



Utilization of health-care services among immigrants recruited through non-profit organizations in southern Italy

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Abstract

Objectives The study aims were focused on acquiring information about access to health-care services and to investigate the potential barriers affecting full access to health-care services.

Methods The study population consisted of immigrants and refugees aged 18 or more living in Italy for at least 12 months recruited through non-profit organizations.

Results 961 immigrants took part in the study, with a response rate of 98.9 %. Of the participants, 85 % had access to a general practitioner (GP) at least once, and 46.6 and 22.4 % mentioned a minimum one emergency visit and hospital stay, respectively. Diagnostic procedures and/or drug prescriptions (49.7 %), chronic disease control (15.8 %), and preventive interventions (13 %) were the most reported reasons for GP access.

Conclusions This study yielded current and broader insight into the model of health-care utilization among immigrants. The findings adds to our understanding of the third-sector organizations' role in facilitating immigrants' access to services offered by the Italian National Health Service, contributing to the extensive discussion on how to best manage migrant health care in Italy.

Keywords Access · Barriers · Health-care services utilization · Immigrant · Italy

Abbreviations

| | |
|------|--------------------------|
| GP | General practitioner |
| OR | Odds ratio |
| CI | Confidence interval |
| ED | Emergency department |
| NHS | National Health Service |
| NPOs | Non-profit organizations |

Introduction

In 2013, the number of global migrants amounted to 232 million, and during the period from 2010 to 2013 the annual growth rate reached 1.6 % every year (United Nations, Department of Economic and Social Affairs, Population Division 2013). Europe hosts nearly one-third of all international migrants worldwide, and in 2013 an estimated 72.4 million migrants lived in Europe (United Nations, Department of Economic and Social Affairs, Population Division 2013). In Italy, increases in net migration between 2005 and 2010 were witnessed (United Nations, Department of Economic and Social Affairs, Population Division 2013), largely due to its favorable geographical position. In 2012, migrant inflows fell by 19 %, as well as in a number of southern European countries, amid continuing economic uncertainty (Dumont 2014), but nonetheless, according to the latest statistics from the International Organization for Migration, in the first months of 2015 as many as 15,000 migrants have already reached the Italian shores and most of them were originally from sub-Saharan Africa. There are currently about 5 million legal foreign citizens living in Italy (Istituto Nazionale di Statistica 2014) (corresponding to about 8.7 % of the resident population) and the main area of origin of foreigners living in our country is central-eastern Europe (De Marco et al. 2014).

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In Italy, access to health care is guaranteed for all migrant populations. The universal coverage free of charge for hospital care and with co-payments for ambulatory and pharmaceutical care is provided to immigrants legally living in the country, whereas free access to a package of essential health services (i.e., emergencies, maternal and child clinics, mandatory vaccinations, hospital and ambulatory care for conditions which could represent a severe long-term health risk if left untreated) is guaranteed also to irregular immigrants, without the need of having to notify the immigration authorities (D.Lgs. 286 1998; D.P.R. 394 1999; Ministry of Health, Circular 5 2000; Permanent Conference for Relations between State, Regions and Autonomous Provinces of Trento and Bolzano 2012).

Migrants' health has become a growing field of research in recent years (Derose et al. 2007; Goel et al. 2004; Kandula et al. 2004). Previous research has documented differences between migrant groups and native citizens in health-care utilization in Europe (Rechel et al. 2013). In North America, numerous studies have documented lower access to health care among immigrants (Lebrun and Dubay 2010; Setia et al. 2011) that are less likely to have a usual source of care and to receive timely cancer screenings (Goel et al. 2003; Lucas et al. 2003; Xu and Borders 2008).

Knowledge regarding migrants' health (Geraci et al. 1995; Medda et al. 2002; Miceli and Di Lallo 1996; Spinelli et al. 2003) and access to health-care services (Cacciani et al. 2006) is still limited in Italy. Our study aims were focused on obtaining a broad overview of the migrant populations' self-reported health status, to acquire information about access to health-care services and to investigate the potential barriers affecting full access to health-care services, to increase understanding of migrants' health needs and to promote adequate programs and policies.

