# IMMIGRANTS' ACCESS AND UTILIZATION OF HEALTH CARE SERVICES IN FINLAND: MAAMU STUDY

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**IMMIGRANTS' ACCESS AND UTILIZATION OF HEALTH CARE SERVICES IN FINLAND: MAAMU STUDY**

Migration is on the rise globally with migrants forming a considerable percentage of a country's population. Finland also has seen steady growth in number of immigrants in recent years. Proper access and delivery of quality health care to the population and its sub-group is fundamental to achieve an equitable health care environment. This study aimed to evaluate accessibility and utilization of health care services by Russian, Somali and Kurdish immigrants in Finland. This study also described the experiences of immigrants in using health care services and associates socioeconomic factors with availability and utilization of health care services.

A cross -sectional study, based on Immigrant health and welfare (Maamu), was conducted by the National Institute for Health and Welfare (THL) from 2010 to 2012. The study consisted of 3000 baseline participants, 1000 each from Russian, Somali and Kurdish groups, aged 18 to 64 years. Data were collected using structured questionnaires and interviews. Chi-square test was used to analyze association between categorical variables. Demographic variables were reported as frequency and percentage.

A low percentage of the population were found to have access to a certain doctor and/or nurse. 63% of the participants had visited a doctor in the past 12 months and around 90% of them were within Finland. Most of the participants were found to have trust in the health care system, with a fraction of them reported facing discrimination. There was a significant difference among the groups regarding the trust; however, there was no significant difference among the groups with reference to discrimination. The three groups had similar opinion regarding the factors affecting utilization with cost being the main factor. Among the socioeconomic factors, gender, age, income, marital status, language proficiency, length of stay and education were found to be differentially associated with the access and utilization of the health services among the three study groups

Slight differences were found in the accessibility and utilization pattern among the three study groups. Proper planning and implementation of policies considering all the diverse immigrant groups is necessary to bring an environment of equity in the healthcare.

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**CONTENTS**

**LIST OF TABLES**

**ABBREVIATIONS**

| | |
|---|---|
| ESF | European Social Fund |
| EU | European Union |
| FAS | Family Affluence Scale |
| IOM | International Organization for Migration |
| KELA | Social Insurance Institution of Finland |
| SPSS | Statistical Package for Social Sciences |
| THEY | Union of Health and Social Care Professional |
| THL | National Institute for Health and Welfare |
| UK | United Kingdom |
| US | United States |
| VALVIRA | National Supervisory Authority for Welfare and Health |
| WHO | World Health Organization |

# 1. INTRODUCTION

"The right to the highest attainable health" has been described in the World Health Organization (WHO) constitution of 1946, Alma Ata Declaration (WHO 1978) and World Health Declaration 1988 (WHO 1988). Equitable access to health services was one of the steps that was included regarding the "health of migrants" in the 2008 Resolution of the World Health Assembly (WHO 2011). Thus, barriers leading to the inequalities in health need to be identified and studied, to improve the political, religious, cultural and ethnical situations in order to ensure proper access and delivery of quality health care to the population and its sub-groups.

Immigration refers to the movement of people from their native country to a foreign land in order to settle there. There are various reasons behind the phenomenon such as socioeconomic problems, political instability, educational purposes and quest of a better quality of life. In present context, immigration is on rise globally. Migrants are now forming a considerable percentage of a country's population. Reports on world migration by IOM (International Organization for Migration) suggests the number of international migrants around the world to be about 214 million by the end of 2010, where out of every 33 people, one would be a migrant (IOM 2010). According to Eurostat estimation, as of January 1, 2012, there were about 20.7 million foreign nationals and 33.0 million foreign born population in the EU-27 countries. Germany, Spain, Italy, United Kingdom and France share the top five positions for hosting the largest number of foreigners living in the EU (Migration and migrant population statistics 2013). Finland has also observed a steady increase in the number of immigrants in the recent years. In 2012, there was a record of 31,280 foreign nationals entering the country, which is the highest till date (Degni et al. 2012). Around half of them were from the non-European countries. The latest data reported that 28,746 people immigrated to Finland in 2015 (Statistics Finland 2015).

Mladovsky et al. (2012), report that out of the twenty-five European countries they focused on, only eleven countries (namely Austria, England, France, Germany, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden and Switzerland) had national policies regarding the improvement of migrant health by 2009. However, the policy has since been overturned in the Netherlands. The study was a comparative analysis done on the national policies regarding migration of European

countries. Information for the study has been attained from two sources- firstly from a 2008 survey conducted among an existing network of health policy experts from 19 European countries (viz, Austria, Belgium, Bulgaria, Czech Republic, Denmark, England, Estonia, Finland, France, Germany, Ireland, Italy, Lithuania, the Netherlands, Romania, Slovenia, Spain, Sweden and Turkey) and secondly, the country reports from "mighealthnet" website, which was used to get similar information on six other European countries (Greece, Hungary, Norway, Poland, Portugal and Switzerland) (Mladovsky et al. 2012).

There are many studies conducted around the world regarding immigrant health that includes studies in various European nations. However, not much research has been done in this field in Finland. With the immigration ratio being so high in Finland at present, such study is very important. This study aimed to describe the accessibility and utilization of the health care services in Finland among three population groups, Russians, Somali and Kurdish. They belong to the largest immigrant groups in Finland (Statistics Finland 2013), making them apt for the study. The study also aimed to determine various factors, which play a direct and/or indirect role in the accessibility and utilization of health services.

# 2. LITERATURE REVIEW

## 2.1. Immigration and health

Trend of migration today is growing faster than ever. Cases of in-migration are very common, but there are higher instances of international migration at present. Moving to a different country altogether brings along with itself exposure to new culture, language, people, and also to a new health care system.

Socioeconomic status, language, and ethnicity are known to have an effect in the accessibility of the health care. State of general health has been found to vary between natives and immigrants on the basis of country, place of origin and gender playing an influential role. A study conducted in 11 European countries, examining the health differences between native and immigrants among age group 50 years and older, showed that the migrants had lower standard of health as compared to the natives. The countries where these results were observed were Germany, France, the Netherlands, Sweden, Switzerland, which are countries having one of the best levels of health indicators for the entire population (Sole-auro et al. 2008).

**Health care in Finland:** Social, medical and health services in Finland are guaranteed by the public authorities as per the Constitution of Finland. The health care system and social welfare comes under the municipality, which is financed by the government. Many private enterprises and non-governmental organizations also provide services. The Ministry of Social Affairs and Health is responsible for social welfare and health care, formulation of social welfare and health care policies, preparation of legislative reforms and supervision of implementation. About twenty-five percent of all social welfare and health care services are provided by private sector. In the national level, provision of social welfare and health care services is supervised by the National Supervisory Authority for Welfare and Health (VALVIRA) (Health care in Finland 2013).

The health care service is divided into two parts: primary health care and specialized medical care. There are approximately 160 health centers in Finland, which are operated by the local authorities. They provide preventive health care services, medical care and rehabilitation, centralized services,

mental health and substance abuse services, and occupational health care. The immigrants who hold permanent residence in Finland are entitled to the same health services and benefits as the Finnish citizens. It is similar for those holding the European Health Insurance Card (Health care in Finland 2013).

### 2.1. Self-reported health

Individuals who relocate to a different nation are mostly healthier than the individuals who do not, but this "healthy migrant effect" is likely to subside as time passes. The process of social integration can be very overwhelming and may even result in an adverse effect on their wellbeing (Sundquist 2001). Numerous factors such as political and social exclusion, lack of financial support or societal backing cause the migrants to be more vulnerable (Derose et al. 2007). However, not only the innate culture but also the existent social and economic context of the host country affects the cultural driven factors having effect on self-perceived health status.

Self-reported health status is an important indicator when it comes to assessing the perception of one's overall health. One systematic review carried out in 17 nations about self-perceived health among migrants in the European Union, taking age, gender and socioeconomic factors in consideration, suggested that most migrant groups seem to be at a disadvantage compared to the local population (Nielsen et al. 2010).

Wiking and coworkers (2004), carried out a cross sectional study on the relationship between culture and self-reported health among the Swedish population and the Polish, Turkish, and Irani immigrants in Sweden. The results showed that there was an increased risk of poor self-reported health by three and five-fold in Irani and Turkish men and women, respectively as compared to the Swedes. However, the high risk for poor self-reported health was found to decrease after taking the socioeconomic status and poor knowledge of the Swedish language into consideration. Thus, the result showed that these variables do play a very important role in the association between ethnicity and self-reported health status (Wiking et al. 2004).

In a study conducted among 100 undocumented immigrant women in the Netherlands, 65% had poor self-rated health status. However, no significant association was found between the self-rated health and duration of stay in the country or age group (Schoevers et al. 2009).

In Sweden, a study was conducted on poor self-reported health comparing 526 Turkish born immigrants and 2854 Swedish population. It was found that Turkish-born men and women in Sweden had significantly higher risk for self-reported anxiety, sleeping problems and pain compared to the Swedish natives, even with adjustments of age and socio-economic status (Steiner et al. 2007).

Another cross-sectional study in Sweden consisting of 197 Kurdish immigrants and 1407 Swedes, found Kurdish born participants to have poorer psychological well-being and self-reported health, more somatic pain, recurrent gastrointestinal complaints, more anxiety and fear (Taloyan et al. 2008a).

Similarly, another study in Sweden found that those born in Yugoslavia, Arab and other western countries (the Nordic countries, the countries within European Union, Switzerland, the USA, Canada, New Zealand, Australia) had higher odds of having poor self-reported health as compared to those born in Sweden. Psychosocial and economic factors emerged as major determinants in some groups (Lindström et al. 2001).

### 2.2. Accessibility of health care service

Accessibility in terms of health care generally implies to the idea that health facilities are easily available to those in need. To have a potential to utilize the service in case of requirement describes ‘having access’, whereas the commencement of the process of utilization of the service describes ‘gaining access’. These two terms show the two important aspects of accessibility (Gulliford et al. 2002).

While in low-income countries, accessibility may relate mainly to availability of basic health services, e.g. visiting a doctor. In high-income countries, the concept might vary. Here accessibility

may refer to provision of wider range of services, achieving equity and proper outcomes in health (Gulliford & Morgan 2013).

In Canada, it was reported that the level of primary health care facilities being used by immigrants was parallel to the accessibility of Canadian-born people. However, when adjusted for health status, the immigrants were reported to have 5.3 times more primary care visits than the Canadian-born individuals (Muggah 2012). In United States, accessibility was found to have increased along with the increase in the duration of residency (Nandi et al. 2008).

### 2.3. Utilization of health care service

Oxford dictionary defines utilization as making practical and effective use of something. The true purpose of any health care service is not served if the people for whom it is meant for do not utilize it. Providing access, and making it available is one aspect whereas its utilization is a completely new dimension.

In a study conducted on 1513 migrants (53% men and 47% women) in Portugal, using questionnaires for data collection, results showed that 3.6% of the participants did not know where to go if they faced any health problems and 20% reported of never using the National Health Service. 22.4% of those who had used health services stated dissatisfaction. The study showed country of origin, duration of stay, legal and economic status to be associated positively with the utilization of health services (Dias et al. 2008).

Another study was conducted in Amsterdam, the Netherlands, consisting of 1422 participants from indigenous population and 378 participants from four largest immigrant groups (Surinamese, the Netherlands Antilleans, Turkish and Moroccan) in the country, aged 16 - 64 years. After adjusting for health status, ethnicity was found to be significantly associated with health care service utilization. It was found to be the major factor affecting health care service utilization. Surinamese, Turkish and Moroccan immigrants were found to use general practitioner care and prescribed drugs more as compared to the indigenous groups. However, usage of more specialized services was comparatively low among Turkish and Moroccan people. Surinamese population had similar

utilization of specialized care as the Dutch people when controlled for differences in need. The Antilles population had high hospital service utilization as well as suboptimal utilization of general practitioner services. Lower socioeconomic status of immigrants could be attributed to more utilization of general practitioner and prescribed drugs but may not be regarded as the reason for low usage of additional specialized services. Results showed that health care services are still far from equivalent when it comes to immigrant groups. Socioeconomic status alone could not be considered the reason for this inequality (Stronks et al. 2001).

The host societies also play a fundamental role in making the health care services accessible to the incoming population. Effective access and utilization of the services are brought about by various determining factors convening with and around each other (Hargreaves et al, 2006). A substantial part of it relies on how the society formulates a suitable environment for immigrants so as to help them overcome the socio-economic, cultural and/or psychological barriers to access the service (Scheppers et al. 2006).

