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FIELD RESEARCH

Level of health literacy in a population of migrants and homeless people

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ABSTRACT

▶ **Background.** *Health literacy is the capacity to gain access to, understand and use information in order to promote and maintain good health. Higher levels of health literacy are associated with better health outcomes both at individual and community levels.*

▶ **Methods.** *The objectives of this study were to estimate the level of health literacy of patients presenting to the outpatient clinics of the Italian NGO Emergency in Milan and Marghera (VE), and to identify any characteristics associated with lower levels. Patients were interviewed in French, Spanish, English and Italian, in August 2023. Demographic data was collected, in addition to performing the Newest Vital Sign test in order to score participants' level of health literacy.*

▶ **Results.** *The sample (n = 75) demonstrated an important socio-economic precarity, with most participants being unemployed and undocumented. Only 5.3% of participants had an adequate level of health literacy; the majority (77.3%) had an inadequate level. No significant association was noted with any demographic or socio-economic characteristic.*

▶ **Conclusions.** *This patient population lived in severe socio-economic precarity and had extremely low levels of health literacy. Appropriate measures should be considered in order to improve these patients' healthcare navigation and use, and thereby their health outcomes.*

▶ **Key words.** *Migrants | asylum seekers | refugees | undocumented people | precarity | health literacy | medical literacy | information literacy | healthcare navigation.*

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BACKGROUND

The World Health Organization (WHO) defines health literacy as the capacity of individuals to access information, understand it and use it in ways which promote and maintain good health for themselves, their families and their communities[1]. Higher levels of health literacy are beneficial at both individual and social levels. Through better awareness, and by mobilising communities to act on the economic, social and environmental determinants of health, it is the entire society's health outcomes that are improved. In its 2009 ministerial declaration, the United Nations' Economic and Social Council stated that "health literacy is an important factor in ensuring significant health outcomes", and called for "the development of appropriate action plans to promote health literacy"[2]. Knowledge and un-

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derstanding are powerful tools for promoting health, empowering individuals and reducing health inequalities.

A 2019 study conducted among residents of Florence (Italy) found that 64% of participants had an adequate level of health literacy, 25% possibly had a limited level, and 11% had a high likelihood of limited health literacy. The risk of having an inadequate level was associated with increasing age, lower levels of education, and worse financial situations. Patients with higher levels of health literacy generally reported enjoying better health conditions[3]. In 2016, another study looking at the patient population of three Italian hospitals, showed that 46% of participants had an adequate level, 13% possibly had a limited level, and 41% probably had an inadequate level of health literacy. Patients with lower levels were at high risk of not being engaged in the provision of health services. Those who were older, less educated or facing financial difficulties were at particularly high risk of having limited health literacy[4]. These studies used the *Newest Vital Sign* (NVS)[5] to estimate health literacy levels. This test hasn't been used yet in the context of a migrant population in Italy.

The objectives of this study are: ▶**1.** to estimate the level of health literacy of a sample of patients attending Emergency's services; ▶**2.** to identify possible demographic or socioeconomic characteristics associated with higher risks of inadequate health literacy; ▶**3.** to make recommendations in order to improve the existing services and to promote patients' active engagement in their care.

METHODS

Study context

The Italian NGO Emergency is a humanitarian organisation founded in 1994 in Milan. Its objective is to provide free, high-quality healthcare to victims of war and poverty. Since 2006, Emergency's Italy Project (*Programma Italia*) provides free social support and healthcare to the most vulnerable groups. It is currently in operation in Brescia, Marghera, Milan, Naples, Castel Volturno, Rosarno, Ragusa and Sassari. Various forms of adversity and exclusion, bureaucratic, administrative, language and cultural barriers, poor awareness of their own rights and legal inadequacies keep many people from accessing the National Health System (*Servizio Sanitario Nazionale*). Emergency's objective is hence twofold, in conformity with article 32 of the Italian Constitution. Firstly, to defend health as a fundamental right of individuals, and a benefit for society. Secondly, to provide free healthcare to the most deprived groups. Emergency's patients often experience both socioeconomical precarity and vulnerability in health. *Programma Italia* offers primary healthcare, nurse services, health promotion, linguistic and cultural mediation, socio-sanitary orientation, and psychological support.