Methods

The survey was conducted from May 2012 until April 2013. The study population consisted of a specific subset of immigrants and refugees. For this study, immigrants were defined as those from low- or middle-income countries according to the classification of the World Bank based on per capita GDP (The World Bank 2011). Participants were defined regular if they were legally allowed to reside in Italy, irregular if they did not have any official documentation (residence permit), and refugees if they had received a permanent residence permit due to the need for protection according to the Geneva Convention or for humanitarian reasons. Tourists were excluded. Since there is no accurate census of immigrants in Italy, the probability or random sampling cannot be carried out in this population. Therefore, a convenience sampling method was applied. Subjects

aged 18 or more living in Italy for at least 12 months were recruited through the third-sector organizations that provide support to immigrants (i.e., non-profit associations, night schools for immigrants, lay volunteer groups, religious associations) located in the Calabria Region. We contacted key persons in those organizations, who acted as mediators between investigators and immigrants to increase feelings of trust.

Prior to face-to-face interviews, the research team presented the aims of the study, emphasized the anonymity of the responses, and acquired written consent. Study participants were not offered any reimbursement for their time. All interviews were conducted by physicians who had been previously trained, standardized, and evaluated in interview methods. Actual data collection did not start until the performance of the interviewers had been judged satisfactory and showed suitable inter-rater reliability. On average, the interview lasted 20 min, and, if necessary, cultural-linguistic mediators or interpreters were involved to facilitate communication and understanding.

Survey instrument

A structured questionnaire was developed. Socio-demographic information regarded personal characteristics, such as gender, age, marital and legal status, education level, religion, nationality, working activity, and duration of stay in Italy. The questions on health status included information on eating habits, physical activity, smoking habits, alcohol consumption, and chronic and infectious diseases. The questions on health services utilization during the previous year included the number and reasons of visits to the general practitioner (GP), access to specialists, dental and mental health services, to emergency department (ED) and inpatient hospital admissions, and satisfaction/dissatisfaction with service of health care. All information was self-reported. The questions on frequency of utilization of health services were in a "yes/no" format. If the answer was "yes", then the participants were asked the number of accesses. The questions on overall satisfaction and any difficulties with GP health services were scored on a four-point Likert scale with options for no, few, rather, and much. Questions about smoking and alcohol consumption habits were derived from the Italian Behavioral Risk factor Surveillance System (PASSI). We defined "current smokers" as subjects who reported smoking at least 100 cigarettes during their lifetime and who currently smoked every day or some days. "Current drinking" was defined as consuming alcohol on one or more of the previous 30 days. "Heavy drinking" was defined as an average consumption of more than two drinks per day during the previous 30 days among men (i.e., >60 drinks/month) and more than one drink per day during the previous 30 days among

women (i.e., >30 drinks/month) (Baldissera et al. 2009). The questionnaire was pretested on a sample to ensure clarity of interpretation to improve the validity of responses.

The study protocol was ratified by the Institutional Ethical Committee ('Mater Domini' Hospital of Catanzaro, Italy) (20/04/2012).

Statistical analysis

Multivariate stepwise logistic regression analysis was performed. Four models were developed including those variables potentially associated with the following outcomes of interest: access to GP in the previous year (Model 1) (0 = no, 1 = yes), one or more specialist accesses (Model 2) (0 = no, 1 = yes), one or more accesses to ED (Model 3) (0 = no, 1 = yes), and one or more hospital admissions (Model 4) (0 = no, 1 = yes). Model building strategy and particularly ways to include independent variables in the model (continuous, ordinal, or categorical) took into account how each of these ways better fitted the data at the univariate analysis and we chose that way in the multivariate analysis. In all models, the explanatory variables included were the following: gender (1 = male, 2 = female), age (continuous), marital status (1 = married, 2 = other), children (1 = no, 2 = yes), education level (ordinal: 1 = ≤ 7 yy, 2 = 8–13 yy, 3 = university degree), employment status (four categories: 1 = unemployed, 2 = housekeeper, caregiver, 3 = manual worker; 4 = sedentary workers) included as a dummy variable with the unemployed being the reference category, nationality (four categories: 1 = European, 2 = African, 3 = Asiatic and Oceanic, 4 = American) included as a dummy variable with European being the reference category, length of stay in Italy (ordinal: 1 = 1–2 yy, 2 = 3–5 yy, 3 = 6–8 yy, 4 = ≥ 9 yy), self-reported legal status (1 = regular, 2 = irregular), chronic diseases (1 = no, 2 = yes), physical activity (1 = no, 2 = yes), current smoker (1 = no, 2 = yes), and alcohol consumption in the previous 30 days (1 = no, 2 = yes). The significance level for variables entering the logistic regression models was set at 0.2 and for removal from the model at 0.4. Adjusted odds ratio (ORs) and 95 % confidence intervals (CIs) were calculated. The data were analyzed using the Stata software program, version 11.2 (Stata Corporation 2009).