Dias et al. (2008) suggested that health care utilization determinants vary among different migrant groups. Ethnic origin plays a significant role in the differences in health status, lifestyle and use of health care, which can affect the accessibility and utilization of heath care services. This understanding is important for service design and resource distribution (Uiters et al. 2006).

### 2.3.1. Discrimination in health care service

The dictionary meaning of discrimination is given as “the unjust or prejudicial treatment of different categories of people, especially on the grounds of race, age, or sex” (Oxford Dictionary 2014). A cross-sectional survey conducted in four cities of Spain among 2434 immigrants from Ecuador, Morocco, Romania and Columbia showed that immigrant status, physical appearance and workplace related factors were associated with perceived discrimination. These variables were also associated with self-rated physical and mental health. Immigrant status was reported to be the reason for discrimination by 73.3% male and 69.3% female participants, with the highest prevalence of perceived discrimination being reported by the Moroccans. Those reporting discriminations were found to be at higher risk of reporting health problems than their counterparts.

The discrimination relating to workplace was found to be associated with poor mental health and self-rated health, showing that discrimination might be an important risk factor for health in the immigrant workers (Agudelo-Suarez et al. 2011).

In another study carried out in Germany among 1844 migrants, analyzing socioeconomic status, country of origin and health behaviors, it was reported that migrants who had experienced discrimination were also having poor health status. Discrimination was found to be a psychosocial stressor along with the inferior socioeconomic status of migrants (Iquel et al. 2010).

### 2.4. Factors affecting access and utilization of health care services

Patient satisfaction is one of the main aspects of the health care system, and is quite intricate. Different type of barriers affect different population groups in different ways. These barriers need to be identified and addressed to ease the process of service access and utilization (Ngui & Flores 2006).

People grow up with their own unique set of traditions, ideas, beliefs, values and hopes. That is what forms a culture and these things have effect on how a person responds to illness and the demands of healthcare system (Eshiett & Parry 2003). Language and cultural beliefs and differences might even discourage immigrants from utilizing the formal care system (Neufeld et al. 2002).

#### 2.4.1. Socioeconomic factors

Socioeconomic factors are the social and economic elements that affect ones' attitude and lifestyle. Some major socioeconomic factors can be education, income, occupation, place of residence, ethnicity, and religion. These factors are found to affect the accessibility and utilization of the health care services. Factors such as poor living conditions, cultural factors and biological factors, may even contribute to a poorer health status (Reijneveld 1998).

A cross-sectional study was conducted among 416 Turkish immigrants aged 17-65 years living in London, using structured questionnaire. The immigrant population consisted of 74% Turkish and 26% Turkish Cypriots. There were some differences between the study groups, as the latter were older, more educated, employed, and all had permanent residency of UK. The results showed that higher quality of life was associated with good health, high education, young age, gender, owning a home, high socioeconomic status, health care services accessibility, good communication skills in English and community harmonization. However, cause of migration, country of origin, marital status and smoking habits had no association with the physical and psychological well-being. Being physically well was found to be significantly associated with socioeconomic status, health care service accessibility, education, obesity, age and community integration, whereas being psychologically well was found to be significantly associated with low socioeconomic status, obesity, being unwell and being female. Language barrier, gender, and poor health were mainly related to self-rated health, whereas the perceived quality of life was basically concerned with poor income and community integration (Topal et al. 2012).

Another study conducted in Italy among 6744 Italian students aged 11, 13 and 15 years compared the native and immigrant health and analyzed the psychosocial factors related to it. The results showed that the native population were satisfied and happier with their health and their lives as compared to immigrants, who reported having psychosomatic complaints. Assessment was done based on demographic characteristics, socio-economic conditions, social support and bullying victimization, health complaints, self-reported health, life satisfaction and happiness. The low socioeconomic status of the immigrants and poor community integration were found to be the potent reasons behind the situation. In addition, immigrant adolescents were found to face bullying. Family Affluence Scale (FAS) was used as one model for testing immigration and health relationship. Those reporting lower FAS were more probable of being healthy, happy and having a satisfied life, after adjustment for age and gender (Vieno et al. 2009).

A cross-sectional study carried out in Sweden among Kurdish immigrants showed them reporting high prevalence of poor self-reported health and psychological distress. The study was based on first Swedish National Survey on living conditions. The study participants were individuals identifying themselves as Kurdish, with 5175 Turkish and 522 Iranian participants. Kurdish

women were found to have higher anxiety risk compared to their male counterparts when adjusted for age and possible confounders. Various factors were found to be associated with the outcome, such as perceived discrimination, employment, financial problems and managing new living conditions (Taloyan et al. 2008b).

Income is found to be one of the factors affecting the health status of the immigrants. Immigrants having higher income are found to have better self-reported health compared to those with lower income (Hamilton & Kawachi 2013).

Ethnicity has been reported to be an independent risk factor for self-reported health status, in addition to lower social status and lifestyle. The varied experiences of moving in different groups also affects the health status (Sundquist 1995, 1997). The perceptions regarding combined physical and psychological health may vary due to cultural differences between ethnic groups (Shetterly et al. 1996).

### 2.4.2. Language

Language plays a key role in health care scenario. Patients with limited language proficiency may be unable to explain their health conditions. In addition, they may not be able to comprehend the advice and information rendered by the health care providers. This can even lead to misdiagnosis and wrong treatment, which can result in dangerous consequences. Patients with language barriers usually tend to struggle in understanding a medical situation, often contributing to health disparities (Fernandez et al. 2011). Limited language proficiency may lead to medical misunderstandings, and even unfavorable medicine reaction (Wilson et al. 2005). Effective communication plays an important role in patient's satisfaction, treatment compliance and health outcome (Lowell 2001). A study by Ong et al. (1995) shows a positive association between communication and outcome.

Language proficiency, duration of stay and utilization of health care were examined in immigrants living in the United States and Canada. It revealed that immigrants living in the country for less than 10 years and having limited proficiency of language had lower health care access and

utilization rate compared to those living there for more than 10 years with proficiency in the official language of the country (Leburn 2012).

Even professionals are not left unaffected when it comes to paucity of language proficiency. A trained health care professional may face difficulty in his job field due to the shortcoming. A survey carried out in Finland by Union of Health and Social Care Professionals THEY showed discrimination reported by more than twenty-five percent of immigrant health care workers at their workplace (Karanja 2013).

One is expected to have basic language skills to find a job in a country. To learn a new language, which is completely different from one's native language, takes time, even a year or more to become capable enough to get a job. The phase of struggle to settle in a new country might be over tiring or stressful to many people. All these things have direct and/or indirect impact on one's health. Not knowing where to get the information and right health care might cause additional damage to the health status. A study in Canada showed that the factors that added to the deterioration of immigrant's health status were lack of information about health issues, not knowing where to find the right health care or accessing preventive services (Zanchetta & Poureslami 2006).

In a country of 5.5 million people, only 4.2% comprise of foreign citizens in Finland (Finnish Immigration Service 2015). Finnish and Swedish are the official languages in Finland. 88.7% of the entire population speak Finnish and 5.3% speak Swedish as their mother tongue (Statistics Finland 2015). These are the languages that are predominant in the health care sector as well. Despite having brochures available in different languages in the health facilities, they are very basic and do not provide detailed information regarding diagnosis and treatment. Due to the language inefficiency, they are not able to explain their condition and perceive the advice and treatment properly. Lack of communication, misunderstanding and misinterpretation are major effects of the language barrier. This creates a big problem for the immigrant patients. Also, many health care providers are not proficient in other languages (for example English), which adds to the predicament. There have been studies that have suggested that immigrants living in Finland experienced difficulties due to communication barriers and cultural differences while accessing

health care (Degni et al. 2006). If health care services are provided in English language as well, it might help the immigrant patients to a great extent (Karanja 2013). Although, if all immigrants are provided services in the English language, problems may occur for the elderly immigrants and those not fluent in English.

Using professional interpreters can be an effective option to improve the quality of care and patient-provider satisfaction (Garcia et al. 2004). However, there are still chances that the patients might be hesitant to share their health condition and insecurities to a translator. For example, they might have a fear of word being spread in the community or lack of trust issues, which might create a barrier in the overall treatment procedure. Thus, health care providers should have the knowledge and skills to manage this kind of situation (Pitkin et al. 2007).

### 2.4.3. Culture

Culture is defined as "the ideas, customs, and social behavior of a particular people or society" (Oxford Dictionary). Different people with different cultural background often tend to have some preconceived notions about the other. In a clinical setting, while providing service to a foreign national, it is very likely that both physicians and patients may face the intercultural situation. It is very important that in such situations the health care providers do not get affected with the cultural stereotype. An integral part of health care is the patient-health care provider relationship and culture adds another dimension to this. A patient's physical and mental wellbeing can be affected by an efficacious intercultural communication. Cultural sensitivity is one topic that needs to be taken into consideration, as it can often lead to miscommunication, resulting in misdiagnosis and treatment and further add to the stress and dissatisfaction (Ulrey & Amason 2001).

Due to the social instabilities and violence experienced in their part of the world, many immigrants tend to be quite vulnerable to the social as well as the health challenges (Degni et al. 2012). Various factors such as communicative culture, interpersonal contacts, personality, identity, socialization, linguistic skills and gender differences, play very important roles in the patient-provider relationship (Street 2002).

Biased notions due to cultural beliefs and ideals lead to distrust between patient and practitioner in health setting. In order to bridge this cultural gap, an apt mediator could be appointed who is sensitive of both cultural values and norms. This might help build healthy relationships between patient and practitioner and also increase confidence of the patients towards the health system. Verified proofs are available which show that interpreters not only act as mediators between the diverse cultures but also help doctors and patients prepare and follow treatment plans (Betancourt & Jacobs 2000).

### 2.4.4. Length of stay

The duration of stay in the host country has been found to be related to better health care utilization pattern of the migrant population. Several studies have suggested that utilization pattern changes with the length of stay. For example, new immigrants utilize more emergency care services than primary care services, and with time and understanding of the health care system of the country, this changes (Norredam et al. 2004; Cots et al. 2007; Dias et al. 2008). Leduc and Proulx (2004), concluded that as the duration of stay prolongs, utilization of primary healthcare service changes gradually, transcending from use of walk-in service to regular care service.

### 2.4.5. Gender

In a study by Dearborn et al. (2006), gender was found to influence communication effectiveness. Conceptual barriers grounded on sociocultural factors, for example provider's gender, were found to influence the religious beliefs and attitudes of some Somali women (Haegert 2000).

Several studies have found that males and females have different healthcare service utilization rate. More females reportedly utilized the health care service in past 12 months (Fenta et al. 2007, Leclere et al. 1994).

According to Somali women, health and illness comprised of social and general life practices rather than discrete and individual experiences. Hence, they hope that the health care providers hold a comprehensive, circumstantial and environmental perception on health (Pavlish et al. 2010).

Similarly, in a study conducted in Canada among immigrant women, they pointed out that healthcare providers did not put much of an effort to take their culture, beliefs and ideologies into consideration while interacting. They further regarded the healthcare providers to be insensitive when the point of view related to health collided (Weerasinghe & Mitchell 2007).

### 2.5. Summary

Health care consists of several aspects, mainly availability, accessibility, and utilization. In turn, there are various socioeconomic factors, which affects it directly and/or indirectly. With the world population being so much in the move now than ever, it is very important to have a health care system that provides proper accessibility and utilization environment for a wider range of population. It is very fundamental in achieving an equitable health care environment. Finland has had an increase in its immigrant population, especially in the last few years, with people from different countries now forming a considerable part of its population. A study like this helps provide information to analyze and understand the existing real world scenario, thus helping to form an equitable health care system in the country.

# 3. OBJECTIVES OF THE STUDY

## 3.1. General objective

The aim of this study was to assess the socioeconomic status and health care services' accessibility and utilization by the Russian, Somali and Kurdish immigrants in Finland.

## 3.2. Specific objectives

The specific aims of the study were:

- To describe the accessibility and utilization of health care services
- To describe the experiences in using health care services
- To determine the factors affecting utilization
- To analyze the association of socioeconomic factors with the availability and utilization of health care services and experiences

# 4. METHODOLOGY

## 4.1. Study design

This was a cross-sectional study based on Immigrant health and welfare study (Maamu) conducted from 2010 to 2012. The study was carried out to gain information about the health status of the immigrants in Finland as well as the factors affecting it. The study sites were Helsinki, Espoo, Vantaa, Turku, Tampere, and Vaasa.

