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# DETERMINAÇÃO DOS NÍVEIS DE CONHECIMENTO E EXPERIÊNCIA EM ALFABETIZAÇÃO EM SAÚDE ENTRE ESTUDANTES DA FACULDADE DE CIÊNCIAS

# DETERMINING THE HEALTH LITERACY KNOWLEDGE AND EXPERIENCE LEVELS OF FACULTY OF HEALTH SCIENCES STUDENTS

# DETERMINACIÓN DE LOS NIVELES DE CONOCIMIENTO Y EXPERIENCIA EN ALFABETIZACIÓN EN SALUD DE ESTUDIANTES DE LA FACULTAD DE CIENCIAS

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## RESUMO

**Introdução:** A literacia em saúde é um determinante fundamental da capacidade dos indivíduos de aceder, compreender e utilizar informações relacionadas à saúde de forma eficaz. Apesar de sua reconhecida importância, estudos que examinam o conhecimento e a experiência percebidos em literacia em saúde entre estudantes das ciências da saúde, futuros profissionais de saúde, ainda são limitados.
**Objetivo:** Examinar os níveis percebidos de conhecimento e experiência em literacia em saúde entre estudantes de graduação das ciências da saúde e sua associação com variáveis sociodemográficas selecionadas.
**Métodos:** Estudo descritivo transversal realizado com 302 estudantes de graduação. Os dados foram coletados por meio de um Questionário de Conhecimento e Experiência em Literacia em Saúde desenvolvido pelos pesquisadores e um formulário sociodemográfico. A validade de constructo foi avaliada por análise fatorial confirmatória e a confiabilidade pelo alfa de Cronbach. Os dados foram analisados por teste t para amostras independentes e análise de variância (ANOVA) com testes post hoc ($p<0,05$).
**Resultados:** Os escores percebidos de conhecimento e experiência em literacia em saúde diferiram significativamente segundo o ano acadêmico e o conhecimento prévio sobre literacia em saúde. Estudantes do quarto ano apresentaram escores médios mais elevados (3,49±0,34) em comparação aos do primeiro (3,32±0,42), segundo (3,19±0,44) e terceiro anos (3,40±0,40). Estudantes que relataram conhecimento prévio em literacia em saúde apresentaram escores superiores aos que relataram não possuir conhecimento. De modo geral, os estudantes demonstraram níveis moderados percebidos de conhecimento e experiência em literacia em saúde.
**Conclusão:** Os achados sugerem que as competências em literacia em saúde podem variar conforme a exposição educacional e o conhecimento prévio. A integração de conteúdos direcionados sobre literacia em saúde nos currículos de graduação pode favorecer o desenvolvimento de competências entre futuros profissionais de saúde.


**Palavras-chave**: saúde; literacia em saúde; educação; estudantes de graduação


## ABSTRACT

**Introduction:** Health literacy is a key determinant of individuals' ability to access, understand, and use health-related information effectively. Despite its recognized importance, limited research has examined perceived health literacy knowledge and experience among health sciences students, who represent future healthcare professionals.
**Objective:** This study aimed to examine perceived health literacy knowledge and experience levels among undergraduate health sciences students and their associations with selected sociodemographic variables.
**Methods:** This descriptive cross-sectional study was conducted with 302 undergraduate students. Data were collected using a researcher-developed Health Literacy Knowledge and Experience Questionnaire and a sociodemographic form. Construct validity was assessed using confirmatory factor analysis and reliability with Cronbach's alpha. Data were analyzed using independent samples t-test and one-way ANOVA with post hoc tests ($p<0.05$).
**Results:** Perceived health literacy knowledge and experience scores differed significantly by academic year and prior awareness of health literacy. Fourth-year students had higher mean scores (3.49±0.34) than first-year (3.32±0.42), second-year (3.19±0.44), and third-year students (3.40±0.40). Students reporting prior health literacy knowledge scored higher than those reporting none. Overall, students demonstrated moderate perceived levels of health literacy knowledge and experience.
**Conclusion:** Findings suggest that health literacy competencies may vary according to educational exposure and prior awareness. Integrating targeted health literacy content into undergraduate curricula may support competency development among future healthcare professionals.