It is a multicentred, prospective, observational study, conducted in the Mobile Clinic of Milan and the Clinic of Marghera.

Study design

The present work is a multicentred, prospective, observational study. It was part of a quality improvement scheme in two projects of *Programma*

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Italia (the Mobile Clinic of Milan and the Clinic of Marghera) conducted by Eurydice Costopoulos, a third-year medical student from Imperial College London, in August 2023.

The Institutional Review Board of the NGO Emergency reviewed and approved the design and procedures of the study. This project was partially funded through the Imperial College London Professional Project Fund.

Tools

The NVS identifies patients with limited health literacy at an acceptable precision level.

The NVS is a screening tool developed by Pfizer Inc. in 2005 to identify patients at risk of having low health literacy levels. It is recommended for use in primary healthcare contexts. It has been used in over 25 peer reviewed studies in the world, in populations of various ages, ethnicities, socioeconomic status and health conditions[5]. A 2010 systematic review found the NVS to identify patients with limited health literacy at an acceptable precision level[6]. Initially developed in English and Spanish, the NVS was approved in Italian in 2015[7], and in French in 2018 by Canadian researchers[8]. The NVS uses the nutritional label of an ice cream container, which remains available to the patient during the entire interview. The examination consists of six questions, which include calculations on the nutritional values of the ice cream, and understanding of its ingredients in the context of allergies. The test is performed orally and lasts three minutes on average. The number of correct answers translates into a score, from 0 to 6, which is then used to evaluate the patient's level of health literacy. A score of 0-1 suggests a high probability of limited literacy; a score of 2-3 indicates the possibility of limited literacy; a score of 4-6 very probably signals an adequate literacy.

Data collection

All patients who attended Emergency's clinics during the enrolment period were considered for participation in the study. The inclusion and exclusion criteria are summarised in table I. The aim and methods of the study were explained to participants, and they were invited to sign an informed consent form. A survey was then administered to collect their demographical and socioeconomical characteristics, and their self-reported state of heath. The information collected was: sex, age, country of origin, native language and any other language spoken, time living in Italy and in Europe,

Table I. **Inclusion and exclusion criteria for participants.**

Inclusion criteria	Exclusion criteria
• Age ≥ 18 years • Being registered in Emergency's records • Speaking one of the four languages of the test (Italian, English, Spanish, French) at a sufficient level • Being able to read in this language	• Having a cognitive impairment • Having difficulties in communication (such as: visual or hearing problems that would have impacted performance in the test; issues in communicating the answers) • Declining to undergo the test

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education level, legal status in Italy, and employment status (table A of the appendix). The survey was administered orally by the interviewer, in the language chosen by the participant between Italian, English, Spanish and French. This dialogue lasted approximately five minutes, and was followed by the administration of the NVS test in the preferred language.

Data analysis

The data were categorised and analysed using descriptive statistical methods, such as frequences and percentages for categorical variables, and means and intervals for continuous variables. Fisher's exact test was used to gauge the associations between considered variables. The observations were considered to be statistically significant for p-values <0.05.

RESULTS

Seventy-five patients were enrolled (figure 1).

Table II summarises the demographic characteristics of the study population. Males and females were represented in equal proportions. The sample encompassed all ages. Most participants spoke Italian, but less than half spoke English. On average, participants had been living in Italy or Europe for a few years. Most participants were African or Latin American. Few Asian patients participated, mainly due to the language barrier.

Most participants were African or Latin American.

With the exception of one participant, all had at least completed primary education, and over a quarter (27%) had followed tertiary education.

Participants who were older in age or had been living in Italy for longer, spoke Italian in a larger proportion than those who were younger or had been living in Italy for less time (table III).

Figure 1. Sample selection process.