Maamu Study was coordinated by the National Institute for Health and Welfare (THL), in cooperation with the municipalities where the study was conducted, along with The Centre for Torture Survivors in Finland, The Ministry of Social Affairs and Health, The Family federation, the Finnish Institute of Occupational Health and Statistics Finland. Social Insurance Institution of Finland (KELA), European Social Fund (ESF), the Finnish Work Environment Fund, THL and municipalities funded the project.

The consent to use the data in this study was provided by THL.

## 4.2. Participants

The study group comprised of 18 to 64-year old Russian, Somali and Kurdish adults. The sample size was 3000 participants (1000 from each sub-groups) randomly selected from population register. The inclusion criteria were the following: country of birth (Somalia, Iran/Iraq, or Russia); native language (Somali, Kurdish and Russian / Finnish); and at least one year of residence in Finland. A detailed information on the participant numbers is provided in Appendix I.

## 4.3. Description of the data

The data in the study were collected by bilingual fieldwork personnel recruited and trained by THL. It consisted of computer assisted structured interview (60-90 minutes), a health examination (45-60 minutes), a short interview for those refusing or not able to participate in the longer

interview (15-20 minutes), and included the following modules: background information; health, disease and symptoms; discrimination and violence and health services.

Table 1 Variables used

| **Socio-economic Variables** | **Health Accessibility Variables** |
|---|---|
| Age | Self-reported health status |
| Gender | Barriers to treatment of diseases |
| Duration of stay in Finland | Service availability and accessibility |
| Finnish citizenship | Visit to outpatient department |
| Nationality | Discrimination in health care services |
| Religion | Trust in public health care |
| Marital status | |
| Residence | |
| Language | |
| Education | |
| Employment status | |
| Income | |

### 4.4. Statistical analysis

The analyses were performed using IBM SPSS Statistics version 19. Demographic characteristics were reported as frequency and percentage. Association between variables were analyzed using chi-square test.

# 5. RESULTS

## 5.1. Demographic characteristics

The study comprised of 3000 participants, 1000 each from the three population sub-groups - Russian, Somali and Kurdish. There were more male participants in the Kurdish group than females, whereas there were more female participants in the Russian and Somali population. Majority of the population belonged to the age group of 25-34 years (29.3%). The duration of stay in Finland in majority of the population was within 6-10 years (24.8%), closely followed by 11-15 years (24.7%). More Russians (48.0%) and Kurdish (47.0%) than Somali (38.9%) held Finnish citizenship. More Somali (98.8%) and Kurdish (75.0%) followed Islam, while more Russians followed Christianity (63.0%). Most of the Somali (64.4%), followed by Kurdish (57.7%) and Russian (55.2%) were married. More Somali (97.7%) were found to be living in rented apartment, compared to Kurdish (87.2%) and Russian (63.8%).

Table 2 Demographic characteristics

| **Variables** | **Russian n (%)** | **Somali n (%)** | **Kurdish n(%)** | **Total n (%)** |
|---|---|---|---|---|
| **Gender (n=3000)** | | | | |
| Male | 378 (37.8) | 469 (46.9) | 574 (57.4) | 1421(47.4) |
| Female | 622(62.2) | 531(53.1) | 426(42.6) | 1579(52.6) |
| Total | 1000(100.0) | 1000(100.0) | 1000 (100.0) | 3000 (100.0) |
| **Age category (n=3000)** | | | | |
| 15-24 | 136(13.6) | 268(26.8) | 229(22.9) | 633(21.1) |
| 25-34 | 261(26.1) | 299(29.9) | 318(31.8) | 878(29.3) |
| 35-44 | 212(21.2) | 238(23.8) | 241(24.1) | 691(23.0) |
| 45-54 | 249(24.9) | 144(14.4) | 171(17.1) | 564(18.8) |
| ≥55 | 142(14.2) | 51(5.1) | 41(4.1) | 234(7.8) |
| Total | 1000(100.0) | 1000(100.0) | 1000(100.0) | 3000(100.0) |
| **Length of stay in Finland (years) (n=1783)** | | | | |
| ≤5 | 138(20.0) | 123(25.6) | 123(20.1) | 384(21.5) |
| 6-10 | 147(21.3) | 115(23.9) | 181(29.6) | 443(24.8) |
| 11-15 | 179(25.9) | 92(19.1) | 170(27.8) | 441(24.7) |
| 16-20 | 174(25.2) | 109(22.7) | 113(18.5) | 396(22.2) |
| 21-25 | 47(6.8) | 41(8.5) | 25(4.1) | 113(6.3) |
| ≥26 | 5(0.7) | 1(0.2) | 0(0) | 6(0.3) |
| Total | 690(100.0) | 481 (100.0) | 612 (100.3) | 1783 (100.0) |

| Variables | Russian n (%) | Somali n (%) | Kurdish n(%) | Total n (%) |
|---|---|---|---|---|
| **Country of birth if not Finland (n=3000)** | | | | |
| Iran | 0 (0.0) | 0 (0.0) | 381 (38.1) | 381 (12.7) |
| Iraq | 0 (0.0) | 0 (0.0) | 619(61.9) | 619(20.6) |
| Russian Federation | 72(7.2) | 0 (0.0) | 0 (0.0) | 72(2.4) |
| Somalia | 0 (0.0) | 1000 (100.0) | 0 (0.0) | 1000(33.3) |
| USSR | 928(92.8) | 0 (0.0) | 0 (0.0) | 92.8(30.9) |
| Total | 1000(100.0) | 1000(100.0) | 1000(100.0) | 3000(100.0) |
| **Finnish citizenship (n=1783)** | | | | |
| No | 358(52.0) | 294(61.1) | 325(53.0) | 977(54.8) |
| Yes | 331(48.0) | 187(38.9) | 288(47.0) | 806(45.2) |
| Total | 689(100.0) | 481 (100.0) | 613(100.0) | 1783 (100.0) |
| **Perceived citizenship (n=1375)** | | | | |
| Russian | 324 (61.7) | 2 (0.6) | 5(1.0) | 331(24.1) |
| Somali | 0(0) | 308(89.3) | 2(0.4) | 310(22.5) |
| Kurdish | 0(0) | 0(0) | 318(63.0) | 318(23.1) |
| Iranian | 0(0) | 0(0) | 38(7.5) | 38(2.8) |
| Iraqi | 0(0) | 0(0) | 17(3.4) | 17(1.2) |
| Finnish | 71(13.5) | 33(9.6) | 9(1.8) | 113(8.2) |
| Some other country | 34(6.5) | 0(0) | 1(0.2) | 35(2.5) |
| Don’t feel belong to any citizenship | 46(8.8) | 0(0) | 6(1.2) | 52(3.8) |
| Feel like citizen of more than one country | 50(9.5) | 2(0.6) | 109(21.6) | 161(11.7) |
| Total | 525(100.0) | 345(100.0) | 505(100.0) | 1375(100.0) |
| **Religious group (n=1379)** | | | | |
| None | 176(33.4) | 3(0.9) | 101(19.9) | 280(20.3) |
| Christianity | 332(63.0) | 1(0.3) | 7(1.4) | 340(24.7) |
| Islam | 3(0.6) | 341(98.8) | 380(75.0) | 724(52.5) |
| Jewish | 2(0.4) | 0(0) | 1(0.2) | 3(0.2) |
| Others | 14(2.7) | 0(0) | 18(3.6) | 32(2.3) |
| Total | 527(100.0) | 345(100.0) | 507(100.0) | 1379(100.0) |
| **Marital status (n=1784)** | | | | |
| Married or in registered partnership | 381(55.2) | 310(64.4) | 354(57.7) | 1045(58.6) |
| Cohabiting | 64(9.3) | 10(2.1) | 69(11.3) | 143(8.0) |
| Divorced or separated | 114(16.5) | 51(10.6) | 33(5.4) | 198(11.1) |
| Widow | 16(2.3) | 14(2.9) | 25(4.1) | 55(3.1) |
| Unmarried | 115(16.7) | 96(20.0) | 132(21.5) | 343(19.2) |
| Total | 690(100.0) | 481(100.0) | 613(100.0) | 1784(100.0) |

### 5.2. Socioeconomic characteristics

Table 3 shows the analysis of socioeconomic characteristics. 94.5% of the study participants said they were familiar with the Finnish language, 2% said they were familiar with Swedish, while 3.4% said they did not know either of the language. Out of 1717 participants who said they were familiar with either language, those who could understand, speak, read and write the Finnish/Swedish language well were 50.6% (n=1717), 45.4% (n=1693), 47.8% (n=1330) and 40.0% (n=1329) respectively. 69.7% participants had completed a vocational degree in Finland compared to a university degree (20.7%) or polytechnic degree (9.5%). More Kurdish (85.0%) had received vocational degree compared to Somali (65.8%) and Russian (62.5%). While outside Finland, 45.6% had completed a university degree, followed by vocational degree (40.4%) and polytechnic degree (9.1%).

The full time employed participants were 34.3%, with more Russians (48.4%) holding full time jobs than Kurdish (31.1%) and Somali (17.9%), while 21.8% participants were unemployed or laid off, with Kurdish (25.4%) followed by Russian (20.1%) and Somali (19.7%). 49.0% of the participants had monthly household earning between 850-2500€, 31.4% with less than 850€ and only 19.6% with more than 2500€. 42.5% participants said that the expenditure coverage was easy with their income, while around 57.5% said it was difficult.

Table 3 Socioeconomic Characteristics

| **Variables** | **Russian n (%)** | **Somali n (%)** | **Kurdish n (%)** | **Total n (%)** |
|---|---|---|---|---|
| **Mother tongue (n=1785)** | | | | |
| Somali | 1(0.1) | 480(99.4) | 3(0.5) | 484(27.1) |
| Russian | 643(93.5) | 1(0.2) | 6(1.0) | 650(36.4) |
| Kurdish | 1(0.1) | 0(0) | 576(93.8) | 577(32.3) |
| Farsi | 0(0) | 0(0) | 4(0.7) | 4(0.2) |
| Arabic | 1(0.1) | 0(0) | 2(0.3) | 3(0.2) |
| Finnish | 36(5.2) | 2(0.4) | 1(0.2) | 39(2.2) |
| Others | 6(0.9) | 0(0) | 1(0.2) | 7(0.4) |
| other language spoken by Kurdish group | 0(0) | 0(0) | 21(3.4) | 21(1.2) |
| Total | 688(100.0) | 483(100.0) | 614(100.0) | 1785(100) |

| Variables | Russian n (%) | Somali n (%) | Kurdish n (%) | Total n (%) |
|---|---|---|---|---|
| **Language proficiency (n=1778)** | | | | |
| Finnish | 661(96.1) | 440(92.1) | 580(94.8) | 1681(94.5) |
| Swedish | 14(2.0) | 3(0.6) | 19(3.1) | 36(2.0) |
| Neither | 13(1.9) | 35(7.3) | 13(2.1) | 61(3.4) |
| Total | 688(100.0) | 478(100.0) | 612(100.0) | 1778(100.0) |
| **Understand spoken Finnish/Swedish (n=1717)** | | | | |
| Not at all | 3(0.4) | 4(0.9) | 15(2.5) | 22(1.3) |
| Poorly | 61(9.0) | 64(14.4) | 74(12.4) | 199(11.6) |
| Moderately | 228(33.7) | 148(33.4) | 252(42.1) | 628(36.6) |
| Well | 384(56.8) | 227(51.2) | 257(43.0) | 868(50.6) |
| Total | 676(100.0) | 443(100.0) | 598(100.0) | 1717(100.0) |
| **Speak Finnish/Swedish (n=1693)** | | | | |
| Not at all | 6(0.9) | 1(0.2) | 8(1.4) | 15(0.9) |
| Poorly | 84(12.5) | 73(16.7) | 87(14.9) | 244(14.4) |
| Moderately | 268(39.8) | 144(33.0) | 253(43.4) | 665(39.3) |
| Well | 315(46.8) | 219(50.1) | 235(40.3) | 769(45.4) |
| Total | 673(100.0) | 437(100.0) | 583(100.0) | 1693(100.0) |
| **Read Finnish/Swedish (n=1330)** | | | | |
| Not at all | 2(0.4) | 2(0.6) | 7(1.4) | 11(0.8) |
| Poorly | 58(11.2) | 55(17.3) | 74(14.9) | 187(14.1) |
| Moderately | 168(32.6) | 107(33.6) | 221(44.6) | 496(37.3) |
| Well | 288(55.8) | 154(48.4) | 194(39.1) | 636(47.8) |
| Total | 516(100.0) | 318(100.0) | 496(100.0) | 1330(100.0) |
| **Write Finnish/Swedish (n=1329)** | | | | |
| Not at all | 12(2.3) | 2(0.6) | 7(1.4) | 21(1.6) |
| Poorly | 78(15.1) | 58(18.3) | 94(19.0) | 230(17.3) |
| Moderately | 218(42.2) | 107(33.8) | 221(44.6) | 546(41.1) |
| Well | 208(40.3) | 150(47.3) | 174(35.1) | 532(40.0) |
| Total | 516(100.0) | 317(100.0) | 496(100.0) | 1329(100.0) |
| **Degree in Finland (n=694)** | | | | |
| Vocational degree | 232(62.5) | 77(65.8) | 175(85.0) | 484(69.7) |
| Polytechnic degree | 36(9.7) | 18(15.4) | 12(5.8) | 66(9.5) |
| University degree | 103(27.8) | 22(18.8) | 19(9.2) | 144(20.7) |
| Total | 371(100.0) | 117(100.0) | 206(100.0) | 694(100.0) |