**Keywords:** health; health literacy; education; undergraduate students


## RESUMEN

**Introducción:** La alfabetización en salud es un determinante clave de la capacidad de las personas para acceder, comprender y utilizar eficazmente la información relacionada con la salud. A pesar de su reconocida importancia, son limitados los estudios que han examinado el conocimiento y la experiencia percibidos sobre alfabetización en salud entre estudiantes de ciencias de la salud, futuros profesionales sanitarios.
**Objetivo:** Examinar los niveles percibidos de conocimiento y experiencia en alfabetización en salud entre estudiantes universitarios de ciencias de la salud y su asociación con variables sociodemográficas seleccionadas.
**Métodos:** Estudio descriptivo transversal realizado con 302 estudiantes universitarios. Los datos se recopilaron mediante un Cuestionario de Conocimiento y Experiencia en Alfabetización en Salud desarrollado por los investigadores y un formulario sociodemográfico. La validez de constructo se evaluó mediante análisis factorial confirmatorio y la confiabilidad mediante el alfa de Cronbach. Los datos se analizaron mediante prueba t para muestras independientes y análisis de varianza (ANOVA) con pruebas post hoc ($p<0.05$).
**Resultados:** Las puntuaciones percibidas de conocimiento y experiencia en alfabetización en salud difirieron significativamente según el año académico y el conocimiento previo sobre alfabetización en salud. Los estudiantes de cuarto año presentaron puntuaciones medias más altas (3.49±0.34) que los de primer año (3.32±0.42), segundo año (3.19±0.44) y tercer año (3.40±0.40). Los estudiantes que reportaron conocimiento previo sobre alfabetización en salud obtuvieron puntuaciones más altas que aquellos que no lo reportaron. En general, los estudiantes mostraron niveles moderados percibidos de conocimiento y experiencia en alfabetización en salud.
**Conclusión:** Los hallazgos sugieren que las competencias en alfabetización en salud pueden variar según la exposición educativa y el conocimiento previo. La integración de contenidos específicos sobre alfabetización en salud en los planes de estudio de pregrado puede favorecer el desarrollo de competencias entre futuros profesionales sanitarios.


**Palabras clave:** salud; alfabetización en salud; educación; estudiantes de pregrado

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## INTRODUCTION

Individuals must be able to access appropriate health information, comprehend it, and act accordingly when they fall ill in order to maintain a healthy life. This necessity has led to the emergence of the concept of health literacy, which encompasses activities aimed at enhancing individuals' ability to access, understand, interpret, and apply health information throughout their lives, thereby improving their living standards, preventing diseases, and making informed health decisions. Health literacy is defined as the capacity to access, process, and comprehend fundamental health information and services essential for making informed individual health decisions, and it is widely acknowledged as a critical determinant of health behaviors and outcomes (Bernstein et al., 2020).

Health literacy is not limited solely to the management of diseases; it also plays a critical role in individuals'adoption of health-protective and health-promoting behaviors. Individuals' ability to make healthy lifestyle choices, to recognize risk factors at an early stage, and to effectively utilize preventive health services is closely associated with adequate levels of health literacy." (WHO, 2022; Campos et al., 2022; Nutbeam & Lloyd, 2021; Paakkari & Okan, 2020). In this context, health literacy is considered a multidimensional determinant in both disease prevention and the maintenance and promotion of health (WHO, 2022).

It is reported that individuals with inadequate health literacy use preventive health services less frequently, show lower adherence to treatment processes, make errors in medication use, and have higher risks of morbidity and mortality (Lee et al., 2022). This indicates that health literacy is a factor that enhances individuals' ability to effectively interpret and use health-related information and also has significant implications for health systems (Mikkelsen et al., 2022).

One of the key factors in achieving success in the delivery of healthcare services is the strength of two- way communication between patients and healthcare professionals, as well as the adoption of a patient- centered approach. However, the complexity of medical conditions and the information asymmetry between healthcare providers and service users can make effective communication between patients and healthcare professionals more challenging. At this point, health literacy contributes to enabling individuals to communicate effectively with healthcare professionals and to benefit optimally from healthcare services (Soykan & Şengül, 2021).

