Investigation of Health Literacy Levels and Related Factors Among Staff Working in a Teaching and Research Hospital

Bir Eğitim Araştırma Hastanesinde Çalışan Personelde Sağlık Okuryazarlık Düzeyi ve İlişkili Faktörlerin Araştırılması

Araştırma
Research

Zeynep Özün Erinç[1], İsmail Çifçi[2], Hülya Parıldar[3], Umut Gök[4]

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Abstract

Introduction: Health literacy (HL) enables individuals to understand and interpret health information and make effective decisions. Among hospital personnel, HL improves the efficiency of healthcare services by ensuring effective patient communication, patient safety and treatment adherence. This study aims to assess HL levels and associated factors among personnel working in a teaching and research hospital in İzmir.

Method: This cross-sectional and descriptive study was conducted through face-to-face interviews with 207 hospital personnel working at Tepecik Training and Research Hospital. Data were collected using a researcher-designed questionnaire that included sociodemographic information, hand hygiene, mask use, and health-related attitudes and behaviours. In addition, the European Health Literacy Survey Questionnaire Short Form (HLS-EU-Q16) was used.

Results: The mean age of participants was 36.6 years, 44.4% worked as cleaning personnel, 34.8% as cafeteria personnel and 20.8% in other hospital departments. While 58.0% of the personnel had sufficient HL scores, there was no significant difference in HL proficiency according to gender, marital status, number of household members, work unit or presence of chronic diseases. Among those with a secondary school education or lower, 71.6% had an insufficient level of social responsibility (SOY), while this figure was 33.3% for those with a university degree. There was a statistically significant difference between the two groups.

Conclusion: HL is essential for improving individual and community health and preventing chronic and infectious diseases. Regular assessment and training programmes to strengthen HL levels in hospital personnel can make a positive contribution to both individual and public health.

Keywords: hospital personnel; health literacy; inservice training; educational status

Özet

Giriş: Sağlık okuryazarlığı (SOY), bireylerin sağlık verilerini anlayıp yorumlayarak etkin kararlar almalarını sağlar. Hastane personelinde SOY, hasta iletişimi, hasta güvenliği ve tedaviye uyumu sağlayarak sağlık hizmetlerinin etkinliğini artırır. Bu çalışmanın amacı İzmir'deki bir eğitim araştırma hastanesinde görev yapan personelde SOY düzeyi ve ilişkili faktörlerin değerlendirilmesidir.

Yöntem: Bu çalışma Tepecik Eğitim ve Araştırma Hastanesinde görev yapan 207 hastane personeline yüz yüze anket yöntemiyle yapılmış kesitsel-tanımlayıcı bir çalışmadır. Verilerin toplanmasında araştırmacılar tarafından hazırlanmış sosyodemografik bilgiler, el hijyeni, maske kullanımı ve sağlıkla ilgili tutum ve davranışları sorgulayan bir veri formu ile Avrupa SOY Ölçeği Kısa Formu (HLS-EU-Q16) kullanılmıştır.

Bulgular: Katılımcıların yaş ortalaması 36,6 yıl olup %44,4'ü temizlik personeli, %34,8'i yemekhane personeli ve %20,8'i diğer bölümlerde çalışan personeldi. Personellerin %58,0'ının SOY Ölçeğinden aldığı puan yeterli iken, cinsiyet, medeni durum, evde yaşayan kişi sayısı, çalıştığı birim ve kronik hastalığı olup olmaması ve SOY yeterliliği arasında anlamlı fark bulunmadı. Eğitim durumu ortaokul ve altı olanların %71,6'sının SOY düzeyi yetersizken, üniversite mezunu olanların %33,3'ünün SOY düzeyi yetersizdi. İki grup arasında istatistiksel olarak anlamlı fark vardı.

Sonuç: SOY, bireylerin ve toplumun sağlığını iyileştirmek, kronik ve enfeksiyon hastalıklarını önlemek için kritik öneme sahiptir. Hastanelerde çalışan personelin SOY düzeyinin düzenli olarak değerlendirilmesi ve geliştirilmesine yönelik eğitimler hem personel hem de toplum sağlığına olumlu katkı sağlayacaktır.