| Variables | Russian n (%) | Somali n (%) | Kurdish n (%) | Total n (%) |
|---|---|---|---|---|
| **Degree elsewhere (n=540)** | | | | |
| Vocational degree | 148(39.3) | 8(19.5) | 62(50.8) | 218(40.4) |
| Polytechnic degree | 18(4.8) | 1(2.4) | 30(24.6) | 49(9.1) |
| University degree | 209(55.4) | 11(26.8) | 26(21.3) | 246(45.6) |
| Others | 2(0.5) | 21(51.2) | 4(3.3) | 27(5.0) |
| **Total** | 377(100.0) | 41(100.0) | 122(100.0) | 540(100.0) |
| **Main activity /occupation (n=1769)** | | | | |
| Full time employment | 334(48.4) | 84(17.9) | 190(31.1) | 608(34.34) |
| Part time work | 50(7.2) | 24(5.1) | 48(7.9) | 122(6.9) |
| Student | 101(14.6) | 145(31.0) | 128(20.9) | 374(21.1) |
| Retired | 10(1.4) | 13(2.8) | 21(3.4) | 44(2.5) |
| Unemployed or laid off | 139(20.1) | 92(19.7) | 155(25.4) | 386(21.8) |
| Housewife/houseman | 49(7.1) | 93(19.9) | 57(9.3) | 199(11.2) |
| Others | 7(1.0) | 17(3.6) | 12(2.0) | 36(2.0) |
| Total | 690(100.0) | 468(100.0) | 611(100.0) | 1769(100.0) |
| **Home ownership (n=1375)** | | | | |
| Own apartment | 188(25.8) | 6(1.8) | 63(12.4) | 257(18.7) |
| Rental apartment | 335 (63.8) | 334(97.7) | 443(87.2) | 1112(80.9) |
| Somewhere else | 2(0.4) | 2(0.6) | 2(0.4) | 6(0.4) |
| Total | 525(100.0) | 342(100.0) | 508(100.0) | 1375(100.0) |
| **Household income/month (n=1302)** | | | | |
| <850 € | 97(18.7) | 159(53.5) | 153(31.5) | 409(31.4) |
| 850-2500 € | 238(45.9) | 114(38.4) | 286(58.8) | 638(49.0) |
| >2500 € | 184(35.5) | 24(8.1) | 47(9.7) | 255(19.6) |
| Total | 519(100.0) | 297(100.01) | 486(100.0) | 1302(100.0) |
| **Income coverage (n=1735)** | | | | |
| Very difficult | 42(6.2) | 73(16.2) | 147(24.3) | 262(15.1) |
| Difficult | 111(16.3) | 128(28.4) | 155(25.6) | 394(22.7) |
| Pretty difficult | 146(21.5) | 100(22.2) | 95(15.7) | 341(19.7) |
| Pretty easy | 234(34.5) | 87(19.3) | 117(19.3) | 438(25.2) |
| Easy | 115(16.9) | 53(11.8) | 76(12.6) | 244(14.1) |
| Very easy | 31(4.6) | 10(2.2) | 15(2.5) | 56(3.2) |
| Total | 679(100.0) | 451(100.0) | 605(100.0) | 1735(100.0) |

### 5.3. Accessibility and utilization of healthcare services

Table 4 shows that among the three groups, more Kurdish (34.1%) had a particular doctor whom they usually go to than those of Russian and Somali (p<0.001). Out of those who had a particular doctor, Kurdish (100%) and Somali (98.4%) had more often a Finnish doctor than that of Russian (p<0.001).

It was found that there was no statistically significant difference on having a particular nurse they go to (p=0.399). Similarly, no statistically significant difference was found regarding the country where the nurse belonged to (p=0.060).

In the last 12 months' period, Russians (68.8%) and Kurdish (66.6%) were found to be visiting the doctor more often than the Somali (50.1%) (p<0.001). Similarly, the doctor visit outside Finland was more in Russians (17.7%), followed by Kurdish (7.5%) and Somali (1.7%) (p<0.001).

The analysis of reasons for doctor visit outside Finland showed that having a familiar doctor was a statistically significant reason for the Russians (46.2%), followed by Kurdish (17.9%) than Somali (0%) (p=0.007). However, better treatment, no language problem, quick access, and cheap cost were not found to be significantly different reasons among the three population groups.

Table 4 Accessibility and utilization

| Variables | Russian n (%) | Somali n (%) | Kurdish n (%) | p-value | Total n (%) |
|---|---|---|---|---|---|
| **Access to a certain doctor (n=1374)** | | | | | |
| No | 356(67.3) | 273(80.8) | 334(65.9) | <0.001 | 963(70.1) |
| Yes | 173(32.7) | 65(19.2) | 173(34.1) | | 411(29.9) |
| Total | 529(100.0) | 338(100.0) | 507(100.0) | | 1374(100.0) |
| **In which country (n=407)** | | | | | |
| Finland | 155(90.1) | 63(98.4) | 171(100.0) | <0.001 | 989(95.6) |
| Other | 17(9.9) | 1(1.6) | 0(0) | | 18(4.4) |
| Total | 172(100.0) | 64(100.0) | 171(100.0) | | 407(100.0) |

| Variables | Russian n (%) | Somali n (%) | Kurdish n (%) | p-value | Total n (%) |
|---|---|---|---|---|---|
| **Access to a certain nurse (n=1370)** | | | | | |
| No | 463(87.7) | 283(84.5) | 436(86.0) | 0.399 | 1182(86.3) |
| Yes | 65(12.3) | 52(15.5) | 71(14.0) | | 188(13.7) |
| Total | 528(100.0) | 335(100.0) | 507(100.0) | | 1370(100.0) |
| **Which country (n=184)** | | | | | |
| Finland | 58(89.2) | 50(98.0) | 66(97.1) | 0.060 | 174(94.6) |
| Other | 7(10.8) | 1(2.0) | 2(2.9) | | 10(5.4) |
| Total | 65(100.0) | 51(100.0) | 68(100.0) | | 184(100.0) |
| **Doctor visit/12 month (n=1779)** | | | | | |
| No | 215(31.5) | 237(49.9) | 205(33.4) | <0.001 | 657(36.9) |
| Yes | 475(68.8) | 238(50.1) | 409(66.6) | | 1122(63.1) |
| Total | 690(100.0) | 475(100.0) | 614(100.0) | | 1779(100.0) |
| **Doctor visit/12 month (abroad) (n=1777)** | | | | | |
| No | 567(82.3) | 466(98.3) | 568(92.5) | <0.001 | 1601(90.1) |
| Yes | 122(17.7) | 8(1.7) | 46(7.5) | | 176(9.9) |
| Total | 689(100.0) | 474(100.0) | 614(100.0) | | 1777(100.0) |
| **Reason for abroad doctor visit/12 months:** | | | | | |
| **Familiar doctor (n=131)** | | | | | |
| No | 49(53.8) | 1(100.0) | 32(82.1) | 0.007 | 82(62.6) |
| Yes | 42(46.2) | 0(0) | 7(17.9) | | 46(37.4) |
| Total | 91(100.0) | 1(100.0) | 39(100.0) | | 131(100.0) |
| **Better treatment (n=126)** | | | | | |
| No | 42(48.8) | 1(100.0) | 19(48.7) | 0.594 | 62(49.2) |
| Yes | 44(51.2) | 0(0) | 20(51.3) | | 64(50.8) |
| Total | 86(100.0) | 1(100.0) | 39(100.0) | | 126(100.0) |
| **No language problem (n=131)** | | | | | |
| No | 39(42.9) | 1(100.0) | 24(61.5) | 0.088 | 64(48.9) |
| Yes | 52(57.1) | 0(0) | 15(38.5) | | 67(51.1) |
| Total | 91(100.0) | 1(100.0) | 39(100.0) | | 131(100.0) |
| **Quick access (n=131)** | | | | | |
| No | 42(46.2) | 1(100.0) | 18(46.2) | 0.561 | 61(46.6) |
| Yes | 49(53.8) | 0(0) | 21(53.8) | | 70(53.4) |
| Total | 91(100.0) | 1(100.0) | 39(100.0) | | 131(100.0) |
| **Cheaper (n=129)** | | | | | |
| No | 40(44.9) | 1(100.0) | 22(56.4) | 0.289 | 63(48.8) |
| Yes | 49(55.1) | 0(0) | 17(43.6) | | 66(51.2) |
| Total | 89(100.0) | 1(100.0) | 39(100.0) | | 129(100.0) |

### 5.4. Experience of healthcare service utilization

More Somali (63.5%) were found to have full confidence in the public health care than Kurdish (53.5%) and Russian (19.2), while 6.7% of the Kurdish said they had no trust at all in the health care, followed by 3.6% Somali and 2.9% Russian ($p<0.001$). There was no statistically significant difference in the experience all three population groups had in terms of discrimination in health care with 10.4% Russians, 7.5% Somali and 9.3% Kurdish saying they have experienced discrimination ($p=0.361$) (Table 5).

Health care center was the place visited most by the Somali (88.5%), followed by Kurdish (66.0%) and Russian (46.0%), whereas private clinics were visited more by Russians (12.5%), followed by Kurdish (3.3%) and Somali (2.2%) ($p<0.001$).

A highly significant difference was observed in the opinion regarding the visit to the health center. More than 80% of the Somali responded that they get quicker access to treatment, had received adequate information about the current health condition and its treatment, and were listened to and shown interest in by the health care provider. It was observed that Kurdish and Russian had less positive responses in those questions. Similar pattern was observed in terms of ability to influence the treatment, and being benefited from the visit (Table 5).

More Kurdish (74.6%) followed by Russian (49.1%) and Somali (38.8%) said they needed interpretation during the doctor visit ($p<0.001$).

Table 5 Experience of health care utilization

| **Variables** | **Russian n (%)** | **Somali n (%)** | **Kurdish n (%)** | **p-value** | **Total n (%)** |
|---|---|---|---|---|---|
| **Trust in health care (n=1362)** | | | | | |
| Not at all | 15(2.9) | 12(3.6) | 34(6.7) | <0.001 | 61(4.5) |
| A little | 177(34.0) | 39(11.7) | 86(17.0) | | 302(22.2) |
| Quite a lot | 229(44.0) | 71(21.3) | 116(22.9) | | 416(30.5) |
| Full confidence | 100(19.2) | 212(63.5) | 271(53.5) | | 583(42.8) |
| Total | 521(100.0) | 334(100.0) | 507(100.0) | | 1362(100.0) |