Health literacy is conceptualized at three main levels: functional (basic), interactive (communicative), and critical. Functional health literacy encompasses individuals' abilities to understand written and spoken health-related information, to read and interpret basic health information, and to utilize healthcare services. Interactive health literacy refers to individuals' active participation in health-related processes, their ability to communicate effectively with healthcare professionals, and their capacity to apply acquired information to different health contexts. Critical health literacy involves individuals' ability to analyze and evaluate health information and to interpret social, economic, and political determinants of health, thereby requiring higher-level cognitive and social skills (Lorcu & Bayer, 2024).

In this study, health literacy is considered not only as a cognitive construct but also as a multidimensional concept shaped by individuals' interactions with the healthcare system and their practical engagement processes. In this context, two main components are defined within the scope of the research: "knowledge" and "experience."

"Knowledge" is defined as individuals' level of cognitive awareness and understanding regarding health-related concepts, services, and practices. This approach relates individuals' awareness of health risks, understanding of treatment processes, and knowledge of how to access healthcare services to the functional dimension of health literacy (Nutbeam & Lloyd, 2021; Sørensen et al., 2012).

"Experience," on the other hand, refers to the practice-based learning individuals gain through their interactions with healthcare services and their experiential processes within the healthcare system. In this study, experience is conceptualized as a reflection of individuals' active participation in healthcare services, their interactions with healthcare professionals, and their ability to adapt health information to different situations. In this respect, experience is associated with the interactive and critical dimensions of health literacy (Nutbeam, 2008). When these two dimensions are considered together, health literacy emerges not merely as a cognitive process but as a dynamic and experiential structure that develops through individuals' interactions with the healthcare system. The literature also emphasizes that health literacy is shaped through the integration of individual cognitive skills and interactions within the healthcare system (Nutbeam, 2008; Sørensen et al., 2012; Van den Broucke, 2020). In this context, knowledge and experience are considered in this study as two complementary components of health literacy.

In the field of health sciences, equipping students who will become future healthcare professionals with health literacy skills and determining their levels of health literacy knowledge and experience is of great importance. A review of the literature shows that there are numerous studies evaluating individuals' health literacy levels (Değirmenci & Atan, 2025; Okan et al., 2023; Şahinöz et al., 2018). However, studies directly addressing the knowledge and experience levels of health sciences faculty students regarding health literacy are relatively limited.

In Türkiye, the "Adult Health Literacy Scale" developed by Sezer and Kadıoğlu (2014) stands out as one of the prominent tools for assessing health literacy (Sezer & Kadıoğlu, 2014). However, existing measurement instruments are considered limited, particularly in simultaneously evaluating the knowledge and experience dimensions of health literacy among health sciences students. Accordingly, in order to achieve the aims of this study, the "Health Literacy Knowledge and Experience Questionnaire,"

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developed by the researchers based on the relevant literature, was used to assess students' current levels of knowledge, experience, and awareness of health literacy. The questionnaire was not adapted from any existing scale or translated from another language; instead, its items and sub-dimensions were originally developed by the researchers in line with the literature. The construct validity and reliability of the instrument were tested through statistical analyses, and it was determined that the measurement tool demonstrated acceptable psychometric properties.

The aim of this study is to determine the health literacy knowledge and experience levels of undergraduate students enrolled in faculties of health sciences and to examine the relationship between the scores obtained from the questionnaire and sociodemographic variables such as gender, department, and year of study.

**Research Hypotheses**

H1: Perceptions of health literacy knowledge and experience differ by gender.
H2: Perceptions of health literacy knowledge and experience differ based on smoking status.
H3: Perceptions of health literacy knowledge and experience differ according to whether students have taken a health literacy course.
H4: Perceptions of health literacy knowledge and experience differ by academic department.
H5: Perceptions of health literacy knowledge and experience differ by year of study.
H6: Perceptions of health literacy knowledge and experience differ according to self-reported general health status.
H7: Perceptions of health literacy knowledge and experience differ based on adequate and balanced dietary habits.
H8: Perceptions of health literacy knowledge and experience differ according to health literacy awareness.

