

# Health Literacy of Migrant Workers in Saudi Arabia: A Cross-sectional Survey

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## Abstract

**Background:** Gulf nations employ large numbers of migrant workers. In Saudi Arabia, for example, migrant workers comprise 30% of its total population. However, the health literacy levels of these workers are reported to be low, and studies focusing on this topic are limited.

**Objective:** The aim of this study is to assess the level of health literacy of migrant workers in Saudi Arabia.

**Methods:** A convenience sample of 127 migrant workers in Saudi Arabia were surveyed using the Brief Health Literacy Screening Tool (BHLST) from September 2019 to November 2019. A comparison of the BHLST scores of the participants was performed. This study adhered to the STROBE checklist.

**Key Results:** Out of the 127 respondents, 28 reported experiencing health problems, such as hypertension, diabetes mellitus, back pain, hepatitis A, rheumatic disorders, allergy, headache, kidney disease, and colitis. The majority of the participants (55.12%) had inadequate overall health literacy levels, 31.50% had marginal health literacy levels, and only 13.38% had adequate health literacy levels. Among the 13.38% participants who had adequate health literacy, more Arabic-speaking individuals than their non-Arabic-speaking counterparts had adequate health literacy by percentage.

**Conclusion:** Overall, the findings of the study revealed that most migrant workers had inadequate or low health literacy levels, as indicated by their BHLST scores. The health authorities in Saudi Arabia and other Arab countries need to develop health literacy interventions geared toward increasing the health literacy levels of their migrant workers.

**Keywords:** Brief health literacy screening tool; Expatriate workers; Health literacy; Migrant workers; Saudi Arabia

## Introduction

Health literacy plays an important role in addressing health challenges at a variety of levels in the international and global context (1). According to the World Health Organization, the improvement of health literacy and the achievement of the health literacy needs of the most underprivileged and marginalized societies will accelerate progress in reducing global health inequities (2). The United Nations Population Fund reports that 244 million people live outside their country of origin (3). The results of a recent study showed that 13%–30% of migrant workers are uneducated and that among hospital patients, a misunderstanding of prescription labels is common (4). Moreover, only a few studies on this topic have been conducted in the country (4,5), and no research has been done concerning the health literacy of migrant workers.

The findings of a study in the US suggest that various instruments (e.g., Rapid Estimate of Adult Literacy in Medicine, Test of Functional Health Literacy in Adults, 4-Item Brief Health Literacy Screening Tool) measure health literacy differently and are likely conceptually different (6). As healthcare providers, including physicians, often have difficulty identifying the health literacy status of their patients (7), it is imperative for healthcare providers to have a tool that accurately identifies patients who have low health literacy levels (8). In the present study, the Brief Health Literacy Screening Tool (BHLST) was used to assess the health literacy of Arabic- and non-Arabic-speaking migrant workers in Saudi Arabia.

## Background

The United States Department of Health and Human Services defines literacy as a person's ability to read, write, speak, and compute and solve problems at levels necessary to function on the job and in society, achieve one's goals, and to develop one's knowledge and potential (9). The scope of health literacy is established by the Institute of Medicine (2004) in their consensus study report as the degree to which individuals have the capacity to obtain, process, and understand basic health information, and the services needed to make appropriate health decisions. The Calgary Charter on Health Literacy indicates that these skills comprise of writing, reading, speaking, listening, numeracy, and critical analysis including interaction and communication skills (10).

Basic literacy must be achieved by individuals before they can fully achieve health literacy. However, health literacy, as defined by the Institute of Medicine and the United States Department of Health and Human Services, requires a variety of other skills; studies in the US have shown that the majority of healthcare clients have a poor understanding of health and illness (11,12). About one-quarter of adults in the US have low health literacy (13). The Institute of Medicine categorizes health literacy skills into cultural and conceptual knowledge, oral literacy, print literacy, and numeracy, forming a level of competency required of successful healthcare consumers (14). As health literacy as a concept is relatively new to

the Gulf states, particularly Saudi Arabia, research on it is scarce (15). Moreover, while migrant workers are considered transient residents, their health concerns and the potential effects of these on the health of the Saudi population mandate that their needs be addressed.

In a recent systematic review, it was found that as the population of the EU diversifies, new challenges on the delivery of healthcare emerge because of migrants' health literacy (16). In the Arab region, International Labor Organization reported that about 17 million people are migrant workers (17). Most of them come from Southeast and South Asian countries, such as Bangladesh, India, Nepal, Pakistan, and the Philippines (18). International Federation of Human Rights indicated that 2003As of 2003, Saudi Arabia has approximately six million migrant workers, representing more than 50% of its total working population (19); this number recently increased to 10 million (20).