Results

Of the 972 immigrants who were considered for the study, 961 agreed to participate and were enrolled, for a participation rate of 98.9 %.

The main characteristics of the study population regarding socio-demographic profile and lifestyle habits are presented in Table 1. The mean age was 37.8 years (18–70 yy). About 35 % of the sample was married, with the spouse also living in Italy. Only 10.1 % had obtained university-level education. A third of immigrants were housekeepers or caregivers. 274 (28.5 %) had been living in Italy for 9 years or more. Paid employment was the most common reason (71.7 %) for migration among participants. About 38 % of the respondents were affected by chronic diseases (cardiovascular diseases, muscular–skeletal diseases, and gastrointestinal diseases were reported as the most representative categories of chronic diseases), and only 1.8 % were affected by infectious diseases.

Table 2 shows migrants' access to health-care facilities.

Diagnostic procedures and/or drug prescriptions (49.7 %), chronic disease control (15.8 %), and preventive interventions (13 %) were the most reported reasons for GP access. Among the main reasons for requiring the services of a specialist, immigrants reported chronic disease control (26 %), preventive interventions (20.1 %), such as gynecologic control, and prenatal care visits and ultrasound checks during pregnancy (15.1 %). More than 80 % were satisfied with GP and specialist health services, and the main reason for dissatisfaction with any type of health-care services was the long waiting time for access (47.1 %).

Table 3 shows satisfaction/dissatisfaction with health-care services use of the study population. About 31 % of participants were dissatisfied with any type of health-care services used during their stay in Italy. Barriers to health-care services access identified by the migrant population were divided into three different levels (Agudelo-Suárez et al. 2012): (1) the structural/political level (i.e., policy and resource considerations that determine the scale and configuration of services); (2) the institutional factors (i.e., relating to service organization and delivery), and (3) the individual level (i.e., the characteristics of migrants themselves and service providers, including socio-demographic characteristics, knowledge, communication skills, and motivation).

Table 4 shows the results of the multiple logistic regression analysis. Globally, the access to health-care services was significantly higher among female immigrants (Models 1, 2 and 4), who were affected by chronic diseases (all models) and with longer stay in Italy (Models 2, 3 and 4). Moreover, access to GP, specialist, and ED was significantly lower in Asian immigrants compared to European ones (Models 1, 2, and 3), but hospital admissions were significantly more frequent among African immigrants (Model 4). Finally, access to a specialist and ED was significantly more common among immigrants with higher education level (Models 2 and 3).

Table 1 Demographic and lifestyle habits of the study population

| Characteristic | <i>N</i> (%) | Mean (\pm SD) |
|--------------------------------------|--------------|--------------------|
| Gender (961) | | |
| Female | 503 (52.3) | |
| Male | 458 (47.7) | |
| Age group, years (961) | | |
| 18–30 | 285 (29.6) | 37.8 (\pm 10.8) |
| 31–40 | 314 (32.7) | |
| 41–50 | 219 (22.8) | |
| \geq 51 | 143 (14.9) | |
| Children in Italy (595) | | |
| Yes | 350 (58.8) | |
| No | 245 (41.2) | |
| Religion (958) | | |
| Islamic | 416 (43.5) | |
| Christian | 237 (24.7) | |
| Christian Catholic | 215 (22.4) | |
| Sikh | 51 (5.3) | |
| Other | 39 (4.1) | |
| Country of origin (961) | | |
| Africa | 406 (42.2) | |
| Europe | 290 (30.2) | |
| Asia | 245 (25.5) | |
| America | 19 (2) | |
| Ocean | 1 (0.1) | |
| Self-reported legal status (960) | | |
| Regular | 823 (85.7) | |
| Irregular | 132 (13.8) | |
| Asylum seeker | 5 (0.5) | |
| Frequency of eating, times/day (940) | | |
| Once | 25 (2.7) | |
| Twice | 233 (24.8) | |
| Three or more | 682 (72.5) | |
| Dietary habit, daily servings (935) | | |
| Cereal group | | |
| <4 | 819 (87.6) | 2.49 (\pm 1.16) |
| 4–5 | 93 (9.9) | |
| >5 | 23 (2.5) | |
| Vegetable and fruit group | | |
| <5 | 824 (85.7) | 3.12 (\pm 1.30) |
| 5–6 | 98 (10.2) | |
| >6 | 39 (4.1) | |
| Milk group | | |
| <2 | 656 (70.2) | 1.46 (\pm 0.88) |
| 2–3 | 258 (27.6) | |
| >3 | 21 (2.2) | |