## 2. METHODS

This study employed a descriptive cross-sectional design with an analytical comparative approach and was conducted within a quantitative research framework. The study population consisted of 947 undergraduate students enrolled in the Faculty of Health Sciences at Bahçeşehir University in Istanbul (Departments of Nursing, Physiotherapy and Rehabilitation, Nutrition and Dietetics, and Speech and Language Therapy) between 1 December 2022 and 1 February 2023.

The inclusion criteria for the study were being an undergraduate student enrolled in the Faculty of Health Sciences during the data collection period and agreeing to participate voluntarily in the study. Individuals who did not meet these criteria were excluded from the study.

Prior to data collection, ethical approval was obtained from the Social and Human Sciences Research Ethics Committee of Ordu University (Date: [A], Decision No: [A]). In addition, written institutional permission was obtained from the university where the study was conducted. Written informed consent was obtained from all participants, and they were provided with detailed information regarding the purpose and procedures of the study.

The data collection process was conducted between December 2022 and February 2023. The questionnaire was administered both online via WhatsApp and through face-to-face interviews.

### 2.1 Sample

The study aimed to reach the entire population without selecting a specific sample. A total of 302 students who voluntarily agreed to participate constituted the study sample.

### 2.2 Data collection instruments

Data were collected using two instruments developed by the researcher based on the existing literature: the Sociodemographic Questionnaire and the Health Literacy Knowledge and Experience Survey.

**Sociodemographic Questionnaire:** This form consisted of 9 items assessing participants' gender, department, year of study, smoking status, general health status, perceived adequacy and healthiness of nutrition, awareness of the concept of health literacy, and whether they had received any training or seminars on health literacy.

**Development of the Measurment Tool**

The Health Literacy Knowledge and Experience Questionnaire used in this study was developed by the researchers based on a comprehensive review of the literature. The instrument is not an adaptation of an existing scale but an original measurement tool developed within the theoretical framework of health literacy. During the development process, national and international literature on health literacy was systematically reviewed, and an item pool was created. The items were structured to cover the

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knowledge and experience dimensions of health literacy and were organized under four sub-dimensions in accordance with the theoretical framework. Content validity was evaluated, and the final version of the instrument was developed after necessary revisions. Construct validity was assessed using Confirmatory Factor Analysis (CFA), and the model fit indices were found to be within acceptable limits, confirming the four- factor structure of the scale.

**Health Literacy Knowledge and Experience Survey:** The questionnaire was developed to assess university students' levels of health literacy knowledge and experience and consists of 38 items under four sub-dimensions: (i) knowledge related to self-care/treatment, (ii) communication and empathy skills with patients, (iii) health literacy awareness, and (iv) knowledge of access to professional support related to health literacy. Items were rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Factor loadings of all items were above 0.60, indicating a strong and consistent factor structure. Construct validity was tested using CFA. The fit indices indicated an acceptable model fit ($\chi^2$/df = 3.353, RMSEA = 0.082, RMR = 0.037, CFI = 0.911, NFI = 0.903, GFI = 0.89, AGFI = 0.85), confirming the four-factor structure of the scale. Reliability analysis was conducted using Cronbach's alpha coefficient. The overall reliability of the questionnaire was 0.832. The Cronbach's alpha values for the sub-dimensions were 0.825 for knowledge related to self-care/treatment, 0.772 for communication and empathy skills with patients, 0.713 for health literacy knowledge, and 0.800 for knowledge of access to professional support related to health literacy. These results indicate that the instrument has acceptable to good internal consistency.

All participants confirmed their voluntary participation by signing an informed consent form prior to completing the questionnaire. The data collection process was conducted between December 2022 and February 2023.