| Variables | Russian n (%) | Somali n (%) | Kurdish n (%) | p-value | Total n (%) |
|---|---|---|---|---|---|
| **Discrimination in health care (n=1370)** | | | | | |
| No | 472(89.4) | 306(91.6) | 457(90.0) | 0.361 | 1235(90.1) |
| Yes | 55(10.4) | 25(7.5) | 47(9.3) | | 127(9.3) |
| No visit/not applicable to me | 1(0.2) | 3(0.9) | 4(0.8) | | 8(0.6) |
| Total | 528(100.0) | 334(100.0) | 508(100.0) | | 1370(100.0) |
| **Last doctor visit place in Finland (n=927)** | | | | | |
| Health care center | 173(46.0) | 162(88.5) | 243(66.0) | <0.001 | 578(62.4) |
| Hospital OPD | 38(10.1) | 7(3.8) | 71(19.3) | | 116(12.5) |
| Workplace occupational health care | 100(26.6) | 9(4.6) | 37(10.1) | | 146(15.7) |
| Private clinic/medical supervision | 47(12.5) | 4(2.2) | 12(3.3) | | 63(6.8) |
| Somewhere else | 18(4.8) | 1(0.5) | 5(1.4) | | 24(2.6) |
| Total | 376(100.0) | 183(100.0) | 368(100.0) | | 927(100.0) |
| **Opinion on health care center visit** | | | | | |
| **Quick access to treatment (n=925)** | | | | | |
| Fully agree | 253(67.5) | 157(86.3) | 266(72.3) | <0.001 | 676(73.1) |
| Partially agree | 72(19.2) | 15(8.2) | 47(12.8) | | 134(14.5) |
| Disagree | 50(13.3) | 10(5.5) | 55(14.9) | | 115(12.4) |
| Total | 375(100.0) | 182(100.0) | 368(100.0) | | 925(100.0) |
| **Adequate information provided (n=925)** | | | | | |
| Fully agree | 506(54.9) | 151(83.0) | 248(67.4) | <0.001 | 605(65.4) |
| Partially agree | 114(30.4) | 18(9.9) | 55(14.9) | | 187(20.2) |
| Disagree | 55(14.7) | 13(7.1) | 65(17.7) | | 133(14.4) |
| Total | 375(100.0) | 182(100.0) | 368(100.0) | | 925(100.00) |
| **Listened to and interest shown (n=927)** | | | | | |
| Fully agree | 251(66.6) | 155(85.2) | 279(75.8) | <0.001 | 685(73.9) |
| Partially agree | 94(24.9) | 18(9.9) | 62(16.8) | | 174(18.8) |
| Disagree | 32(8.5) | 9(4.9) | 27(7.3) | | 68(7.3) |
| Total | 377(100.0) | 182(100.0) | 368(100.0) | | 927(100.0) |
| **Able to influence treatment (n=906)** | | | | | |
| Fully agree | 178(50.0) | 145(79.7) | 255(69.3) | <0.001 | 578(63.8) |
| Partially agree | 82(23.0) | 22(12.1) | 66(17.9) | | 170(18.8) |
| Disagree | 96(27.0) | 15(8.2) | 47(12.8) | | 158(17.4) |
| Total | 356(100.0) | 182(100.0) | 368(100.0) | | 906(100.0) |

| Variables | Russian n (%) | Somali n (%) | Kurdish n (%) | p-value | Total n (%) |
|---|---|---|---|---|---|
| **Benefited from visit (n=912)** | | | | | |
| Fully agree | 197(54.3) | 143(78.6) | 216(58.9) | <0.001 | 556(61.0) |
| Partially agree | 92(25.3) | 19(10.4) | 66(18.0) | | 177(19.4) |
| Disagree | 74(20.4) | 20(11.0) | 85(23.2) | | 179(19.6) |
| Total | 363(100.0) | 182(100.0) | 367(100.0) | | 912(100.0) |
| **Need for interpretation on visit (n=171)** | | | | | |
| No | 28(50.9) | 30(61.2) | 17(25.4) | <0.001 | 75(43.9) |
| Yes | 27(49.1) | 19(38.8) | 50(74.6) | | 96(56.1) |
| Total | 55(100.0) | 49(100.0) | 67(100.0) | | 171(100.0) |

*OPD – Out Patient Department

### 5.5. Self-rated health status

Approximately half of the respondents reported to have a good self-rated health status while only 4.2% reported to have a poor one. More Somali (72.4%) reported to have good status as compared to Kurdish (50.6%) and Russian (42.4%), while only 8.0% Kurdish followed by 2.9% Russian and 1.2% Somali reported to have poor health status ($p<0.001$).

More Russians (33.0%) reported they had permanent or long-term illness as compared to 27.7% Kurdish and 13.5% Somali ($p<0.001$).

Table 6 Self-rated health status

| Variables | Russian n (%) | Somali n (%) | Kurdish n (%) | p-value | Total n (%) |
|---|---|---|---|---|---|
| **Self-rated health status (n=1786)** | | | | | |
| Good | 293(42.4) | 349(72.4) | 310(50.6) | <0.001 | 952(53.2) |
| Pretty good | 165(23.9) | 75(15.6) | 120(19.6) | | 360(20.2) |
| Medium | 191(27.6) | 43(8.9) | 76(12.4) | | 310(17.4) |
| Pretty bad | 22(3.2) | 9(1.9) | 58(9.5) | | 89(5.0) |
| Poor | 20(2.9) | 6(1.2) | 49(8.0) | | 75(4.2) |
| Total | 691(100.0) | 482(100.0) | 613(100.0) | | 1786(100.0) |
| **Permanent or long term-illness (n=1786)** | | | | | |
| No | 463(67.0) | 416(86.5) | 444(72.3) | <0.001 | 1323(74.1) |
| Yes | 228(33.0) | 65(13.5) | 170(27.7) | | 463(25.9) |
| Total | 691(100.0) | 481(100.0) | 614(100.0) | | 1786(100.0) |

### 5.6. Barriers to treatment

There was no statistically significant difference among the three population groups regarding various factors affecting access to treatment such as waiting in queue (p=0.067), transportation (p=0.083), suspicion or mistrust (p=0.221) and uncertainty/doubt (p=0.368). More Kurdish reported cost and language as a barrier compared to Russians, followed by Somali.

Table 7 Barriers to treatment

| Variables | Russian n (%) | Somali n (%) | Kurdish n (%) | P-value | Total n (%) |
|---|---|---|---|---|---|
| **Queue (n=267)** | | | | | |
| No | 43(43.9) | 3(42.9) | 94(58.4) | 0.067 | 140(52.6) |
| Yes | 55(56.1) | 4(57.1) | 67(41.6) | | 126(47.4) |
| Total | 98(100.0) | 7(100.0) | 161(100.0) | | 266(100.0) |
| **Transportation (n=267)** | | | | | |
| No | 96(97.0) | 7(100.0) | 145(90.1) | 0.083 | 248(92.9) |
| Yes | 3(3.0) | 0(0) | 16(9.9) | | 19(7.1) |
| Total | 99(100.0) | 7(100.0) | 161(100.0) | | 267(100.0) |
| **Cost (n=266)** | | | | | |
| No | 64(65.3) | 7(100.0) | 84(54.0) | 0.017 | 158(59.4) |
| Yes | 34(34.7) | 0(0) | 74(46.0) | | 108(40.6) |
| Total | 98(100.0) | 7(100.0) | 161(100.0) | | 266(100.0) |
| **Mistrust/suspicion (n=266)** | | | | | |
| No | 57(58.2) | 3(42.9) | 107(66.5) | 0.221 | 167(62.8) |
| Yes | 41(41.8) | 4(57.1) | 54(33.5) | | 99(37.2) |
| Total | 98(100.0) | 7(100.0) | 161(100.0) | | 266(100.0) |
| **Language (n=267)** | | | | | |
| No | 66(66.7) | 6(85.7) | 86(53.4) | 0.038 | 158(59.2) |
| Yes | 33(33.3) | 1(14.3) | 75(46.6) | | 109(40.8) |
| Total | 99(100.0) | 7(100.0) | 161(100.0) | | 267(100.0) |
| **Uncertainty (n=267)** | | | | | |
| No | 86(86.9) | 6(85.7) | 129(80.1) | 0.368 | 221(82.8) |
| yes | 13(13.1) | 1(14.3) | 32(19.9) | | 46(17.2) |
| Total | 99(100.0) | 7(100.0) | 161(100.0) | | 267(100.0) |
| **Others (n=267)** | | | | | |
| No | 52(52.5) | 5(71.4) | 144(89.4) | <0.001 | 201(75.3) |
| Yes | 47(47.5) | 2(28.6) | 17(10.6) | | 66(24.7) |
| Total | 99(100.0) | 7(100.0) | 161(100.0) | | 267(100.0) |

### 5.7. Association between access to a specified doctor and sociodemographic characteristics

Gender and access to a specified doctor was significantly associated among the Russians (0.026), Somali (p<0.001) and Kurdish (p=0.048). Age was found to be a significant factor regarding access to specified doctor in case of Russian (p=0.001), however, this was not the case in Somali and Kurdish group (Table 8).

Access to a specified doctor was not found to be associated with duration of stay, marital status, Finnish citizenship, education obtained in Finland, education obtained outside of Finland, and home ownership. However, income was found to be a significant factor in case of Somali (p=0.018) and Kurdish (p=0.039), but not in the Russian group. Also, knowing Finnish language was found to be positively associated with the access to a specified doctor in Russians (p=0.038).

Table 8 Association between access to a specified doctor and sociodemographic characteristics

| **Variables** | **Russian** | | **Somali** | | **Kurdish** | |
|---|---|---|---|---|---|---|
| | **Yes n (%)** | **p-value** | **Yes n (%)** | **p-value** | **Yes n (%)** | **p-value** |
| **Gender** | | 0.026 | | <0.001 | | 0.048 |
| Male | 50(28.9) | | 15(23.1) | | 84(48.6) | |
| Female | 123(71.1) | | 50(76.9) | | 89(51.4) | |
| **Age in years** | | 0.001 | | 0.840 | | 0.064 |
| 15-24 | 16(9.2) | | 16(24.6) | | 19(11.0) | |
| 25-34 | 28(16.2) | | 17(26.2) | | 48(27.7) | |
| 35-44 | 43(24.9) | | 15(23.1) | | 57(32.9) | |
| 45-54 | 48(27.7) | | 13(20.0) | | 41(23.7) | |
| ≥55 | 38(22.0) | | 4(6.2) | | 8(4.6) | |
| **Stay in Finland** | | 0.176 | | 0.470 | | 0.206 |
| ≤5 | 37(21.4) | | 18(27.7) | | 30(17.3) | |
| 6-10 | 28(16.2) | | 11(16.9) | | 47(27.2) | |
| 11-15 | 47(27.2) | | 16(24.6) | | 58(33.5) | |
| 16-20 | 43(24.9) | | 15(23.1) | | 32(18.5) | |
| ≥21 | 18(10.4) | | 5(7.7) | | 6(3.5) | |
| **Marital status** | | 0.271 | | 0.050 | | 0.072 |
| Married/registered partnership | 95(54.9) | | 42(66.7) | | 102(59.0) | |
| Cohabiting | 12(6.9) | | 0(0.0) | | 24(13.9) | |
| Divorced/separated | 36(20.8) | | 11(17.5) | | 7(4.0) | |
| Widow | 6(3.5) | | 2(3.2) | | 13(7.5) | |
| unmarried | 24(13.9) | | 8(12.7) | | 27(15.6) | |

| Variables | Russian | | Somali | | Kurdish | |
|---|---|---|---|---|---|---|
| | Yes n (%) | p-value | Yes n (%) | p-value | Yes n (%) | p-value |
| **Finnish citizenship** | | 0.555 | | 0.242 | | 0.844 |
| No | 92(53.2) | | 37(56.9) | | 94(54.3) | |
| Yes | 81(46.8) | | 28(43.1) | | 79(45.7) | |
| **Language proficiency** | | 0.038 | | 0.123 | | 0.952 |
| Finnish | 171(98.8) | | 58(89.2) | | 166(96.5) | |
| Swedish | 2(1.2) | | 0(0.0) | | 4(2.3) | |
| Do not know either language | 0(0.0) | | 7(10.8) | | 2(1.2) | |
| **Highest education in Finland** | | 0.160 | | 0.255 | | 0.257 |
| Vocational degree | 64(77.1) | | 7(87.5) | | 50(86.2) | |
| Polytechnic degree | 9(10.8) | | 1(12.5) | | 4(6.9) | |
| University degree | 10(12.0) | | 0(0) | | 4(6.9) | |
| **Highest degree elsewhere** | | 0.482 | | 0.457 | | 0.566 |
| Vocational degree | 54(406) | | 2(50.0) | | 19(45.2) | |
| Polytechnic degree | 9(6.8) | | 0(0.0) | | 13(31.0) | |
| University degree | 69(51.9) | | 1(25.0) | | 8(19.0) | |
| Others | 1(0.8) | | 1(25.0) | | 2(4.8) | |
| **Income (€/month)** | | 0.468 | | 0.018 | | 0.039 |
| <850 | 36(21.3) | | 21(38.9) | | 48(28.7) | |
| 850-2500 | 78(46.2) | | 30(55.6) | | 95(56.9) | |
| >2500 | 55(32.5) | | 3(5.6) | | 24(14.4) | |
| **Home ownership** | | 0.561 | | 0.775 | | 0.548 |
| Own apartment | 64(37.2) | | 1(1.5) | | 23(13.3) | |
| Rental apartment | 108(62.8) | | 64(98.5) | | 150(86.7) | |
| Somewhere else | 0(0.0) | | 0(0.0) | | 0(0.0) | |

### 5.8. Association between access to a specified nurse and sociodemographic characteristics

Table 9 shows females have more access to a specified nurse than males in Somali group ($p<0.001$), but not in the case of Russian and Kurdish. Length of stay was not found to make a difference among Somali and Kurdish group, however, it was significantly associated with the access in Russian group ($p=0.017$). Regarding education obtained outside of Finland, Russians were found to have more access to a specific nurse ($p=0.003$). Similarly, marital status was not found to be associated with accessibility in case of Kurdish and Somali group, but in case of

Russians, it was found that married population had more access to nurse (p=0.044). Having a Finnish citizenship was found to be significantly associated with access to a specified nurse (p=0.021) in the Russians.