Anahtar Sözcükler: hastane personeli; sağlık okuryazarlığı; hizmet içi eğitim; eğitim durumu

[1] *Uzm. Dr., Kuyucak İlçe Devlet Hastanesi, İzmir (Orcid no: 0000-0001-8874-1564)*
[2] *Uzm. Dr., Karabağlar 27 nolu Aile Sağlığı Merkezi, İzmir (Orcid no: 0000-0003-0693-8190)*
[3] *Prof. Dr., Sağlık Bilimleri Üniversitesi, İzmir Tıp Fakültesi, İzmir (Orcid no: 0000-0002-4921-6588)*
[4] *Prof. Dr., Sağlık Bilimleri Üniversitesi, İzmir Tıp Fakültesi, İzmir (Orcid no: 0000-0002-5048-204X)*

Introduction

Health literacy (HL) is defined as the ability to use general literacy skills (reading, writing, numeracy, listening and speaking) to obtain, understand, evaluate, synthesise, communicate and apply health-related information. These skills play an essential role in improving overall health and preventing disease by increasing the effectiveness of health-related decisions (1,2). The term HL, coined in the 1970s, is generally associated with the extent to which individuals can cope with the complex demands of promoting and maintaining health in modern society. Over the past two decades, the concept has received increasing attention because of its significant benefits for individual and community health and for the sustainability of health systems (3). Inadequate health literacy is associated with difficulties in understanding health information, limited knowledge about diseases and poor medication adherence, which contribute to poor health, increased risk of death, inadequate and ineffective use of health services, increased costs and health inequalities. Many countries, including the United States, Canada, Australia, the European Union and China, have included health literacy as a key priority in their policies and practices. WHO recommends health literacy as a tool for achieving several key goals listed in the Sustainable Development Goals (4,5).

Recent empirical research indicates that health literacy levels among healthcare workers vary widely, yet a significant proportion may still possess suboptimal skills that could affect their professional performance. A multicenter cross-sectional study in teaching hospitals in Italy assessed health literacy using a validated instrument and found that many healthcare workers demonstrated gaps in understanding essential health concepts, underscoring the ongoing need for targeted training even among clinical staff (6).

Studies in related domains, such as nutrition literacy among medical personnel in tertiary hospitals, reveal similar patterns: fewer than half of staff achieved high literacy levels, and factors such as gender, education level, and job role significantly influenced literacy scores (7). These findings suggest that health literacy is not uniformly high among hospital workers and that structural differences in professional training and background play a role.

Finally, broader competency frameworks further clarify what adequate health literacy entails for healthcare professionals. Together with evidence on hospital workers' literacy levels, these competency models reinforce that ongoing professional development —especially in communication, digital literacy, and patient education— is essential to improving both the quality of clinical care and patient outcomes in hospital settings (8).

This study aims to assess the knowledge and attitudes of personnel at a teaching and research hospital regarding health literacy. This research will examine employees' approach to health literacy, which is expected to be higher than that of the general population. The study will contribute to the development of health policies.

Materials and Methods

A cross-sectional, analytical study was conducted among hospital staff at a training and research hospital in Izmir. The hospital had 422 employees. The study sample was calculated using the known-population method with 95% confidence and a 5% margin of error; 207 hospital staff members were included in the study. The participation criteria were simple: being 18 years of age or older, not having a mental illness that would impede communication, being an active staff member, and agreeing to participate. Participants were selected using random sampling. The forms were administered face-to-face at the workplace. The questionnaire included questions about socio-demographic information, hand hygiene, mask use, health-related attitudes and behaviors, and the European Health Literacy Scale Short Form (HLS-EU-Q16), the Turkish validity and reliability of which was determined by Emiral, and et al (9). The European Health Literacy Scale Short Form (HLS-EU-Q16) is a 5-point Likert-type scale where each question is scored between "Don't know=0", "Very difficult=1", "Difficult=2", "Easy=3", "Very easy=4". A standardized index score was used to calculate the total score obtained from the scale (index=mean-1x(50/3)). The index score ranges from 0 to 50. Those scoring 33 and above have an adequate level of health literacy (HL). Those

scoring lower have an inadequate level of health literacy (HL) (9).

Permission for the study was obtained from the non-invasive research ethics committee of Izmir Tepecik Training and Research Hospital, Health Sciences University (decision number 2021/05-46). The data obtained in the study were analyzed using the SPSS 24 software package. Descriptive statistics are presented as mean, median, minimum, and maximum. In this cross-sectional study, the dependent variable was defined as the participants' health literacy (HL) level. HL level was divided into two groups, "adequate" and "inadequate" according to the HLS-EU-Q16 scale. Independent variables included participants' sociodemographic and occupational characteristics: gender, marital status, education level, number of household members, unit of employment, and presence of chronic disease. The Chi-square test was used to examine the relationship between the dependent variable (HL level) and each independent variable. $p<0.05$ was considered significant. The Kolmogorov-Smirnov test was performed to test normality, and it was found that the data did not conform to a normal distribution.