### 2.3 Statistical analysis

The data obtained from the study were analyzed using SPSS version 27 for Windows. Descriptive statistics for numerical variables were presented as frequency (n), percentage (%), minimum and maximum values, and mean (± standard deviation). The normality of the data was assessed by examining skewness and kurtosis values. The data were found to be normally distributed. According to George and Mallery, skewness and kurtosis values within the range of ±2 are considered acceptable (*IBM SPSS Statistics 29 Step by Step*, t.y.). Since the data followed a normal distribution, independent samples t-test and one-way ANOVA were used for group comparisons. For variables with two groups, t-test was applied, while for variables with three or more groups, one-way ANOVA was used together with post hoc Tukey and Games-Howell tests. The level of statistical significance was set at $p < 0.05$.

Although this study employed a cross-sectional descriptive design, inferential statistical analyses were performed to examine relationships between variables in line with hypotheses developed based on the literature.

## 3. RESULTS

The sociodemographic characteristics of the 302 students included in the study are presented in Table 1. Of the participants, 224 were female and 78 were male. It was found that 44% of the students were enrolled in the Department of Physiotherapy and Rehabilitation, and 26.8% were second-year students. Additionally, 69.5% of the participants reported that they did not smoke, and 59.3% rated their general health status as "good."

Regarding nutritional status, 57% of the students stated that their nutrition was partially adequate and healthy. Furthermore, 72.2% reported having partial or full knowledge about the concept of health literacy. However, 83.8% indicated that they had not taken any course on health literacy, and 94.4% reported that they had not attended any seminar or workshop on the subject (Table 1).

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**Table 1 -** Participant Characteristics

| Variables | *N* | *%* |
|---|---|---|
| **Gender** | | |
| Female | *224* | *74.2* |
| Male | *78* | *25.8* |
| **Department** | | |
| Nursing | *72* | *23.8* |
| Physiotherapy and Rehabilitation | *133* | *44.0* |
| Nutrition and Dietetics | *77* | *25.5* |
| Speech and Language Therapy | *20* | *6.6* |
| **Grade Level** | | |
| 1st grade | *73* | *24.2* |
| 2nd grade | *81* | *26.8* |
| 3rd grade | *72* | *23.8* |
| 4th grade | *76* | *25.2* |
| **Smoking Status** | | |
| Yes | *92* | *30.5* |
| No | *210* | *69.5* |
| **General Health Status** | | |
| Very good | *56* | *18.5* |
| Good | *179* | *59.3* |
| Neither good nor poor | *63* | *20.9* |
| Poor | *4* | *1.3* |
| **Adequate and Healthy Nutrition Status** | | |
| Yes | *92* | *30.5* |
| Partially | *172* | *57.0* |
| No | *38* | *12.6* |
| **Knowledge of Health Literacy** | | |
| Yes | *118* | *39.1* |
| Partially | *100* | *33.1* |
| No | *84* | *27.8* |
| **Enrollment in Health Literacy Courses** | | |
| Yes | *49* | *16.2* |
| No | *253* | *83.8* |
| **Participation in Health Literacy Workshops** | | |
| Yes | *17* | *5.6* |
| No | *285* | *94.4* |
| Total | *302* | *100.0* |

Note: M = average; T = total.

## 2.1 Validity and Reliability Analysis

The validity and reliability properties of the Health Literacy Knowledge and Experience Questionnaire were evaluated. Construct validity was examined using Confirmatory Factor Analysis (CFA), and the results demonstrated acceptable model fit indices. All item factor loadings across the four sub-dimensions were above 0.60, indicating that the instrument has a strong and consistent structure.

**Table 2 -** Fit Index Results for the Questionnaire

| Fit Criteria | Excellent Fit | Acceptable Fit | Total HLKE |
|---|---|---|---|
| χ2 /sd | ≤ 3 | ≤ 5 | 3.353 |
| RMSEA | 0 <RMSEA <0.05 | 0.05≤ RMSEA ≤0.10 | .082 |
| RMR | 0 ≤ RMR <0.05 | 0.05 ≤ RMR ≤ 0.10 | .037 |
| NFI | 0.95≤ NFI ≤1 | 0.90 ≤NFI ≤0.95 | .903 |
| CFI | 0.95≤ CFI ≤1 | 0.90≤ CFI ≤0.95 | .911 |
| GFI | 0.95≤ GFI ≤1 | 0.90≤ GFI ≤0.95 | .89 |
| AGFI | 0.90≤ AGFI ≤ 1 | 0.85≤ AGFI ≤0.90 | .85 |

HLKE: Health Literacy Knowledge and Experience

The fact that these values are above the recommended threshold of 0.70 in the literature (Diamantopoulos et al., 2012) indicates that the questionnaire demonstrates adequate and high level reliability (Diamantopoulos et al., 2012). The findings also suggest

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that the measurement instrument is structurally valid and reliable, and that each sub-dimension measures the intended construct in a valid and consistent manner.