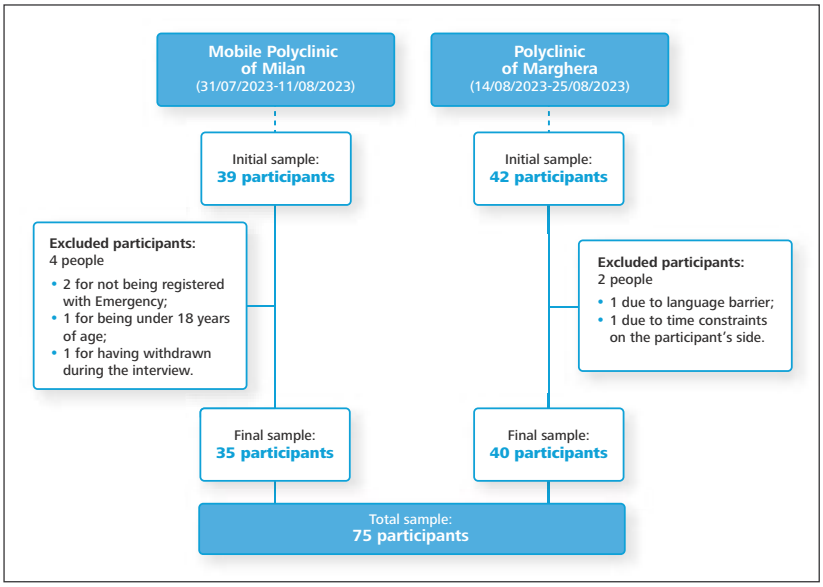

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Table II. General demographic information.

	N (%)
Total	**75 (100)**
Female	37 (49)
Male	38 (51)
Speaking Italian	50 (67)
Speaking English	34 (45)

	Mean	Lowest	Highest
Age	40 years	18 years	73 years
Time living in Italy (excluding Italian participants)	8 years	1 week	43 years
Time living in Europe (excluding European participants)	7 years	1 week	44 years

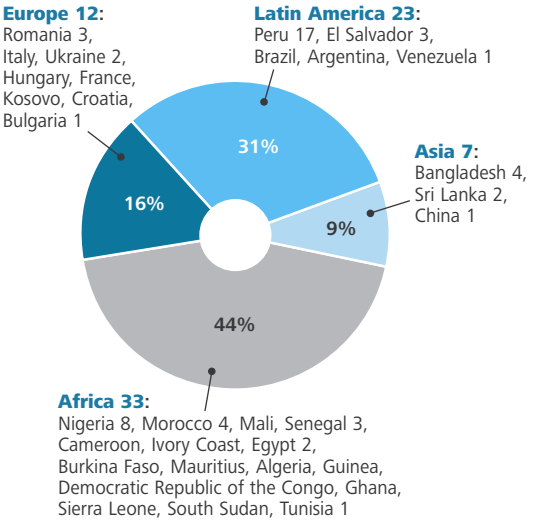

Table III. Knowledge of Italian, by age range and by time living in Italy.

		Speaking Italian n (%)	Not speaking Italian n (%)
Age range (p = 0.006)	≤ 30 years (n = 23)	9 (39)	14 (61)
	31-40 years (n = 17)	13 (76)	4 (24)
	41-50 years (n = 17)	12 (71)	5 (29)
	≥ 51 years (n = 18)	16 (89)	2 (11)
Time living in Italy (p < 0.0001)	< 1 year (n = 23)	3 (13)	20 (87)
	1-2 years (n = 15)	12 (80)	3 (20)
	3-10 years (n = 13)	11 (85)	2 (15)
	> 10 years (n = 24)	24 (100)	—

Most participants were not in conformity with the Italian residency laws (table IV). Only three people were Italian citizens. Most African and Latin American participants were illegally present in Italy, whereas 75% of European participants had a legal residency status. Younger participants (≤30 years old) and those who had been living in Italy and Europe for less time (≤2 years) were more likely not to comply with the Italian residency regulations.