Results

The mean age of the 207 personnel participating in the study was 36.6±9.3 years. 60.4% were female, 68.6% were married, and 44.9% were high school graduates. The number of participants living in their households other than themselves was 3 or less, making up 49.3%. 44.4% of the participants were cleaning personnel, and 74.4% did not have a chronic disease (Table 1). Hospital personnel had previously received in-service training on infection prevention. 83.6% (173 people) of the participants in the study stated that they found this training useful, while 75.4% (156 people) wanted the training to continue. However, the rate of those who found the training useful but did not want it to continue was determined as 24.6% (36 people). When the participants were asked how they felt to assess their perception of health, 29.5% responded that it was good (Table 2).

Table 1. Characteristics of the participants

	n	%
Gender		
Female	125	60.4
Male	82	39.6
Marital status		
Married	142	68.6
Single	65	31.4
Education status		
Middle school and below	81	39.1
High school	93	44.9
University	33	16.0
Number of people living in the house		
3 and below	106	51.2
4 or 5 people	89	43.0
6 and above	12	5.8
Unit of employment		
Cleaning unit	79	38.2
Cafeteria	86	41.5
Other	42	20.3
Chronic disease status		
Yes	53	25.6
No	154	74.4

Table 2. Participants' perception of health		
	n	**%**
Bad	7	3.4
Not Bad	48	23.2
Good	61	29.5
Pretty Good	52	25.1
Excellent	39	18.8

Table 3. Employees' attitudes and behaviors regarding hand cleaning and mask use

	No		**Rarely**		**Often**		**Always**	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Do you wash your hands regularly?	1	0.5	2	1.0	64	30.9	140	67.6
Do you use hand sanitizers when you don't have a chance to wash your hands?	2	1.0	20	9.7	58	28.0	127	61.4
Do you wear a mask at work?	0	0.0	2	1.0	14	6.8	191	92.3

Table 4. Sufficiency statuses in the HLS-EU-Q16 scale according to the characteristics of the participants

HL Level	**n**	**Sufficient**		**Insufficient**		**Total**		**p****
		%	**n**	**%**	**n**	**%***		
Gender	Female	57	54.4	68	45.6	125	60.4	0.199
	Male	30	36.6	52	63.4	82	39.6	
Marital status	Married	65	45.8	77	54.2	142	68.6	0.107
	Single	22	33.8	43	66.2	65	31.4	
Number of people living in the household	3 and below	42	39.6	64	60.4	106	51.2	0.088
	4 or 5 people	43	48.3	46	51.7	89	43.0	
	6 and above	2	16.7	10	83.3	12	5.8	
Unit of employment	Cleaning unit	50	63.3	29	36.7	79	38.2	0.476
	Cafeteria	47	54.7	39	45.3	86	41.5	
	Other	23	54.8	19	45.2	42	20.3	
Chronic disease	Yes	32	60.4	21	39.6	53	25.6	0.681
	No	66	42.9	88	57.1	154	74.4	
Educational Status	Middle school and below	23	24.8	58	71.6	81	39.1	0.001
	High school	42	45.2	51	54.8	93	44.9	
	University	22	66.7	11	33.3	33	15.9	

HL: Health Literacy
(*column percentage used, **chi square test performed)

The participants' answers to questions about their cleaning habits are shown in Table 3. Those who always wash their hands regularly constituted 67.6% of all participants, and those who always use hand sanitizer when they do not have the chance to wash constituted 61.4%. In addition, 57.0% of the participants stated that they always wash their clothes after coming from outside, and 92.3% of the participants stated that they always use masks at work.

In the answers given by the participants to the questions aimed at measuring the difficulty level of their attitudes and behaviors related to health, "Understanding your doctor's/pharmacist's instructions on how to use a prescribed medicine" and "Understanding information provided in the media about being healthier" were the areas they were best at. "Finding information about treatments for diseases that concern you" and "Using the information provided by your doctor in making decisions about your disease" were the areas they had the most difficulty with. In general, more than half of the participants stated that they did not experience any difficulty in all areas.

According to the HLS-EU-Q16 scale, 58.0% of the participants had sufficient scores on the scale. No significant relationship was found between the HLS level and gender, marital status, number of people living in the household, unit of employment and chronic disease status. There was a significant difference between the HLS level and educational status. This difference was between those with secondary school or below and university graduates. While 71.6% of those with secondary school or below education had insufficient HL, 66.7% of university graduates had sufficient HL (Table 4).