**Table 3:** Skewness, Kurtosis, and Reliability Coefficients for the Total Scale and Subscales

| Variables | Skewnes | Kurtosis | Cronbach Alpha |
|---|---|---|---|
| Total Health Literacy Knowledge and Experience | -,410 | ,545 | ,832 |
| Knowledge About Self-Help/Treatment Interventions | -,520 | ,079 | ,825 |
| Ability to Communicate with Patients and Establish Empathy | -,579 | ,416 | ,772 |
| Knowledge About Health Literacy | -,018 | ,976 | ,713 |
| Knowledge Regarding Accessing Professional Help for Health Literacy | ,194 | -,199 | ,800 |

As part of the reliability analysis, the overall Cronbach's alpha coefficient of the questionnaire was calculated as 0.832. The Cronbach's alpha coefficients for the sub-dimensions were found to be 0.825 for knowledge related to self-care/treatment, 0.772 for communication and empathy skills with patients, 0.713 for health literacy knowledge, and 0.800 for knowledge of access to professional support related to health literacy.

**Table 4 -** Gender-Based Comparison of Health Literacy Knowledge and Experience Questionnaire Scores

| | Gender | N | Mean | SD | t | p |
|---|---|---|---|---|---|---|
| Total Health Literacy Knowledge and Experience | Female | 224 | 3.37 | .38 | **10.548** | **.001** |
| | Male | 78 | 3.28 | .50 | | |
| Knowledge About Self-Help/Treatment Interventions | Female | 224 | 3.38 | .58 | 1.409 | .236 |
| | Male | 78 | 3.26 | .64 | | |
| Ability to Communicate with Patients and Establish Empathy | Female | 224 | 3.87 | .62 | **5.311** | **.022** |
| | Male | 78 | 3.66 | .75 | | |
| Knowledge About Health Literacy | Female | 224 | 3.36 | .41 | **6.448** | **.012** |
| | Male | 78 | 3.28 | .53 | | |
| Knowledge Regarding Accessing Professional Help for Health Literacy | Female | 224 | 2.53 | .85 | 2.442 | .119 |
| | Male | 78 | 2.70 | .76 | | |

Statistically significant differences were found between genders in the total score of the Health Literacy Knowledge and Experience (HLKE) questionnaire and in some of its sub-dimensions ($p < .05$), supporting hypothesis H1. Regarding the total score, female students ($M = 3.37$, $SD = 0.38$) had higher scores than male students ($M = 3.28$, $SD = 0.50$) ($t = 10.548$, $p = .001$). However, the effect size was small (Cohen's $d \approx 0.22$). When the sub-dimensions were examined, statistically significant differences in favor of female students were found in the communication and empathy with patients dimension ($t = 5.311$, $p = .022$, $d = 0.32$) and in the knowledge of health literacy dimension ($t = 6.448$, $p = .012$, $d = 0.18$). These differences also indicated small effect sizes. In contrast, no statistically significant differences were found in the self- care/treatment knowledge ($p = .236$, $d = 0.20$) and access to professional support ($p = .119$, $d = -0.21$) sub-dimensions (Table 4).