Table 1 continued

| Characteristic | <i>N</i> (%) | Mean (\pm SD) |
|---|--------------|--------------------|
| Meat/fish group | | |
| <1 | 164 (17.5) | 1.46 (\pm 0.71) |
| 1–2 | 645 (69) | |
| >2 | 126 (13.5) | |
| Snack group | | |
| <1 | 506 (54.6) | 1.01 (\pm 1.75) |
| \geq 1 | 421 (45.4) | |
| Physical activity (941) | | |
| No | 279 (29.6) | |
| Yes | 662 (70.3) | |
| Tobacco use in entire life (941) | | |
| No | 673 (71.5) | |
| Yes | 268 (28.5) | |
| Frequency of current smoking (268) | | |
| Not at all | 55 (20.5) | |
| Some day | 17 (6.3) | |
| Every day | 196 (73.2) | |
| Attempts to quit smoking in the previous year among current smokers (213) | | |
| No | 120 (56.3) | |
| Yes | 93 (43.7) | |
| Alcohol consumption in the previous 30 days (941) | | |
| No | 659 (70) | |
| Yes | 282 (30) | |
| Heavy alcohol use (937) | | |
| No | 730 (77.9) | |
| Yes | 207 (22.1) | |

The number of participants responding to the questions is indicated in brackets

Discussion

Calabria is a region of Italy that, together with Sicily and Puglia, plays a crucial role in the first reception of asylum seekers and irregular immigrants from the highly unstable African and Asian countries. The enormous and unprecedented wave of African and Asian immigrants seeking to cross the Strait of Sicily into Italy has created a state of emergency and the findings of our study provide important information on health-care services utilization among immigrants and the data gathered help in providing appropriate and accessible services for them during their stay in southern Italy.

Findings of previous studies showed that the utilization of primary and specialist care services might present

Table 2 Access to health-care facilities of the study population

| Characteristic | <i>N</i> (%) |
|---|--------------|
| Registration at NHS (941) | |
| No | 213 (22.6) |
| Yes | 728 (77.4) |
| GP access (728) | |
| No | 109 (15) |
| ≥1 | 619 (85) |
| GP accesses in the previous year (675) | |
| No | 180 (26.7) |
| ≥1 | 495 (73.3) |
| Specialist visit (936) | |
| No | 579 (61.9) |
| ≥1 | 357 (38.1) |
| Dentist visit (932) | |
| No | 587 (63) |
| ≥1 | 345 (37) |
| Family planning center access (931) | |
| No | 775 (83.2) |
| ≥1 | 156 (16.8) |
| Social services access (933) | |
| No | 867 (92.9) |
| ≥1 | 66 (7.1) |
| Mental health service access (930) | |
| No | 909 (97.7) |
| ≥1 | 21 (2.3) |
| ED access (937) | |
| No | 500 (53.4) |
| ≥1 | 437 (46.6) |
| Hospital stay (937) | |
| No | 727 (77.6) |
| ≥1 | 210 (22.4) |
| Day hospital access (937) | |
| No | 908 (96.9) |
| ≥1 | 29 (3.1) |
| Physicians' gender preference (932) | |
| Indifferent | 637 (68.3) |
| Female | 159 (17.1) |
| Male | 136 (14.6) |
| Health-related informations understanding (930) | |
| Yes | 719 (77.3) |
| No | 211 (22.7) |

The number of participants responding to the questions is indicated in brackets

NHS National Health Service, GP general practitioner, ED emergency department

several challenges for immigrants, mainly including language barriers (Han et al. 2009) and lack of knowledge of the system's organization (i.e., how to access these services) (Ozolins and Hjelm 2003). In the present study, to