## Objective of the Study

The aim of this study is to assess the level of health literacy of migrant workers in Saudi Arabia. It also seeks to determine the differences in health literacy levels between Arabic- and non-Arabic-speaking participants.

## Methods

### Research Design

This quantitative and cross-sectional study used a questionnaire survey. The study adhered to the STROBE guidelines.

### Sample and Setting

A convenience sample of 127 male migrant workers responded to the questionnaire at commercial venues in Riyadh, Saudi Arabia. The investigators randomly approached migrant workers and requested them to respond to four questions about accessing healthcare and their basic demographic data using the BHLST. Included in the study were (1) non-citizen workers, (2) those currently employed during the recruitment period, and (3) any nationality with a valid residence card. Individuals with Saudi citizenship were excluded from participating in the study.

### Ethical Approval and Data Collection

After receiving ethical approval from the Institutional Review Board of a Saudi university, the researchers approached migrant workers in commercial venues to invite them to participate. Information on the study was provided to the participants, and they were given time to ask questions about the study. The privacy and confidentiality of the participants were ensured by anonymizing the data collection and obtaining the participants' informed consent. The researchers then orally read and completed the questionnaires based on the participants' responses. The data gathering period was from September 2019 to November 2019.

### Instrumentation

The BHLST, a well-tested instrument developed to identify primary care clients with low health literacy skills (21), was utilized in this study. The BHLST was developed by the Veterans Administration of the United States as a screening tool for the identification of healthcare clients who have limited ability to function in primary care settings. The method of scoring in this inventory allows a possible score range of 4 to 20. The levels of health literacy are classified as inadequate (score: 4–12), marginal (score: 13–16), and adequate (score: 17–20). The reliability and validity of the tool have been established in a variety of settings and populations, and the tool has been translated into a number of languages (21,22, 23).

### Data Analysis

The collected data in this study were entered into SPSS version 23.0 for data analysis. Descriptive statistics were used to fully describe the demographic variables of the migrant workers. Frequency and percentage were also calculated to determine the responses of the participants to the four items in the BHLST. A comparison of the BHLST scores of Arabic- and non-Arabic-speaking participants was performed.

## Results

A total of 150 questionnaires were distributed during the recruitment period. Only 135 surveys were returned, of which eight had substantial missing data and were therefore excluded from the analyses. The response rate was 84.67%. A summary of the respondents' demographic profiles is shown in Table 1. Out of the 127 participants, the majority (40.16%) belonged to the 31- to 40-year-old group. Most respondents speak Arabic (44.88%), whereas a few speak Urdu (18.90%), Hindi (13.38%), Filipino (13.38%), and Bengali (9.45%). Most of them have been working in Saudi Arabia for five years and more (48.82%), with the highest proportion of participants working as sales personnel (25.98%).

As shown in Table 2, the majority of the participants do not wear eyeglasses (77.95%), do not report any health problems (77.95%), and seek medical consultation in clinics (56.70%). Out of the 127 respondents, 28 reported experiencing some health problems, such as hypertension (7.09%), diabetes mellitus (6.30%), back pain (1.57%), hepatitis A (1.57%), rheumatic disorders (1.57%), allergy (1.57%), headache (0.79%), kidney disease (0.79%), and colitis (0.79%).

The health literacy scores of the participants by their mother tongue, number of years in Saudi Arabia, and education are summarized in Table 3. Participants who speak the Arabic (13.18%) and Filipino (14.63%) languages and those with secondary education (13.50%) had marginal health literacy levels. Those who speak Hindi, Urdu, and Bengali had inadequate health literacy levels. Participants who are illiterate, able to read and write, and with primary education, as well as those who worked in Saudi Arabia from one year to more than five years, had inadequate health literacy levels.

The majority of the participants had inadequate overall health literacy levels (55.12%), 31.50% had marginal health literacy levels, and only 13.38% had adequate health literacy levels. A comparison of the health literacy between Arabic and non-Arabic-speaking participants showed that the majority of both groups had inadequate health literacy levels, whereas only 15.79% of the Arabic speakers and 11.23% of the non-Arabic speakers had adequate levels of health literacy (Table 4).