**Table 5 -** Comparison of Health Literacy Knowledge and Experience Questionnaire Scores by Academic Year

| | Class | N | Mean | SD | f | p | Significant difference |
|---|---|---|---|---|---|---|---|
| Total Health Literacy Knowledge and Experience | 1st grade[1] | 73 | 3.32 | 0.42 | **7.522** | **.000** | **4-2 p=0.001*** **3-2 p=0.017*** |
| | 2nd grade[2] | 81 | 3.19 | 0.44 | | | |
| | 3rd grade[3] | 72 | 3.40 | 0.40 | | | |
| | 4th grade[4] | 76 | 3.49 | 0.34 | | | |
| Knowledge About Self-Help/Treatment Interventions | 1st grade[1] | 73 | 3.40 | 0.64 | 2.370 | .071 | |
| | 2nd grade[2] | 81 | 3.21 | 0.55 | | | |
| | 3rd grade[3] | 72 | 3.35 | 0.66 | | | |
| | 4th grade[4] | 76 | 3.45 | 0.52 | | | |
| Ability to Communicate with Patients and Establish Empathy | 1st grade[1] | 73 | 3.85 | 0.64 | **5.796** | **.001** | **4-2 p=0.008*** **3-2 p=0.007*** **1-2 p=0.041*** |
| | 2nd grade[2] | 81 | 3.59 | 0.73 | | | |
| | 3rd grade[3] | 72 | 3.83 | 0.67 | | | |
| | 4th grade[4] | 76 | 4.01 | 0.52 | | | |
| Knowledge About Health Literacy | 1st grade[1] | 73 | 3.31 | 0.50 | **4.875** | **.003** | **4-2 p=0.001*** **3-2 p=0.033*** |
| | 2nd grade[2] | 81 | 3.20 | 0.46 | | | |
| | 3rd grade[3] | 72 | 3.42 | 0.39 | | | |
| | 4th grade[4] | 76 | 3.44 | 0.40 | | | |
| Knowledge Regarding Accessing Professional Help for Health Literacy | 1st grade[1] | 73 | 2.22 | 0.75 | **8.647** | **.000** | **3-1 p=0.000*** **3-2 p=0.021*** **4-1 p=0.042*** |
| | 2nd grade[2] | 81 | 2.49 | 0.88 | | | |
| | 3rd grade[3] | 72 | 2.81 | 0.83 | | | |
| | 4th grade[4] | 76 | 2.78 | 0.72 | | | |

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A statistically significant difference was found in the total scores of the Health Literacy Knowledge and Experience (HLKE) questionnaire according to year of study ($p < .05$), supporting hypothesis H5 ($F(3, 298) = 7.522$, $p < .001$, $\eta^2 = 0.07$). The effect size indicated that this difference was close to a moderate level.

Based on mean scores, fourth-year students had the highest score ($M = 3.49$, $SD = 0.34$). Post-hoc analyses showed that the difference was particularly evident between second-year students and some upper-year groups. At the sub-dimension level, statistically significant differences were found in communication and empathy with patients ($F(3, 298) = 5.796$, $p = .001$, $\eta^2 = 0.06$), knowledge of health literacy ($F(3, 298) = 4.875$, $p = .003$, $\eta^2 = 0.05$), and access to professional support ($F(3, 298) = 8.647$, $p < .001$, $\eta^2 = 0.08$). No statistically significant difference was observed in the self-care/treatment knowledge sub-dimension ($p = .071$) (Table 5).

**Table 6 -** Comparison of Health Literacy Knowledge and Experience Questionnaire Scores Based on Students' Awareness of Health Literacy

| | Awareness status | N | Mean | SD | f | p | Significant difference |
|---|---|---|---|---|---|---|---|
| Total Health Literacy Knowledge and Experience | Yes[1] | 118 | 3.48 | 0.40 | **12.191** | **.000** | **1-3 p=0.000*** **2-3 p=0.023*** |
| | Partially[2] | 100 | 3.32 | 0.39 | | | |
| | No[3] | 84 | 3.20 | 0.41 | | | |
| Knowledge About Self-Help/Treatment Interventions | Yes[1] | 118 | 3.44 | 0.63 | 2.576 | .078 | |
| | Partially[2] | 100 | 3.33 | 0.61 | | | |
| | No[3] | 84 | 3.25 | 0.52 | | | |
| Ability to Communicate with Patients and Establish Empathy | Yes[1] | 118 | 3.90 | 0.65 | 1.758 | .174 | |
| | Partially[2] | 100 | 3.81 | 0.63 | | | |
| | No[3] | 84 | 3.72 | 0.69 | | | |
| Knowledge About Health Literacy | Yes[1] | 118 | 3.49 | 0.46 | **15.008** | **.000** | **1-3 p=0.002*** **1-2 p=0.006*** **2-3 p=0.044*** |
| | Partially[2] | 100 | 3.32 | 0.42 | | | |
| | No[3] | 84 | 3.15 | 0.37 | | | |
| Knowledge Regarding Accessing Professional Help for Health Literacy | Yes[1] | 118 | 2.89 | 0.79 | **17.234** | **.000** | **1-3 p=0.000*** **1-2 p=0.002*** |
| | Partially[2] | 100 | 2.49 | 0.77 | | | |
| | No[3] | 84 | 2.24 | 0.82 | | | |