Table 3 Satisfaction with health-care services use

| Characteristic | <i>N</i> | %* |
|---|----------|------|
| Satisfaction with health-care services use | | |
| GP | | |
| Yes | 540 | 87.1 |
| No | 80 | 12.9 |
| Specialist | | |
| Yes | 317 | 86.4 |
| No | 50 | 13.6 |
| ED/hospital | | |
| Yes | 305 | 62.2 |
| No | 185 | 37.8 |
| Barriers to health-care services access | | |
| Institutional level | | |
| Long waiting times for access to health-care services | 155 | 47.1 |
| Long waiting times for examination response | 37 | 11.2 |
| Geographical barriers, transport difficulties, and opening hours barriers | 24 | 7.3 |
| Individual level | | |
| Physicians' characteristics | 64 | 19.5 |
| Discrimination from being a migrant | 23 | 7 |
| Language barriers | 19 | 5.8 |
| Others | 4 | 1.2 |
| Structural/political level | | |
| Costs | 3 | 0.9 |

GP general practitioner, ED emergency department

* Percentages are calculated from the number of respondents to the question

sample immigrants, we referred to the third-sector and non-profit organizations (NPOs) that were mainly social service organizations and humanitarian agencies. In particular in southern Italy, the regular arrival of large waves of immigrants led the NPOs to work on migrant needs to facilitate access to public services, including health care. It seems, therefore, that, in our context, NPOs represent a culturally appropriate channel to increase and instill awareness about correct health-care habits and service access.

The study sample is restricted to immigrants only, but comparison with similar surveys conducted on general populations suggests that overall immigrants in our sample experience a similar level of health-care utilization compared with native citizens (Manuti et al. 2010, 2013), suggesting that immigrants in our area had adequate access to care. Foreign citizens registered with the Italian National Health Service (NHS) are guaranteed full assistance under the same conditions of Italian citizens, and it should be noted that the vast majority of the sample owned a regular stay permit.

Table 4 Logistic regression model results for estimates of association of outcomes of interest with variables potentially associated

| | Model 1. outcome | | Model 2. outcome | | Model 3. outcome | | Model 4. outcome | |
|---|---|-----------|--|-----------|--|-----------|--|-----------|
| | Access to GP | | Access to specialist | | Access to ED | | Hospital admission | |
| | Log-likelihood = -346.69, $\chi^2 = 82.96$, $p < 0.0001$, no. of obs. = 671 | | Log-likelihood = -448.16, $\chi^2 = 348.72$, $p < 0.0001$, no. of obs. = 930 | | Log-likelihood = -548.66, $\chi^2 = 189.31$, $p < 0.0001$, no. of obs. = 931 | | Log-likelihood = -410.53, $\chi^2 = 215.41$, $p < 0.0001$, no. of obs. = 935 | |
| | OR | 95 % CI | OR | 95 % CI | OR | 95 % CI | OR | 95 % CI |
| Gender | | | | | - | - | | |
| Male* | 1.00 | | 1.00 | | | | 1.00 | |
| Female | 1.67 | 1.09–2.55 | 4.04 | 2.72–6.01 | | | 2.65 | 1.73–4.06 |
| Age, continuous | - | - | 0.77 | 0.65–0.92 | 0.86 | 0.73 | 0.57 | 0.46–0.70 |
| Marital status | | | | | - | - | - | - |
| Married* | 1.00 | | 1.00 | | | | | |
| Other | 0.77 | 0.53–1.12 | 0.74 | 0.52–1.04 | | | | |
| Education level, ordinal | 0.78 | 0.56–1.08 | 1.61 | 1.23–2.12 | 1.41 | 1.09–1.83 | 1.27 | 0.93–1.72 |
| Employment status | | | | | | | | |
| Unemployed* | 1.00 | | 1.00 | | 1.00 | | 1.00 | |
| Housekeeper, caregiver | 1.46 | 0.71–3.02 | 0.63 | 0.41–0.96 | 0.62 | 0.44–0.88 | 0.34 | 0.22–0.53 |
| Manual worker | - | - | 0.43 | 0.26–0.69 | - | - | 0.45 | 0.27–0.76 |
| Sedentary worker | - | - | - | - | 1.43 | 0.78–2.63 | - | - |
| Chronic disease | | | - | - | | | - | - |
| No* | 1.00 | | | | 1.00 | | | |
| Yes | 3.71 | 2.41–5.71 | 2.69 | 1.92–3.78 | 2.33 | 1.72–3.16 | 2.36 | 1.65–3.38 |
| Current smoker | | | | | | | - | - |
| No | 1.00 | | 1.00 | | 1.00 | | | |
| Yes | 0.66 | 0.43–1.03 | 1.49 | 1.01–2.21 | 1.59 | 1.15–2.19 | | |
| Alcohol consumption in the previous 30 days | | | | | - | - | - | - |
| No* | | | 1.00 | | | | | |
| Yes | | | 1.24 | 0.86–1.79 | | | | |
| Physical activity | | | | | - | - | | |
| No* | 1.00 | | | | | | 1.00 | |
| Yes | 1.68 | 1.12–2.53 | | | | | 0.81 | 0.56–1.17 |
| Length of stay in Italy, ordinal | 1.11 | 0.94–1.31 | 2.03 | 1.72–2.39 | 1.80 | 1.57–2.07 | 2.02 | 1.70–2.42 |
| Nationality | | | | | | | - | - |
| European* | 1.00 | | 1.00 | | 1.00 | | 1.00 | |
| African | 0.62 | 0.37–1.06 | - | - | 1.47 | 1.01–2.15 | 1.67 | 1.05–2.67 |
| Asian | 0.50 | 0.29–0.87 | 0.29 | 0.19–0.44 | 0.42 | 0.28–0.63 | 0.64 | 0.39–1.06 |
| American | - | - | 2.78 | 0.84–9.25 | - | - | - | - |
| Legal status | | | | | - | - | - | - |
| Regular* | | | 1.00 | | | | | |
| Irregular | | | 0.48 | 0.27–0.87 | | | | |
| Children | | | | | - | - | | |
| No* | | | | | | | 1.00 | |
| Yes | | | | | | | 2.46 | 1.61–3.76 |