The access to a specified nurse was not associated with age, language proficiency, education obtained in Finland, income and home ownership.

Table 9 Association between access to a specified nurse and sociodemographic characteristics

| **Variables** | **Russian** | | **Somali** | | **Kurdish** | |
|---|---|---|---|---|---|---|
| | **Yes n (%)** | **p-value** | **Yes n (%)** | **p-value** | **Yes n (%)** | **p-value** |
| **Gender** | | 0.384 | | <0.001 | | 0.218 |
| Male | 20(30.8) | | 12(23.1) | | 34(47.9) | |
| Female | 45(69.29) | | 40(76.9) | | 37(52.1) | |
| **Age in years** | | 0.659 | | 0.848 | | 0.452 |
| 15-24 | 11(16.9) | | 16(30.8) | | 10(14.1) | |
| 25-34 | 17(26.2) | | 12(23.1) | | 21(29.6) | |
| 35-44 | 10(15.4) | | 11(21.2) | | 27(38.0) | |
| 45-54 | 16(24.6) | | 10(19.2) | | 12(16.9) | |
| ≥55 | 11(16.9) | | 3(5.8) | | 1(1.4) | |
| **Stay in Finland** | | 0.017 | | 0.283 | | 0.740 |
| ≤5 | 11(16.9) | | 20(38.5) | | 16(22.5) | |
| 6-10 | 10(15.4) | | 9(17.3) | | 19(26.8) | |
| 11-15 | 15(23.1) | | 9(17.3) | | 22(31.0) | |
| 16-20 | 18(27.7) | | 13(25.0) | | 13(18.3) | |
| ≥21 | 11(16.9) | | 1(1.9) | | 1(1.4) | |
| **Marital status** | | 0.044 | | 0.131 | | 0.775 |
| Married / registered partnership | 30(46.2) | | 33(64.7) | | 42(59.2) | |
| Cohabiting | 12(18.5) | | 0(0.0) | | 9(12.7) | |
| Divorced/ separated | 11(16.9) | | 9(17.6) | | 3(4.2) | |
| Widow | 2(3.1) | | 9(3.2) | | 5(7.0) | |
| unmarried | 10(15.4) | | 7(13.7) | | 12(16.9) | |
| **Finnish citizenship** | | 0.021 | | 0.597 | | 0.441 |
| No | 27(41.5) | | 31(59.6) | | 42(59.2) | |
| Yes | 38(58.5) | | 21(40.4) | | 29(40.8) | |
| **Language proficiency** | | 0.888 | | 0.430 | | 0.545 |
| Finnish | 63(96.9) | | 50(96.2) | | 68(97.1) | |
| Swedish | 1(1.5) | | 0(0.0) | | 2(2.9) | |
| Do not know either language | 1(1.5) | | 2(3.8) | | 0(0.0) | |

| Variables | Russian | | Somali | | Kurdish | |
|---|---|---|---|---|---|---|
| | Yes n (%) | p-value | Yes n (%) | p-value | Yes n (%) | p-value |
| **Highest education in Finland** | | 0.068 | | 0.283 | | 0.118 |
| Vocational degree | 23(69.7) | | 4(100.0) | | 18(78.3) | |
| Polytechnic degree | 6(18.2) | | 0(0.0) | | 3(13.0) | |
| University degree | 4(12.1) | | 0(0.0) | | 2(8.7) | |
| **Highest degree elsewhere** | | 0.003 | | 0.457 | | 0.914 |
| Vocational degree | 28(65.1) | | 2(50.0) | | 6(50.0) | |
| Polytechnic degree | 1(2.3) | | 0(0.0) | | 3(25.0) | |
| University degree | 14(32.6) | | 1(25.0) | | 3(25.0) | |
| Others | 0(0.0) | | 1(25.0) | | 0(0.0) | |
| **Income** | | 0.611 | | 0.912 | | 0.121 |
| <850 | 12(18.8) | | 26(55.3) | | 21(31.3) | |
| 850-2500 | 26(40.6) | | 18(38.3) | | 35(52.5) | |
| >2500 | 26(40.6) | | 3(6.4) | | 11(16.4) | |
| **Home ownership** | | 0.234 | | 0.402 | | 0.404 |
| Own apartment | 25(38.5) | | 2(3.8) | | 12(16.9) | |
| Rental apartment | 39(60.0) | | 50(96.2) | | 59(83.1) | |
| Somewhere else | 1(1.5) | | 0(0.0) | | 0(0.0) | |

### 5.9. Association between doctor visit in last 12 months and demographic characteristics

Table 10 shows no significant association of doctor visit in last 12 months with length of stay in Finland, having a Finnish citizenship, language proficiency, education outside Finland and home ownership. However, associations were found regarding gender, age, marital status, education in Finland and income.

Females were found to be visiting doctors more than their male counterparts in case of Russians ($p<0.001$) and Somali ($p=0.002$), but not in the case of Kurdish group. Age, however, was found to be significantly associated in case of Kurdish ($p=0.026$), but not in case of Russian and Somali group. Marital status was found to be significantly associated in case of Somali ($p<0.001$) and Kurdish ($p=0.027$), but not in case of Russian group. Highest education received in Finland was a significant factor among Kurdish ($p=0.019$), but not in Russian and Somali group. However, income was found to be a significant factor in case of Somali ($p=0.005$) and not in Russian and Kurdish group.

Table 10 Association between doctor visit in last 12 months and sociodemographic characteristics

| Variables | Russian | | Somali | | Kurdish | |
|---|---|---|---|---|---|---|
| | Yes n (%) | p-value | Yes n (%) | p-value | Yes n (%) | p-value |
| **Gender** | | <0.001 | | 0.002 | | 0.082 |
| Male | 148(31.2) | | 91(38.2) | | 207(50.6) | |
| Female | 327(68.8) | | 147(61.8) | | 202(49.4) | |
| **Age in years** | | 0.140 | | 0.181 | | 0.026 |
| 15-24 | 50(10.5) | | 55(23.1) | | 59(14.4) | |
| 25-34 | 126(26.5) | | 70(29.4) | | 125(30.6) | |
| 35-44 | 112(23.6) | | 61(25.6) | | 123(30.1) | |
| 45-54 | 113(23.8) | | 37(15.5) | | 82(20.0) | |
| ≥55 | 74(15.6) | | 15(6.3) | | 20(4.9) | |
| **Stay in Finland** | | 0.943 | | 0.676 | | 0.434 |
| ≤5 | 93(19.6) | | 64(27.1) | | 84(20.6) | |
| 6-10 | 98(20.6) | | 51(21.6) | | 116(28.4) | |
| 11-15 | 125(26.3) | | 48(20.3) | | 118(28.9) | |
| 16-20 | 121(25.5) | | 54(22.9) | | 77(18.9) | |
| ≥21 | 38(8.0) | | 19(8.1) | | 13(3.2) | |
| **Marital status** | | 0.342 | | <0.001 | | 0.027 |
| Married / registered partnership | 257(54.1) | | 171(72.2) | | 248(60.8) | |
| Cohabiting | 46(9.7) | | 2(0.8) | | 49(12.0) | |
| Divorced/ separated | 85(17.9) | | 25(10.5) | | 20(4.9) | |
| Widow | 13(2.7) | | 8(3.4) | | 18(4.4) | |
| Unmarried | 74(15.6) | | 31(13.1) | | 73(17.9) | |
| **Finnish citizenship** | | 0.309 | | 0.883 | | 0.772 |
| No | 241(50.7) | | 146(61.6) | | 218(53.4) | |
| Yes | 234(49.3) | | 91(38.4) | | 190(46.6) | |
| **Language proficiency** | | 0.196 | | 0.327 | | 0.872 |
| Finnish | 458(96.6) | | 214(90.7) | | 388(95.1) | |
| Swedish | 10(2.1) | | 1(0.4) | | 12(2.9) | |
| Do not know either language | 6(1.3) | | 21(8.9) | | 8(2.0) | |
| **Highest education in Finland** | | 0.500 | | 0.239 | | 0.019 |
| Vocational degree | 154(60.6) | | 27(57.4) | | 109(87.9) | |
| Polytechnic degree | 25(9.8) | | 8(17.0) | | 9(7.3) | |
| University degree | 75(29.5) | | 12(25.5) | | 6(4.8) | |
| **Highest degree elsewhere** | | 0.482 | | 0.193 | | 0.725 |
| Vocational degree | 102(37.6) | | 4(14.8) | | 44(50.6) | |

| Variables | Russian | | Somali | | Kurdish | |
|---|---|---|---|---|---|---|
| | Yes n (%) | p-value | Yes n (%) | p-value | Yes n (%) | p-value |
| Polytechnic degree | 15(5.5) | | 0(0.0) | | 21(24.1) | |
| University degree | 153(56.5) | | 7(25.9) | | 20(23.0) | |
| Others | 1(0.4) | | 16(59.3) | | 2(2.3) | |
| **Income** | | 0.366 | | 0.005 | | 0.422 |
| <850 | 71(19.0) | | 76(46.1) | | 111(31.4) | |
| 850-2500 | 164(44.0) | | 72(43.6) | | 205(57.9) | |
| >2500 | 138(37.0) | | 17(10.3) | | 38(10.7) | |
| **Home ownership** | | 0.233 | | 0.157 | | 0.749 |
| Own apartment | 142(37.7) | | 4(2.2) | | 45(12.2) | |
| Rental apartment | 233(61.8) | | 178(97.8) | | 323(87.5) | |
| Somewhere else | 2(0.5) | | 0(0.0) | | 1(0.3) | |

### 5.10. Association between trust in public health care and sociodemographic characteristics

No association was found between trust in public health care and Finnish citizenship, education in Finland, education outside Finland, income and home ownership. However, a significant association was observed with gender, age, duration of stay in Finland, marital status and language proficiency (Table 11).

Gender was found to be a factor affecting the trust one had in public health care in Russian (p=0.009) and Somali (p=0.028) but not in Kurdish. Females showed more trust in the health care than males. Age was found to be a significant factor in case of Russians (p=0.034), but not in Somali and Kurdish group. Length of stay was found to be a significant factor only in case of Kurdish (p=0.031). Marital status was found to be significant in case of Kurdish (p=0.041) and Russian (p=0.021) but not Somali group. However, language proficiency was a significant factor in the Somali (p=0.026), but not in the Russian and Kurdish group.