Half of participants were unemployed; one quarter were working in the informal sector, without a contract (table V). Only one quarter were legally employed, with a contract. Younger participants (≤30 years old) were more frequently unemployed, as were those who didn't speak Italian, and those who had been living in Italy or Europe for under a year. People with illegal migration status were predominantly unemployed or working in the informal sector (black market).

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Table IV. Legal status, by age range and by continent of origin.

		Extra-communitarian undocumented n (%)	Extra-communitarian documented n (%)	Communitarian undocumented n (%)	Communitarian documented n (%)	Italian citizen n (%)
		40 (54)	25 (33)	3 (4)	4 (5)	3 (4)
Age range (p = 0.041)	≤ 30 years (n = 23)	16 (70)	4 (17)	—	3 (13)	—
	31-40 years (n = 17)	9 (53)	8 (47)	—	—	—
	41-50 years (n = 17)	8 (47)	7 (41)	1 (6)	1 (6)	—
	≥ 51 years (n = 18)	7 (39)	6 (33)	2 (11)	—	3 (17)
Continente di origine (p < 0.0001)	Africa (n = 33)	22 (67)	11 (33)	—	—	—
	Asia (n = 7)	3 (43)	4 (57)	—	—	—
	Latin America (n = 23)	15 (65)	7 (30)	—	—	1 (4)
	Europe (n = 12)	—	3 (25)	3 (25)	4 (33)	2 (17)

Table V. Employment status, by age range, by knowledge of Italian, by legal status and by time living in Italy and in Europe.

		Unemployed n (%)	Informal (black) market n (%)	Fixed-term contract n (%)	Open-ended contract n (%)
		36 (48)	19 (25)	10 (14)	10 (13)
Age range (p = 0.014)	≤ 30 years (n = 23)	16 (70)	1 (4)	4 (17)	2 (9)
	31-40 years (n = 17)	4 (24)	6 (35)	2 (12)	5 (29)
	41-50 years (n = 17)	8 (47)	4 (24)	2 (12)	3 (18)
	≥ 51 years (n = 18)	8 (44)	8 (44)	2 (11)	—
Knowledge of Italian (p = 0.001)	Speaking Italian (n = 50)	16 (32)	18 (36)	8 (16)	8 (16)
	Not speaking Italian (n = 25)	20 (80)	1 (4)	2 (8)	2 (8)
Legal status (p = 0.000)	Documented (n = 32)	11 (34)	2 (6)	10 (31)	9 (28)
	Undocumented (n = 43)	25 (58)	17 (40)	—	1 (2)
Time living in Italy (p = 0.002)	< 1 year (n = 23)	19 (83)	2 (9)	—	2 (9)
	1-2 years (n = 15)	6 (40)	6 (40)	2 (13)	1 (7)
	3-10 years (n = 13)	2 (15)	3 (23)	4 (31)	4 (31)
	> 10 years (n = 24)	9 (38)	8 (33)	4 (17)	3 (1)
Time living in Europe (p = 0.000)	< 1 year (n = 20)	17 (85)	2 (10)	—	1 (5)
	1-2 years (n = 14)	8 (57)	5 (36)	1 (7)	—
	3-10 years (n = 12)	1 (8)	3 (25)	4 (33)	4 (33)
	> 10 years (n = 29)	10 (34)	9 (31)	5 (17)	5 (17)

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Only one third of participants (33%) were able to undergo the NVS test in their native language. For most, it was performed in a foreign language. Seventy-seven percent (n = 58) of participants were found to be at high risk of having an inadequate health literacy level. Seventeen percent (n = 13) possibly had a limited level. Only 5% (n = 4) were very likely to have an adequate level (figure 2).

The NVS scores distribution suggested a slightly better health literacy level among women. Yet, results were not adequate for 92% of them, and the difference compared to men was not statistically significant. Likewise, the risk of inadequate health literacy appeared to be higher for older people, although not to a statistically significant extent. Performing the test in the participant's native language slightly improved results, albeit not significantly.