GP general practitioner, ED emergency department

* Reference category; education level: ≤ 7 yy = 1, 8–13 yy = 2, university degree = 3; length of stay in Italy: 1–2 yy = 1, 3–5 yy = 2, 6–8 yy = 3, ≥ 9 yy = 4

The heterogeneity and small size of immigrant subgroups represent methodological challenges in gathering information about immigrant health-care access (Rechel et al. 2012; Kraler and Reichel 2010). An additional difficulty includes an understanding of what factors classify an individual as an immigrant. At risk of oversimplification, several different categories can be distinguished: asylum seekers and refugees, victims of trafficking, students, migrant workers, and reunified family members. An obstacle encountered in our study was access to some strata, such as irregular immigrants. It is reported that they have difficulties accessing a regular supply of medication for chronic illnesses, experience difficulties accessing emergency care, and present late and in a more severe state of health both in primary care settings and hospitals (Castañeda 2009; Rousseau et al. 2008; Heldal et al. 2008).

About one-third of the participants in the study (31.7 %) were dissatisfied with the health-care services used and the most important reasons were long waiting times for access to health-care services and for examinations results, findings also confirmed by other studies (Arnold et al. 2014; Aung et al. 2010; Galanis et al. 2013). The main reasons for dissatisfaction seem to be similar to those expressed by native citizens. Indeed, despite the universal and comprehensive character of the National Health Service (NHS), many Italian citizens seek health care from private providers. According to the latest available data from the Italian National Institute of Statistics (Istituto Nazionale di Statistica 2013), 41.8 % of all specialist visits (dentist visits excluded) were paid out of pocket in 2012. Use of private providers for diagnostic services was lower, but still substantial (24.9 %). The main reported reason for using private health services, instead of NHS services, was greater confidence in the provider (physician or health facility), followed by avoidance of long waiting lists and better access. Therefore, it could be assumed that lack of or poor access to health services, both for immigrants and native citizens, is related to a poor socioeconomic situation. Indeed, it has been suggested that many health differences between migrants and non-migrants disappear when the socioeconomic status is taken into consideration (WHO Regional Office for Europe 2010).

Another barrier to health-care access described by migrant participants was real or perceived discrimination (7 %). Discrimination in health care could weaken trust within the patient-provider relationship and negatively impact the future behavior of those who believe they were discriminated against in the setting of health services (Ellis et al. 2008). Moreover, it should be pointed out that Italy is a country that receives a large number of migrants through official or unofficial means and rising xenophobic sentiments could be the result of a perceived threat to scarce

resources and a failure of governments to recognize the human development potential that can result from well-managed migration.