Table 11 Association between trust in public health care and sociodemographic characteristics

| Variables | Russian | | Somali | | Kurdish | |
|---|---|---|---|---|---|---|
| | Yes n (%) | p-value | Yes n (%) | p-value | Yes n (%) | p-value |
| **Gender** | | 0.009 | | 0.028 | | 0.425 |
| Male | 130(39.5) | | 136(48.1) | | 216(55.80) | |
| Female | 199(60.5) | | 147(51.9) | | 171(44.2) | |
| **Age in years** | | 0.034 | | 0.408 | | 0.465 |
| 15-24 | 51(15.5) | | 85(30.0) | | 65(16.8) | |

| Variables | Russian | | Somali | | Kurdish | |
|---|---|---|---|---|---|---|
| | Yes n (%) | p-value | Yes n (%) | p-value | Yes n (%) | p-value |
| 25-34 | 83(25.2) | | 81(28.6) | | 121(31.3) | |
| 35-44 | 63(19.1) | | 61(21.6) | | 111(28.7) | |
| 45-54 | 74(22.5) | | 41(14.5) | | 72(18.6) | |
| ≥55 | 58(17.6) | | 15(5.3) | | 18(4.7) | |
| **Stay in Finland** | | 0.654 | | 0.726 | | 0.031 |
| ≤5 | 74(22.5) | | 86(30.5) | | 84(21.8) | |
| 6-10 | 74(22.5) | | 69(24.5) | | 119)30.8) | |
| 11-15 | 82(24.9) | | 48(17.0) | | 111(28.8) | |
| 16-20 | 73(22.2) | | 59(20.9) | | 61(15.8) | |
| ≥21 | 26(7.9) | | 20(7.1) | | 11(2.8) | |
| **Marital Status** | | 0.021 | | 0.265 | | 0.041 |
| Married / registered partnership | 177(53.8) | | 183(64.9) | | 220(56.8) | |
| Cohabiting | 26(7.9) | | 4(1.4) | | 49(12.7) | |
| Divorced/ separated | 53(16.1) | | 23(8.2) | | 13(3.4) | |
| Widow | 5(1.5) | | 9(3.2) | | 21(5.4) | |
| Unmarried | 68(20.7) | | 63(22.3) | | 84(21.7) | |
| **Finnish citizenship** | | 0.462 | | 0.465 | | 0.381 |
| No | 184(55.9) | | 181(64.2) | | 217(56.2) | |
| Yes | 145(44.1) | | 101(35.8) | | 169(43.8) | |
| **Language proficiency** | | 0.142 | | 0.026 | | 0.697 |
| Finnish | 319(97.3) | | 267(94.7) | | 372(96.6) | |
| Swedish | 5(1.5) | | 0(0.0) | | 8(2.1) | |
| Do not know either language | 4(1.2) | | 15(5.3) | | 5(1.3) | |
| **Highest education in Finland** | | 0.542 | | 0.572 | | 0.827 |
| Vocational degree | 106(72.6) | | 33(63.5) | | 106(89.8) | |
| Polytechnic degree | 11(7.5) | | 9(17.3) | | 7(5.9) | |
| University degree | 29(19.9) | | 10(19.2) | | 5(4.2) | |
| **Highest degree elsewhere** | | 0.967 | | 0.226 | | 0.431 |
| Vocational degree | 87(39.0) | | 4(13.3) | | 49(53.3) | |
| Polytechnic degree | 10(4.5) | | 1(3.3) | | 21(22.8) | |
| University degree | 125(56.1) | | 8(26.7) | | 18(19.6) | |
| Others | 1(0.4) | | 17(56.7) | | 4(4.3) | |
| **Income (€/month)** | | 0.483 | | 0.093 | | 0.805 |
| <850 | 64(19.9) | | 141(56.0) | | 115(31.0) | |
| 850-2500 | 150(46.7) | | 92(36.5) | | 221(59.6) | |
| >2500 | 107(33.3) | | 19(7.5) | | 35(9.4) | |

| Variables | Russian | | Somali | | Kurdish | |
|---|---|---|---|---|---|---|
| | Yes n (%) | p-value | Yes n (%) | p-value | Yes n (%) | p-value |
| **Home ownership** | | 0.537 | | 0.831 | | 0.732 |
| Own apartment | 110(33.7) | | 5(1.8) | | 48(12.4) | |
| Rental apartment | 215(66.0) | | 275(97.5) | | 337(87.1) | |
| Somewhere else | 1(0.3) | | 2(0.7) | | 52(0.5) | |

***yes = having a lot and full confidence**

## 5.11. Association between experience of discrimination and sociodemographic characteristics

Experience of discrimination was found not to be associated with age, length of stay in Finland, marital status, Finnish citizenship, language proficiency, education outside Finland and home ownership in any of the groups (Table 12).

Kurdish females had experienced discrimination more than males. Likewise, education obtained in Finland was found to be significantly associated only in the Russian group (p=0.014). Somalis who had average income were found to have faced discrimination more, than those with lower or higher income.

Table 12 Association between experience of discrimination and sociodemographic characteristics

| Variables | Russian | | Somali | | Kurdish | |
|---|---|---|---|---|---|---|
| | Yes n (%) | p-value | Yes n (%) | p-value | Yes n (%) | p-value |
| **Gender** | | 0.100 | | 0.485 | | 0.035 |
| Male | 14(25.5) | | 13(52.0) | | 19(40.4) | |
| Female | 41(74.5) | | 12(48.0) | | 28(59.6) | |
| **Age in years** | | 0.175 | | 0.224 | | 0.172 |
| 15-24 | 3(5.5) | | 3(12.0) | | 7(14.9) | |
| 25-34 | 13(23.6) | | 7(28.0) | | 12(25.5) | |
| 35-44 | 12(21.8) | | 6(24.0) | | 21(44.7) | |
| 45-54 | 13(23.6) | | 7(28.0) | | 5(10.6) | |
| ≥55 | 14(25.5) | | 2(8.0) | | 2(4.3) | |
| **Stay in Finland (years)** | | 0.217 | | 0.274 | | 0.329 |
| ≤5 | 7(12.7) | | 2(8.0) | | 8(17.0) | |
| 6-10 | 9(16.4) | | 8(32.0) | | 12(25.5) | |
| 11-15 | 19(34.5) | | 5(20.0) | | 11(23.4) | |
| 16-20 | 17(30.9) | | 8(32.0) | | 13(27.7) | |

| Variables | Russian | | Somali | | Kurdish | |
|---|---|---|---|---|---|---|
| | **Yes n (%)** | **p-value** | **Yes n (%)** | **p-value** | **Yes n (%)** | **p-value** |
| ≥21 | 3(5.5) | | 2(8.0) | | 3(6.4) | |
| **Marital status** | | 0.058 | | 0.361 | | 0.343 |
| Married/registered partnership | 29(52.7) | | 19(79.2) | | 20(42.6) | |
| Cohabiting | 4(7.3) | | 0(0.0) | | 9(19.1) | |
| Divorced/separated | 15(27.3) | | 3(12.5) | | 3(6.4) | |
| Widow | 3(5.5) | | 0(0.0) | | 4(8.5) | |
| Unmarried | 4(7.3) | | 2(8.3) | | 11(23.4) | |
| **Finnish citizenship** | | 0.963 | | 0.409 | | 0.232 |
| No | 30(54.5) | | 14(56.0) | | 22(46.8) | |
| Yes | 25(45.5) | | 11(44.0) | | 25(53.2) | |
| **Language proficiency** | | 0.699 | | 0.727 | | 0.151 |
| Finnish | 52(94.5) | | 23(92.0) | | 43(91.5) | |
| Swedish | 2(3.6) | | 0(0.0) | | 3(6.4) | |
| Do not know either language | 1(1.8) | | 2(8.0) | | 1(2.1) | |
| **Highest education in Finland** | | 0.014 | | 0.164 | | 0.405 |
| Vocational degree | 16(61.5) | | 4(57.1) | | 14(87.5) | |
| Polytechnic degree | 6(23.1) | | 3(42.9) | | 2(12.5) | |
| University degree | 4(15.4) | | 0(0.0) | | 0(0.0) | |
| **Highest degree elsewhere** | | 0.640 | | 0.209 | | 0.759 |
| Vocational degree | 19(45.2) | | 3(42.9) | | 6(50.0) | |
| Polytechnic degree | 3(7.1) | | 0(0.0) | | 3(25.0) | |
| University degree | 20(47.6) | | 0(0.0) | | 2(16.7) | |
| Others | 0(0.0) | | 4(57.1) | | 1(8.3) | |
| **Income (€/month)** | | 0.547 | | <0.001 | | 0.224 |
| <850 | 11(20.4) | | 7(29.2) | | 19(42.2) | |
| 850-2500 | 21(38.9) | | 10(41.7) | | 23(51.1) | |
| >2500 | 22(40.7) | | 7(29.2) | | 3(6.7) | |
| **Home ownership** | | 0.888 | | 0.715 | | 0.898 |
| Own apartment | 20(36.4) | | 0(0.0) | | 6(12.8) | |
| Rental apartment | 35(63.6) | | 25(100.0) | | 41(87.2) | |
| Somewhere else | 0(0.0) | | 0(0.0) | | 0(0.0) | |

# 6. DISCUSSION

## 6.1. Discussion on findings

Moving to a new land is a challenge in itself and the access and utilization of novel health care there further adds to the difficulty, which in turn has bearings on migrant's physical, psychological and social wellbeing. In this study, three different groups of population - Russian, Kurdish and Somali, were interviewed and asked about their own accessibility and experiences of utilizing Finnish health care services. Majority of the 3000 randomly selected participants belonged to the age group of 25-35 years. While a high percentage of the participants said they were familiar with the Finnish language, their level of understanding, speaking, reading and writing varied. The Russians had more full time jobs than Kurdish and Somali participants. However, more than half of the participants reported that the household expenditure coverage was difficult with their monthly income.

### 6.1.1. Accessibility

Access to health care consists of the following dimensions: non-discrimination, physical accessibility, economic accessibility and information accessibility (UN Economic and Social Council 2000). This study tries to describe the access and associated factors from the above-mentioned aspects. A higher percentage of the groups did not have a specific doctor to go to. Among those who did, the Kurdish and Russians had comparatively more access than the Somali group, the doctor being from Finland, except for a low percentage of Russians who had a specific doctor outside Finland. There was similar observation in terms of having access to a specific nurse. Another study by Castaneda et al. (2012) from the same Maamu data compared the three immigrant groups with the Finns regarding their access to a specific doctor and nurse showed that 43.8% of Finns had access to a specific medical doctor. Although there was no significant difference between Finns and the Kurdish group, there was a difference with the Russian and Somali group regarding the access to a specific doctor. Similarly, Castaneda et al. (2012) showed that 37.4% Finns reported to have access to a public health nurse, with a significant difference with all three

groups. In both cases, Finns were found to have higher access to a medical doctor or nurse compared to the migrant groups.

According to our study, in the past 12 months, doctor-visits were found to be more frequent in the Russian and Kurdish group than that of Somalis. The report by Castaneda et al. (2012) showed that 66.7% of Finns had been to a doctor in last 12 months. There was no statistically significant difference among the Finns and the Russian and Kurds. However, a significant difference was observed among the Finns and Somali. Somalis having fewer doctor visits than the native population. In our study, while most of the doctor-visits were inside Finland, doctor-visits outside Finland were also reported. Amongst the participants, the Russians were found utilizing the services outside of Finland more often. A probable cause for this could be Finland and Russia sharing their borders. A significant reason to visit abroad was having a familiar doctor, however, getting better treatment, language barrier, quick access, and lower cost were found to be statistically insignificant.

People are known to prefer health care settings which are culturally comfortable and operate or communicate in a familiar language. Similar situation was observed in case of Mexican immigrants in northern California in the US. They were found to return to their home country for health care due to difficulty in accessibility, unsuccessful treatment and preference for the health care of their home country (Bergmark et al. 2010). Another study done with the Korean immigrants in New Zealand examining why the migrants returned to their country of origin for health care suggested that intercultural and societal relations between the countries influenced the decisions. The difference or similarity in the health care systems and patient's cultural preferences affects the utility of the health care (Lee et al. 2010). However, these cultural preferences were not explored in this study as reasons for returning to their home countries for health care.

### 6.1.2. Health care service utilization

Higher percentage of participants in this study reported to have trust in the health care system. There was a significant difference among the three population groups in terms of their experience. Somalis were found to have more confidence in the health care system of Finland. A higher percentage of Russian group reported of having very little trust, and a higher number of Kurdish

group reported to have no confidence in the system at all. Age, gender, duration of stay in Finland, marital status and language proficiency were found to have significant statistical association with the healthcare services utilization experience in some groups, but association varied across the groups.

Age and ethnicity has been found to significantly affect the assessment of primary health care in different population groups, affecting their views in the health care system. While age was not found to be an associative factor in Somali and Kurdish group, but in Russians, those from the age group 25-34 years were found to have more trust. This is in contrast with a study conducted in London among the natives and the migrants, showing older patients rating the health care more favorable than younger patients (Campbell et al. 2001).

In Russians, being a female and being married was found to be significantly associated with having more trust in the public health care. In Somali group, more females showed trust in public health care. Also among those who reported trust, 94.7% were found to be familiar with the Finnish language. In the Kurdish group, married participants reported more trust, as well as those staying in Finland for 6-15 years. Factors associated with use of health services differ between migrant groups. Health beliefs, previous health care experiences varies according to the country of origin that in turn can affect the utilization of health care services and how they perceive it (Dias et al. 2008).

The study by Dias et al. (2008), found that a large fraction of participants reported to be satisfied or very satisfied with health services. However, no clear explanation has been provided on the potential reasoning. Although, many previous studies confirm that factors such as culture, ethnicity and country of origin play a major role in patient satisfaction (Adamson et al. 2003).

Having lower trust has been independently associated with many situations by the migrants. Some situations include not being given enough time to explain their visits to the physicians, not being involved in decision making as per their desire, physicians not asking about their living conditions, which might be affecting their health, not being provided with tests, procedures, or referrals which were needed according to their thinking. Low satisfaction experiences are correlated with trust in

the caregivers and even affect the continuity of the service (Keating et al. 2002). Similar results have been found in another study where poor trust, confidence and satisfaction were observed in patients who had difficulty with specialty care access (Grumbach et al. 1999).