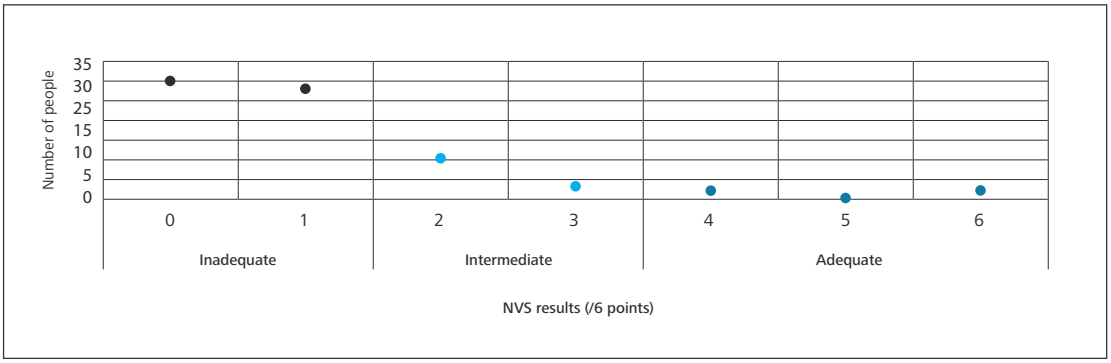
Besides, the NVS scores were not significantly correlated with any of the four languages in which the test was administered, with the length of stay in Italy or Europe, with the legal status, with the education level, with the employment status, or with participants' continent of origin.

DISCUSSION

The NVS results show that only 5% of participants had an adequate health literacy level, and three out of four people were at high risk of limited literacy. The mean score was inadequate (1/6, six being the best score). Men, elderly people, and those who did not undergo the test in their native language had generally worse results, though these observations were not statistically significant. Our results (77% of participants having an inadequate level of health literacy) are considerably worse than the findings recorded in other Italian studies (41% and 12%) that looked at different population groups[3,4].

The patients attending the considered clinics have difficulties in understanding medical information (for example, body organs, medical investigations, disease names, drug types or health advice). They may not have the essential skills to understand and act in respects to their own health, nor to confront the economic, social and environmental determinants of individuals' and communities' health. Consequently, they may depend largely on others for their own and their surroundings' health.

Figure 2. **Breakdown of the NVS results (n = 75; p = 0.000).**



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This study has various limitations. Above all, the limited sample size does not allow for a confident interpretation of the associations between variables. Moreover, the limited number of languages in which the test could be performed excluded from the study the patients who did not speak any of them (such as the Bengali- and Arabic-speaking communities). The patients who did not know how to read (i.e. with a lower level of education) were excluded. The NVS score could also have been influenced by the fact that, in most participants' case, the interview language was not their native language (nor, probably, their language of education). Furthermore, the socio-demographic data (such as the level of education) was based on the information provided by participants themselves. The conditions in which the interview and test were administered were often suboptimal in terms of calm, privacy and available time, due to the concurrent activity of the clinics. Lastly, only patients were included, thereby excluding the escorts (relatives, carers, etc.) who are usually involved in the patients' care.

This work should be treated as a preliminary, feasibility study. Further research, by using larger samples and examining different sites and contexts, could improve our understanding of the links between health needs, help-seeking abilities, and health outcomes. It would also be valuable to estimate the levels of health literacy of escorts, caregivers, and illiterate patients. Nevertheless, our findings allowed us to make a few recommendations. The suggested interventions still need to be trialled in clinical practice.

CONCLUSIONS

This sample, despite its limited size and patient characteristics, highlighted the serious precarity of this population group, economically, socially, and in terms of health.

The NVS results demonstrated an extremely low level of health literacy. Most of Emergency's patients who were included in the study appear to be facing difficulties in understanding care plans, in navigating the healthcare system and in engaging with healthcare workers. R&P

Acknowledgements
We would like to thank the staff working in Emergency's clinics of Milan and Marghera for their help and guidance.