In the present study, Asian immigrants experienced a low access to GP, specialists, and ED that preclude their full participation in the health-care system. Previous studies demonstrated that Asian immigrants were less likely to come into contact with health-care services and the availability of interpreters may facilitate access to a full range of health-care services among Asian immigrants (Jacobs et al. 2001; Choe et al. 2006). Moreover, one of the main themes that emerged from the literature with respect to health-care access among Asian immigrants was linguistic discordance and health communication between the patient and provider (Clough et al. 2013). The term linguistic discordance in a health-care encounter is used for situations where the patient and practitioner do not comfortably speak the same language. The greater use of health services among the immigrant population from Africa could reflect a high frequency of health problems in this population. Several studies performed in European host countries show that immigrants from Sub-Saharan Africa have a worse health profile compared with other immigrant groups (Venters and Gany 2011; Sanz et al. 2011). Another important finding from the present study is that levels of acculturation and education appear to be associated with services utilization. As expected, the low educational attainment of immigrant groups is an obstacle to health-care services use. Low education may impair people's ability to navigate the complex health-care delivery system. Several studies have found that education is positively associated with health literacy which, in turn, affects the probability of using health services (Bennett et al. 2009; Berkman et al. 2011). This finding has relevant policy implications, as it suggests that more resources should be dedicated to health literacy promotion among low-educated groups to reduce disparities and improve the provision of patient-centered care (Hasnain-Wynia and Wolf 2010).

Strength and limitations of the study

The strengths of the study lie in the sampling of immigrants outside the health system, in the enrollment technique, and the high participation rate. The questionnaires were completed at the participants' own pace and in surroundings that were familiar to them, by a physician who was not involved in the provision of health care, in the presence of a linguistic and cultural mediator. This probably made participants feel safe enough to report both positive and negative aspects of the health care they received and their satisfaction with the support provided by the staff.

Furthermore, since linguistic and cultural mediators were available, immigrants who did not speak Italian or who had low literacy levels were not excluded from the study. The almost 99 % participation rate is extremely satisfactory and restricts one major potential source of bias in the results. The participation rate remains an important indicator of survey quality, and we believe that time and effort spent by survey researchers to improve it and the extreme importance of the topic surveyed has made this possible.

Several limitations to this work should be noted. First, we used a convenience sampling method, and this factor limits the generalizability of the results. Furthermore, we chose locations of focus due to logistical constraints, and, therefore, the study sample was composed of people connected to NPOs that assist migrant population and also mediated health-care encounters. Therefore, the views expressed may be different from migrants who have no such connection to those organizations. We found that the vast majority of participants had a regular residence permit and, consequently, health insurance coverage, and we acknowledge that irregular immigrants have been under-represented. Therefore, the sample may not be representative of all immigrants within the region, but only of those with a regular stay permit and connected to NPOs. Previous studies also emphasized the difficulty in accessing immigrants, in particular irregular ones (Castañeda 2009). The potential methods to recruit irregular immigrants could include the involvement of a key person in the immigrant community, who reassures the participants that there would be no repercussions resulting from participation in the study. The snowball sampling demonstrated the ability to include hidden sub-groups of population in a cost-effective manner. Moreover, it could be useful to identify researchers recruited from network or organizations advocating for irregular immigrations. Second, the descriptive measures of satisfaction with health-care services were derived from those receiving the service, and the barriers may be important reasons why some immigrants do not get the health care they need and may be prevented from accessing a service. However, a very small proportion of the participants ($n = 55$, 5.7 %) did not use health services at all, presumably because they did not perceive any health need. Therefore, although we asked reasons of dissatisfaction only to the subgroup who use health services, these represent the vast majority of our population (94.3 %).

Moreover, the cross-sectional design of our study could not capture temporal changes in the ability of immigrants to use and access health services. Data about utilization of health services were based on self-assessment by the immigrants during their stay in Italy and did not include objective measures, and therefore this information may be subjected to recall bias. It should be considered that for

immigrants, their past experience could have an important impact on their present experience. For example, those who come from countries with very limited access to health care might have lower expectations on care. We have attempted to minimize these biases by conducting the survey with the use of access measures that are less subjective and measure patient experience, not simply satisfaction. Finally, comparison with native citizens' health-care services utilization were derived from previously published studies.

Conclusion

Despite the limitations, this study yielded new and deeper insight into the patterns of health-care utilization among immigrants and adds to our understanding of the NPOs' role to facilitate immigrants' access to health-care services, contributing to the extensive discussion on how to best manage migrant health care in Italy.

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