Those who had visited a health care center in Finland were asked if they have had any experience of discrimination during the visit. About 9% of those population reported of experiencing discrimination. However, no statistically significant difference was observed in the experience amongst the three groups. While most of the sociodemographic factors were not found to make any difference, gender, income and education in Finland were found to have association. Kurdish females, Somalis with average monthly income of 850-2500€ and Russians who had obtained vocational degree in Finland were found to have faced more discrimination. Income, education, health care coverage and affordability of medical care were found to have major affect on the perceived discrimination among different ethnicities (Hausman et al. 2008). A systematic review was conducted for population-based studies of immigrants and health care post 1996. The results showed lower satisfaction rate among the foreign born or non-English speakers and they reported of experiencing more discrimination (Derose et al. 2009).

In Finland, a permanent residency entitles one to all the public health care facilities available. The municipal health centers provide the primary health care service. The fees for doctor visits are kept minimal. While the public health care fees have a certain criteria set by the municipality, the private health care providers can freely set their prices. Generally, the charge depends on the time a doctor spends on the patient for check-up as well as the examination related work (Cost of treatment 2016). According to this study, the participants were found to visit health care centers more while private clinics were visited less often. The most probable reason behind this might be the difference in cost incurred in these two settings.

There was a statistically significant difference identified between the groups regarding the doctor visits. Most Somalis visited the health care centers, while the Kurdish groups preferred the hospitals and the Russians paid visits to the occupational health centers. A univariate analysis showed a significant association between the three groups ($p < 0.001$), their monthly income and

the place for doctor visit. Higher percentage of Russians were utilizing the private health care center, a probable explanation for which can be the higher monthly earnings of the Russians.

Most of the participants held similar opinions that they got quick access to treatment, were provided with adequate information, were listened to and shown interest in, and benefited from the visit. An interesting point being, most of them agreed that they were able to influence the treatment. More Somalis, followed by Kurdish were found to have this opinion regarding their visit to the health center. A higher percentage of Kurdish group said they needed interpretation followed by Russian and Somali. Similar views were shared by migrants from former Yugoslavia living in Sweden about needing a professional interpreter with higher communication and language while accessing the health care system (Hadziabdic et al. 2009).

### 6.1.3. Self-rated health status

Half of the population reported to have a good self-rated health status, 9.2 % saying they had poor health status. Somali group reported to have a better self-rated health status as compared to the other two groups. Another report from Maamu study showed, Finnish men and women had overall better self-rated health status than the Russian and Kurdish group. Although, Somali and Finnish women had similar self-reported health status, Somali men reported higher than Finnish men (Migrant Health and Wellbeing Survey, 2014). National Health Interview Surveys in 2000 and 2001 in US also stated similar results with foreign-born individuals reporting fewer chronic diseases compared with the US born whites (Huh et al. 2008). Studies in Sweden suggest similar results of immigrants having poor self-rated health than the natives (Lindström et al. 2001, Steiner et al. 2007, Wiking et al. 2004).

### 6.1.4. Barriers to treatment

The three population groups seemed to have similar opinion regarding the various factors affecting access to treatment such as waiting in queue, transportation, suspicion or mistrust, and uncertainty/doubt. However, more Kurdish reported higher health care service rates and language as a barrier, followed by the Russian group.

Similar findings have been observed in a study on Latin immigrants, where factors such as difficulty in transportation, lack of proper documentation, not having a health insurance, language barriers, long waiting time, and not knowing where to go for affordable care, came across as structural barriers in accessing health care (Garces et al. 2006).

A systematic review on 54 articles regarding health service utilization among ethnic minorities suggested three different levels for occurrence of potential barriers. Very promising hurdles occurred at three levels: the patient, provider and lastly the system level. The impediments in the patient level were basically the personal traits such as demographic and social variables, beliefs, attitudes and practices related to health, personal and community development resources and perceived illnesses. From the provider level point of view, they were mostly skills and attitudes. On the system level, the main barriers accounted for the entire health care system and its organization (Schepers et al. 2006).

The study on determinants of healthcare utilization by immigrants in Portugal by Dias et al. 2008, pointed out that prejudiced opinions of health care providers was one of the main hindrance in utilization of services. Eighteen percent of the population claimed this to be a major cause. The professionals need to be more considerate and empathetic towards the culture, beliefs and ideals of the immigrant patients (Blais & Maiga 1999). "Culturally sensitive health promotion for ethnic minorities, given by health care professionals trained in communication, would bring substantial benefits" (Eshiett & Parry 2003).

### 6.1.5. Health care access and utilization, and sociodemographic factors

Education obtained in Finland and home ownership, were not found to significantly affect the access to a specific doctor/nurse. However, there was significant difference among some groups regarding gender, age, marital status, language proficiency and income, when associating with having access to a specific doctor. Likewise, a significant difference was found among some groups regarding gender, stay in Finland, marital status, Finnish citizenship and degree obtained outside Finland, when associating with having access to a specific nurse.

In Kurdish group, no factors were found to affect their accessibility to a doctor or nurse, except for gender and income. The females shared the larger percentage of those who reported they had a certain doctor to go to. In case of the Somalis, gender was found to be strongly associated, while marriage was found to be weakly associated with the accessibility. Majority of those reporting to have access among the Somalis and Kurdish belonged to the average income group (850-2500 €/month). Gender association was also found in a study conducted in the Netherlands on four migrants groups from Morocco, Netherland Antilles, Turkey and Surinam, showed that women tended to have inferior health than men, with participants from Turkey showing the biggest variance. They were also found to contact a general practitioner more frequently than men (Gerritsen and Deville 2009).

On the other hand, gender, marriage, age, having a Finnish citizenship, knowledge of Finnish language and duration of stay were found to be an associating factor in case of the Russians. Higher number of respondents having the access were above 35 years old. Higher odds of professional health seeking behavior was observed among those who belonged to the age group 31-45 years in a study conducted in Bangladesh (Ahmed et al. 2000). A weak association with marriage was observed in this study. Marital status has been found to be a differentiating variable in health care utilization (Joung et al.1995). Length of stay was found to affect the utility pattern in the immigrants. Experience modifies utilization manners from isolation to regular basis (Leduc and Prolux 2004). This might be the possible explanation as to why people living for longer term tend to have a regular source of care.

Language is considered to be a barrier in health care access and utilization in various studies (Dias et al. 2008, Morris et al. 2009). In this study also, language was found to a barrier in getting treatment. Access to a specific doctor was found to be high among Russians who were proficient in Finnish language. This shows that knowledge of native language can have a positive affect in accessing and utilizing the health care in the host country.

Many immigrants are apprehensive to visit a health facility due to various factors, such as language incompetence, cultural difference or economic status. This may result in lower health status, which

in turn might lead to a lower quality of life not only of the patient but their families as well. It directly and indirectly affects the health level of the country as a whole (Derose et al. 2009).

In our study, no significant association was observed between doctor visit in last 12 months with length of stay in Finland, having a Finnish citizenship, language proficiency, education outside Finland and home ownership. However, among those who had doctor visits in the last 12 months, higher percentage consisted of females, those who were married, belonged to middle age group, and those having average income. A study in US found that the odds of visiting a doctor at least once a year is more among those who have a health insurance and a regular source of care (Andersen et al. 2002).

Being married was associated with more health care center visits in a year regardless of age (Blumberg et al. 2014). Married people sought preventive care more as they are obligated to stay healthy for the wellbeing of their family (Stimpson and Wilson 2009).

Females were found to be paying frequent visits to the doctors in the last 12 months among the Russians and Somali group. Similar results were found in a study that showed women having more health center visits than men (Bertakis et al. 2000). Women belonging to reproductive age group use sexual and reproductive health services quite often, for example – prenatal, maternal and child health (Fenta et al. 2007). This might be a possible explanation as to the higher number of visits.

### 6.2. Strengths and limitations of the study

The study includes the largest migrant groups in Finland with different geographical and cultural backgrounds. It also provides information regarding the health, wellbeing and integration of the migrant groups. The sampling, data collection and analysis was performed in similar way for all the population groups involved and the results are generalizable to studied immigrant population groups in Finland. The population in the study was well represented. Trained bilingual fieldwork personnel performed data collection, with the questionnaire covering various aspects of the health scenario in detail. All these factors add to the validity and reliability of the study as well.

Only three migrant population groups were studied. Immigrants from other parts of the world (for example, Asia), were not included in the study. Hence, the generalizability of findings of this study may be limited to the included study groups only. Samples were selected from six cities, which are big cities, thus results may not represent the whole of the country. The accessibility and utility might differ for different population groups, if not much. As the data was secondary, in-depth and detailed analysis could not be performed, as there was limitation in the information collected originally. More information regarding accessibility and utilization experiences could have been explored which could have helped in in-depth analysis. Though the initial selected sample size was big, a third of them did not provide answers for the questions used in this study, which might have affected the outcome of the study.

Data collection was done in 2012, and since then because of the changing geopolitical scenarios across the world, influx of different types of migrants to Europe has changed in its patterns and composition, so this study results may not be well reflective of the current immigrant populations in Finland. This is a quantitative research; however, some of the questions could be explored more in-depth in a qualitative format. Especially, the social and cultural reasoning are traditionally more explorable by qualitative methods.

### 6.3. Implications

Due to constantly changing dynamics of migrant groups, further research studies are recommended in this area. Most studies on migrant's access and utilization of health care services focus on the migrants who are the recipients of these health care services but to complete the picture, we need to study these issues from the healthcare provider's perspective as well. Studies involving migrants as well as healthcare professionals will help bring in forefront their situations individually as well as understand the patient-provider relationship, for the optimal access and utilization of the services. A mixed method approach of both qualitative and quantitative researches can provide more insight and help develop culturally apt health promotion policies for the immigrants.

In case of Finland, similar studies should be carried out in other parts of Finland and in other immigrant groups as well, which will provide a broader picture of utilization of the health care

system. As seen, there is difference in the health care accessibility and utilization among the three studied migrant groups. With the current refugee scenario, a more thought after and well-devised effective health care policy is required considering the diverse migrant groups, furthered by proper implementation. One cannot neglect the fact that designing a health care plan that incorporates all aspects of such multidimensional group is not an easy task. Thus, a unique health care plan must be devised by the authorities that pays heed to the variety of cultural beliefs and practices to achieve an environment of equality.

## 7. CONCLUSION

The study was carried out to analyze the accessibility and utilization of health care services by Russian, Somali and Kurdish immigrants in Finland. A low percentage of the study population seemed to have access to a certain doctor and/or nurse. High percentage (63.1%) of the study population had visited a doctor in the past 12 months and majority of them were within Finland. Large percent of the participants were found to have confidence in the health care system, with a portion of them reported of having faced discrimination. All three groups had similar opinion regarding the factors affecting utilization. Cost was the main factor affecting utilization of the health care services. Among the sociodemographic factors, gender, age, income, marital status, length of stay and education were found to be differentially associated with the access and utilization of the health services among the three study groups. Gender (being woman) and marital status (being married) were the only common associative factors among the three groups. Income (earning 850-2500 €/month) was an associative factor among Somali and Kurdish population, age (25-54 years) was the associative factor among Russian and Kurdish population, whereas length of stay (above ten years), knowing Finnish language and having a Finnish citizenship was an associative factor only in case of Russians.

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# 9. APPENDIX

## 9.1. Appendix I

**Participation (Maamu Study)**

| | **Russian** | | **Somali** | | **Kurdish** | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| **Participation, at least one part** | **702** | **70.2** | **512** | **51.2** | **632** | **63.2** |
| health examination + full interview | 466 | 46.6 | 317 | 31.7 | 480 | 48.0 |
| health examination + short interview | 1 | 0.1 | 42 | 4.2 | 26 | 2.6 |
| only interview | 79 | 7.9 | 34 | 3.4 | 28 | 2.8 |
| only health examination | 1 | 0.1 | 19 | 1.9 | 14 | 1.4 |
| only short interview | 155 | 15.5 | 101 | 10.1 | 81 | 1.8 |
| **Refused/no show/ no appointment** | **201** | **20.1** | **299** | **29.9** | **226** | **22.6** |
| **Not contacted** | **84** | **8.4** | **144** | **14.4** | **134** | **13.4** |
| wrong address | 22 | 2.2 | 38 | 3.8 | 54 | 5.4 |
| tried home visit 5 times | 62 | 6.2 | 106 | 10.6 | 80 | 8.0 |
| **Moved/abroad** | **13** | **1.3** | **45** | **4.5** | **8** | **0.8** |
| **Total** | **1000** | **100** | **1000** | **100** | **1000** | **100** |

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