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APPENDIX

RECOMMENDATIONS

- Advising the patient to write down their questions before the appointment.
- Encouraging the patient to be accompanied by someone they trust (such as a friend or a relative).
- Having enough time in each appointment to explain calmly and clearly.
- For patients who don't speak the local language well or at all, ensuring an interpreter is available and planning enough time during the appointment for translation (generally twice the normal time).
- The "health literacy universal precautions": presuming all patients to have difficulties in understanding medical information and in accessing healthcare services, until proof of the contrary.
- Using open-ended questions.
- Using simple terms, avoiding technical jargon.
- Focusing on the most important information, and explaining to the patient why it is significant for them.
- Discussing the most important information at the beginning of the appointment.
- Regularly asking the patient if they have understood so far and whether they have any questions.
- The teach-back method: asking the patient to repeat the explanations with their own words to verify they understood correctly.
- Making sure the information is understandable in the patient's culture.
- Identifying and correcting erroneous beliefs or thoughts about health.
- Presenting numbers in a way where the highest number corresponds to the best value.
- Working in partnership with the patient to define objectives and take decisions.
- Giving educational materials that use a simple language, that engage the reader, that look, and are, easy to read.
- Using visual tools (pictograms, images, icons, graphics, videos...) in addition to oral and written information.
- Being careful about the use of electronic resources (internet, websites, apps...) and ensuring the patient knows to use them before recommending them.
- Linking the patient to local support groups.
- Educating the patient's escort (family, friends, carers, etc.) in addition to the patient themselves.
- Promoting a sense of control, through activities or tasks that patients can do to manage their disease themselves.

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Table A. Data and information collected.

Information	Categories or classifications	Additional information
Sex	M – Male	
	F – Female	
Age	≤ 30 years	
	31 – 40 years	
	41 – 50 years	
	≥ 51 years	
Country of origin		If the patient has more than one nationality or citizenship, the country chosen is the country of birth.
Continent of origin	Africa	
	Asia	
	Latin America	
	Europe	
Native language		
Other languages spoken		All the languages mentioned by the participant are included, without estimating the proficiency level in the language.
Number of languages spoken		Native language in addition to the number of foreign languages spoken.
Knowledge of Italian	Speaking Italian	The patients who speak Italian at a basic level but are able to communicate are included in the "speaking Italian" group.
	Not speaking Italian	
Time living in Italy	< 1 year	Italian participants are included in the "> 10 years" group.
	1 – 2 years	
	3 – 10 years	
	> 10 years	
Time living in Europe	< 1 year	European participants are included in the "> 10 years" group.
	1 – 2 years	
	3 – 10 years	
	> 10 years	
Level of education	No formal education	To compare the education systems of different countries, patients give the number of years spent in school or the age at which they left education. The level assigned is the equivalent in the Italian system.
	Primary school	
	Secondary school	
	Further education	
Legal status	Extra-communitarian undocumented	"Communitarian" refers to citizens of the European Union. "Documented" refers to having the legal documents for residency in Italy (for example being resident, asylum seeker, refugee...) at the moment of the interview.
	Extra-communitarian documented	
	Communitarian undocumented	
	Communitarian documented	
	Italian citizen	

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Tabella A. Data and information collected.

Information	Categories or classifications	Additional information
Employment status	Unemployed	"Informal (black) market" refers to any work without a contract. Sometimes, the difference between "fixed-term" and "open-ended" contract was not understood by participants. Therefore, we grouped together all those employed with a contract.
	Informal (black) market	
	Fixed-term contract	
	Open-ended contract	
Language of the test	English	The language is chosen by the participant as the one they best speak or read, even if it isn't their native language.
	French	
	Italian	
	Spanish	
NVS results	0-1 points: inadequate	"Inadequate": high likelihood of limited health literacy. "Intermediate": possibly limited health literacy. "Adequate": almost always adequate health literacy.
	2-3 points: intermediate	
	4-6 points: adequate	