandse taal en de talen van de ouderen, kennis en inlevingsvermogen ten aanzien van hun culturele achtergrond, normen, waarden en gevoeligheden, kennis van de problematiek van de ouderen, en vertrouwen en respect van de migrantengroep. Daarnaast laat deze studie zien dat het voor het slagen van de inzet van sleutelfiguren belangrijk is om vertrouwen te winnen van de doelgroep. Daarvoor is in de eerste plaats tijd nodig, meer tijd dan in de beperkte duur van het project beschikbaar was. Verder helpt het om in het beginstadium zo snel mogelijk concrete (verbeter)acties aan te bieden aan de doelgroep. Dit bevordert het draagvlak en het vertrouwen. Dit is belangrijk gebleken omdat er nogal wat wantrouwen was bij de doelgroep vanwege de negatieve ervaringen met eerdere projecten.

Ook goed inzicht in de samenstelling van de lokale migrantengemeenschap is een succesfactor. Het is belangrijk om de deelname of sprake is van een homogene migrantengroep, dat de inzet van sleutelfiguren potentie heeft om de kloof te verkleinen tussen ouderen in Nederland geen specifiek beleid hebben voor migrantenouderen, laat de STEM-studie zien dat de inzet van sleutelfiguren potentie heeft om de kloof te verkleinen tussen ouderen in Nederland. De studie bevestigt het belang van inzet van sleutelfiguren om het dragen van de kloof tussen ouderen in Nederland en de beperkte duur van het project mogelijk te maken. Verder helpt het om in het beginstadium zo snel mogelijk concrete (verbeter)acties aan te bieden aan de doelgroep. Dit bevordert het draagvlak en het vertrouwen. Dit is belangrijk gebleken omdat er nogal wat wantrouwen was bij de doelgroep vanwege de negatieve ervaringen met eerdere projecten.

In hoofdstuk 8 worden de bevindingen bediscussieerd. We hebben gereflecteerd op enkele methodologische beperkingen die eigen zijn aan dit type onderzoek (zoals de onbruilbaarheid van een gerandomiseerde, gecontroleerde en beperkte bereidheid tot deelname aan onderzoek). Ook hebben we aanbevelingen aangedragen voor de praktijk. De bevindingen van dit proefschrift zijn waardevol voor aanbieders van zorgvoorzieningen en beleidmakers die willen werken aan meer culturensensitieve zorg voor migrantenouderen. Dit is van belang omdat het aantal migrantenouderen sterk toeneemt. We hebben laten zien dat de inzet van sleutelfiguren een effectieve strategie kan zijn om dit doel te bereiken. Met het opheffen van de functies van allochtonen kan het doel van meer culturensensitieve zorg voor migrantenouderen sterk toeneemt. We hebben laten zien dat de inzet van sleutelfiguren een effectieve strategie kan zijn om dit doel te bereiken. Met het opheffen van de functies van allochtonen kan de mogelijkheden voor het realiseren van zorg op maat voor gemakkelijk. Daarmee kan de mogelijkheid voor het realiseren van zorg op maat voor migrantenouderen sterk toeneemt. We hebben laten zien dat de inzet van sleutelfiguren een effectieve strategie kan zijn om dit doel te bereiken. Met het opheffen van de functies van allochtonen kan de mogelijkheid voor het realiseren van zorg op maat voor migrantenouderen sterk toeneemt. We hebben laten zien dat de inzet van sleutelfiguren een effectieve strategie kan zijn om dit doel te bereiken. Met het opheffen van de functies van allochtonen kan de mogelijkheid voor het realiseren van zorg op maat voor
Om continuïteit te waarborgen is het van belang dat de sleutelfiguren ingebouwd zijn in het gemeentelijk beleid. In het kader van de huidige transities in het sociale domein hebben gemeenten zogenoemde wijkteams geïntroduceerd. Wij bevelen aan om de functie van sleutelfiguur in deze wijkteams te integreren.

Structurele financiering is noodzakelijk om de sleutelfiguur-functie in te voeren in de dagelijkse praktijk. Hoewel in de door de regering bepleite participatiesamenleving vrijwilligers van toenemende betekenis gaan worden in het bieden van zorg en het oorspronkelijk concept van Multicultural Health Brokers in Canada is gebaseerd op de inzet van vrijwilligers, menen wij dat een financiële vergoeding voor het werk van een sleutelfiguur helpt om de continuïteit te waarborgen. Om het proces van verdere implementatie van de sleutelfiguur-functie te ondersteunen is recentelijk met migrantenzelforganisaties de STEM-toolkit ontwikkeld en beschikbaar gesteld aan de aanbieders van zorg en welzijn en vertegenwoordigers van gemeentelijke overheden. Het is nu aan de gemeenten en instellingen om verder werk te maken van meer cultuursensitieve zorg voor migrantenouderen.

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**CURRICULUM VITAE**

Ilona Verhagen was born on the 2nd of December 1978 in Zeist, the Netherlands. She completed a Bachelor’s degree in Human Resource Management (Cum Laude) at the Horst University of Applied Sciences (now part of Utrecht University of Applied Sciences) in 2004. She obtained her Master of Science in Cultural Anthropology at Utrecht University in 2007. For her master thesis, she conducted ethnographic fieldwork on the living conditions of undocumented migrants in the city of Amsterdam. After the finalisation of her studies, she worked as a lecturer in Social Sciences at the Rotterdam University of Applied Sciences, Institute of Social Studies. In 2011, she started her PhD study at the University Medical Center Utrecht (department Julius Center for Health Sciences and Primary Care) under the supervision of Prof. Dr. Niek de Wit, Dr. Wynand Ros and Dr. Bas Steunenberg. The results of this work are presented in this thesis.
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