**Table 1. Demographic Profile of the Respondents (N = 127)**

Demographic Profile	f	%
Age (years)		
21–30	37	29.13
31–40	51	40.16
41–50	22	17.32
51–60	17	13.39
Mother Tongue		
Arabic	57	44.88
Urdu	24	18.90
Hindi	17	13.38
Filipino	17	13.38
Bengali	12	9.45
Number of Years in Saudi Arabia		
1–2 years	27	21.26
3–4 years	38	29.92
5 years and above	62	48.82
Education		
Illiterate	11	8.66
Read and Write	29	22.83
Primary	33	25.98
Secondary	54	42.52
Occupation		
Sales	33	25.98
Maintenance	22	17.32
Construction	15	11.81
Driver	15	11.81
Cleaner	14	11.02
Laborer	12	9.45
Tailor	8	6.30
Waiter	8	6.30

Table 2. Health Problem Profile of the Respondents (N = 127)

Health Problem Profile	f	%
<b>Wears Eyeglasses</b>		
Yes	28	22.05
No	99	77.95
<b>Presence of Health Problems</b>		
Yes	28	22.05
No	99	77.95
<b>Self-reported Health Problems</b>		
Hypertension	9	7.09
Diabetes mellitus	8	6.30
Back pain	2	1.57
Hepatitis A	2	1.57
Rheumatic disorders	2	1.57
Allergy	2	1.57
Headache	1	0.79
Kidney disease	1	0.79
Colitis	1	0.79
<b>Medical Facility for Consultation</b>		
Clinic	72	56.70
Pharmacy	37	29.13
None	18	14.17

Table 3. BHLST Scores of the Respondents (N = 127)

Selected Demographic Profile	Score
<b>Mother Tongue</b>	
Arabic	13.18
Hindi	12.53
Urdu	9.96
Filipino	14.63
Bengali	10.50
<b>Number of Years in Saudi Arabia</b>	
1–2 years	12.89
3–4 years	12.29
5 years and above	12.13
<b>Education</b>	
Illiterate	8.64
Read and write	11.38
Primary	12.26
Secondary	13.50

Table 4. Overall BHLST Scores of Arabic vs. Non-Arabic Speakers by Percentage

Health Literacy Level	BHLST Score	Arabic	Non-Arabic	Overall
Inadequate	4–12	48.82	60.00	55.12
Marginal	13–16	35.43	28.57	31.50
Adequate	17–20	15.75	11.23	13.38

## Discussion

This study assessed the levels of health literacy of migrant workers in Saudi Arabia using the BHLST. Based on the BHLST scores, a large proportion of the study sample is not capable of communicating with and utilizing healthcare providers as well as navigating the healthcare system at optimum levels in Saudi Arabia. The important findings revealed by the study would inform health authorities about migrant workers' level of health literacy, which could lead to the creation of a health literacy program in the country.

The results indicated that only 13.38% of the participants had adequate levels of health literacy, a few had marginal levels of health literacy, and the majority had inadequate overall levels of health literacy. The reason for this result could be linked to the low level of education of the participants; most of them never reached the secondary level of education. Similarly, a systematic review of 85 US studies with 31,129 subjects reported the prevalence of a low health literacy level between 0% and 68%, and this was associated with age, ethnicity, and level of education (24). Having a low level of education, especially below the secondary level, has been related to having inadequate or low levels of health literacy (5, 25, 26).

In particular, the results are comparable to those of a recent study conducted in Saudi Arabia in which out of the 3,557 residents surveyed, approximately half were classified as having low health literacy (5,7). However, the results obtained by Alkhadi et al, contradict those of this study; in their research, out of 123 participants, 84.4% had adequate health literacy (27). The contradictory results could be attributed to the disparity in educational level of the two studies. In this study, most participants had a below secondary level of education, whereas in the other study, most of the participants were between the high school and college levels (5,27). These observations were also reported in previous studies, so it is important to further evaluate the utility of the BHLST in various patient populations, such as that in the present study, including those with low health literacy (14,28). Moreover, in a recent study in Catalonia, Spain, 84.6% of the 2,433 research participants showed sufficient health literacy (25). However, the results of the present study are supported by the research conducted by Bishop et al, in which Spanish participants were found to have inadequate literacy in terms of the ability to read medical materials (29). Meanwhile, the results of a study in Bangladesh showed that a low level of health literacy was reported by the majority of its 1,500 respondents (30). Furthermore, the results are supported by those of Das et al, in which Bengali-speaking workers had a BHLST score of only 10.50, indicating inadequate health literacy (30).