Discussion

This cross-sectional study aimed to assess health literacy (HL) levels and associated factors among non-clinical personnel in a large teaching and research hospital in Turkey. The findings indicate that while a majority (58.0%) of the participants demonstrated sufficient HL, a substantial proportion (42.0%) displayed insufficient levels. This distribution underscores that even within a healthcare environment, a significant segment of the workforce may lack the skills needed to access, understand, and apply health-related information effectively. Given that hospital personnel —whether clinical or non-clinical— serve as role models and are integral to patient safety and hospital hygiene, these results call for targeted institutional strategies.

A central finding of this study is the influential association between educational attainment and HL. No significant relationships were observed between HL and gender, marital status, number of household members, work unit, or chronic disease status. However, educational level emerged as a critical differentiator. Among personnel with secondary school education or less, 71.6% had insufficient HL, compared to only 33.3% of university graduates. This strong gradient aligns with a well-established body of international evidence. Sørensen (3) and Bonaccorsi et al. (10) have consistently highlighted education as a fundamental social determinant of HL, as it cultivates the cognitive and functional skills required for processing health information. Similarly, Svendsen et al. (11) reported clear socioeconomic disparities in HL, with lower education correlating with lower HL. Our findings reinforce this pattern within the Turkish hospital context and suggest that educational background may be a stronger predictor of HL than occupational role among non-clinical staff.

Analysis of the specific items from the HLS-EU-Q16 scale provided further nuance. Participants reported the least difficulty with items related to understanding straightforward instructions from healthcare providers or general health information from the media. In contrast, items requiring proactive engagement — such as finding information on treatments or using a doctor's advice to make decisions — were perceived as more challenging. This pattern suggests that functional literacy (understanding information) may be more prevalent, whereas interactive and critical literacy skills (seeking, evaluating, and applying information) are less developed. This is consistent with competency frameworks for health professionals, which emphasize the need for advanced skills in information navigation and patient communication to improve care quality (8).

The study also examined self-reported infection prevention practices. High rates were reported

for mask use at work (92.3%) and regular handwashing (67.6%). The positive attitude toward in-service training—with 83.6% finding it useful—is encouraging and mirrors findings from the German PIKoG study, which demonstrated that training can enhance HL and improve patient-provider communication (12). However, the fact that nearly one-third of participants did not consistently practice hand hygiene suggests that knowledge does not always translate into behavior. This gap between knowledge and practice is a global challenge, as noted in studies from Nigeria and Pakistan, where compliance with hand hygiene guidelines among healthcare workers remained low despite awareness (13,14). The relatively high compliance in our setting may be attributable to recent pandemic-era training and institutional monitoring. Regular, reinforced training has been shown to significantly improve practices, as evidenced by a Turkish study where hand hygiene education led to a measurable reduction in microbial hand contamination (15).

The lack of a significant association between HL and variables such as gender contrasts with some European studies, including those by von Rueden et al. (16) and Erhart et al. (17), which reported gender differences in health-related competencies. This discrepancy may be attributed to the unique sample composition (predominantly non-clinical roles) and the study's specific sociocultural context. It highlights that the determinants of HL may vary across professional subgroups and national settings, underscoring the importance of localized assessments.

Strengths and Limitations

This study has several limitations. Its cross-sectional design does not allow for causal inference. The sample was drawn from a single hospital, which limits the generalizability of the findings to other institutions or regions. Self-report data on behaviors are susceptible to social desirability bias and may potentially overestimate adherence to hygiene practices. Furthermore, the study focused on non-clinical personnel; including clinical professionals would enable more informative comparisons. Despite these limitations, the research fills a significant gap by focusing on a workforce group essential to hospital operations but often overlooked in health literacy research. The use of a validated international instrument (HLS-EU-Q16) strengthens the reliability of the health literacy measurement.

Conclusion and Recommendations

In conclusion, this study reveals a significant prevalence of inadequate health literacy among non-clinical hospital personnel, which is strongly associated with low levels of education. The challenges identified in proactive health information management point to specific areas for skills development. Improving health literacy in this workforce is not merely an individual concern but an institutional imperative to enhance patient safety, infection control, and overall quality of healthcare.

We recommend that hospitals implement routine health literacy screenings for all staff groups to identify needs accurately. Specifically designed continuing education programs should be developed, with a focus on staff with lower levels of formal education. These programs should go beyond basic hygiene and include modules on accessing reliable health information, evaluating health content, and applying information in daily decision-making processes. Furthermore, fostering a hospital-wide health literacy culture where open communication and continuous learning are valued can enhance the impact of training. Future research should use longitudinal designs to assess the effectiveness of such interventions and to examine health literacy among mixed groups of clinical and non-clinical staff across diverse healthcare settings.

Contact: İsmail Çifçi
E-Mail: dr.ismailcifci@gmail.com

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