In the present study, the results revealed that the participants who have been working in Saudi Arabia for five years and more, who comprise the majority of this population, had lower BHLST scores than those who have been working in the country for less than five

years. Additionally, Hindi- and Urdu-speaking participants reported inadequate health literacy, whereas Arabic- and Filipino-speaking participants showed marginal health literacy. Moreover, given that approximately one in four participants wears eyeglasses, indicating insufficient vision, a verbal way of determining health literacy is warranted among migrant workers in Saudi Arabia. This result is consistent with those of previous studies suggesting the greater importance of having a verbal screening tool that does not depend on vision or reading fluency (28, 31). Most participants in this study reported having health problems and sought medical consultation in clinics in Riyadh, Saudi Arabia. Most of them do not have access to hospitals because it is not covered by their health insurance from their employers. According to Alkhamis and Miraj that the despite enormous positive developments in the field of healthcare in Saudi Arabia, such as the introduction of a compulsory health benefit scheme for all (e.g., health insurance), little is known about the association between the demographic characteristics and health status of uninsured migrant workers in Saudi Arabia (32). In the same study, the results showed that the demographic profiles, including age, education, nationality, and language, of expatriate workers are associated with their health status, which could affect their health insurance (16,31).

Additionally, the participants of the present study claimed that while having medical consultation at private clinics, they could not understand the language (English) used in communicating with them as well as the medical terms used. About a quarter of the participants also reported having health problems, such as hypertension, diabetes mellitus, back pain, hepatitis A, rheumatic disorders, allergy, headache, kidney disease, and colitis. These results are contradictory to those of a previous study in which the majority of older adult participants in Greece, Hungary, and the Netherlands had either single or multiple reported health problems (33). The contradictory findings may be attributed to the fact that older adults present more health problems as a result of their advancing age (32,34), whereas the majority of the participants in the present study are young adults aged between 31 and 40 years old. Our results are comparable to those of a previous study in Lebanon in which the mean age of the study sample was 37.5 years; however, most of the participants in such study were educated, as they completed university degrees, and they reported higher levels of health literacy (15).

Specifically, this study also compared the health literacy level between Arabic- and non-Arabic-speaking participants. Collectively, non-Arabic-speaking workers accounted for the majority (55.12%) of the study participants, whereas Arabic-speaking participants accounted for 44.88% of the sample. The results showed that the majority of both groups of participants had inadequate levels of health literacy. Subsequently, the overall results indicated that migrant workers in Riyadh, Saudi Arabia had inadequate health literacy levels. Only a few Arabic-speaking (15.79%) and non-Arabic-speaking (11.23%) participants

had adequate health literacy levels. Based on the results, more Arabic-speaking participants had adequate health literacy than their non-Arabic-speaking counterparts. Overall, only 13.38% had adequate health literacy, a result that is similar to that of another study in which out of 406 participants, only 13.7% had adequate health literacy levels (35). A few underlying reasons could be related to the participants' low level of education, having occupations not related to the health and science fields, and difficulties speaking and understanding English and medical terms. These language and knowledge barriers related to the inadequacy of health literacy among migrant workers could lead to their poor access to health services and reduced health outcomes. Such underlying reasons are supported by a recent case study in which migrant health workers who received health information from health professionals and staff showed higher health literacy levels compared with general migrants in Thailand (36). In another study, the variations in the use of instruments measuring health literacy were examined, and increased age, low education, a minority status, and a self-reported poor reading level were found to be associated with low health literacy depending on the instrument used (21). Additionally, a study in Australia reported that the healthcare team must consider the communication style of migrants from culturally diverse backgrounds in seeking and accessing healthcare, which could affect the delivery of care and health outcomes (37). The lack of linguistic harmony between healthcare providers and patients serves as a considerable barrier to the delivery of care in Saudi Arabia (38). Lastly, the widespread healthcare illiteracy among ethnic communities poses the burden of language and cultural barriers, in which available data suggest that health literacy may be a stronger predictor of health outcomes than socioeconomic factors, such as education level, employment, income, and race/ethnicity (39).

### Limitations of the Study

The sample of this study represents a wide variety of occupations and ages. However, all participants are males and may not be representative of the needs of female migrant workers. The sample is a relatively small convenience sample because of the limited access to this minority population and may not represent a proportional distribution of the demographic characteristics of the country's entire expatriate population.

### Conclusion

Overall, most migrant workers in this study had inadequate or low levels of health literacy, as indicated by their BHLST scores. Furthermore, although this group accounted only for less than a quarter of the total number of participants, the comparison analysis showed that more Arabic-speaking participants had adequate health literacy compared with their non-Arabic-speaking counterparts by percentage. These results serve as a call for health authorities in Saudi Arabia and those in other Arab countries to develop health literacy interventions geared toward increasing the levels of health literacy of migrant workers. Correspondingly,

other countries in the world can benefit from the results, especially those that have minority migrant workers with low levels of health literacy and whose nationalities are similar to those studied in this work.

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