A statistically significant difference was found in the total scores of the Health Literacy Knowledge and Experience (HLKE) questionnaire according to students' awareness of health literacy ($p < .05$), supporting hypothesis H8 ($F(2, 299) = 12.191$, $p < .001$, $\eta^2 = 0.08$). Post-hoc analyses indicated that students who reported having knowledge about health literacy had higher scores compared to those who reported partial knowledge or no knowledge. At the sub-dimension level, statistically significant differences were observed in the knowledge of health literacy dimension ($F(2, 299) = 15.008$, $p < .001$, $\eta^2 = 0.09$) and the access to professional support dimension ($F(2, 299) = 17.234$, $p < .001$, $\eta^2 = 0.10$). In contrast, no statistically significant differences were found in the self-care/treatment interventions ($p = .078$) and communication and empathy with patients ($p = .174$) sub-dimensions (Table 6).

Overall, effect sizes ranged from small to moderate, indicating that awareness level has a meaningful but limited effect on health literacy outcomes.

All hypotheses (H1–H8) were tested; only statistically significant findings are reported in detail in the Results section.

## 4. DISCUSSION

In this study, statistically significant differences were found between students' perceptions of health literacy knowledge and experience and variables such as gender, department, year of study, nutritional status, and awareness of health literacy ($p < .05$). These findings are consistent with previous studies indicating that sociodemographic and educational factors may influence health literacy levels (Aysun, 2021; Tuğut et al., 2021). Similarly, Kühn et al. (2022) reported strong associations between health literacy levels and age, gender, year of study, curriculum, parental education, and socioeconomic status (Kühn et al., 2021).

Regarding gender, a statistically significant difference was found in health literacy knowledge and experience perceptions; female students had higher mean total scores ($3.37 \pm 0.38$) compared to male students ($3.28 \pm 0.50$) ($p < .05$). Consistent with this finding, previous studies conducted with health sciences students have also reported higher health literacy levels among female students (Buran & Kaçan, 2023; Emre eet al., 2024). This finding may reflect differences reported in prior literature regarding engagement with health-related information and communication behaviors among students.

In the analysis conducted according to department, statistically significant differences were also identified ($p < .05$). The mean total score of Nursing students ($3.42 \pm 0.42$) was higher compared to Physiotherapy and Rehabilitation ($3.30 \pm 0.40$), Nutrition and Dietetics ($3.40 \pm 0.45$), and Speech and Language Therapy ($3.24 \pm 0.32$) students. Similarly, a study conducted among university students reported that, in general, students had adequate health literacy levels, with nursing students demonstrating higher levels

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compared to other disciplines (Juvinyà-Canal et al., 2020). However, some studies have reported varying results across different health-related disciplines (Güllü, 2023). These inconsistencies may be associated with differences in curriculum content, availability of clinical practice opportunities, and levels of professional awareness. In addition, the unequal distribution of participants across departments should be considered when interpreting these findings. Although the study was conducted within the same faculty to ensure a relatively homogeneous sample, differences in group sizes may have affected the statistical power of the comparisons. Therefore, future studies are recommended to ensure more balanced sample distributions.

In the analysis conducted according to year of study, statistically significant differences were also observed ($p < .05$). Fourth-year students had higher mean scores ($3.49 \pm 0.34$) compared to students in other academic years. This finding is consistent with previous studies in the literature (Emre et al., 2024; Kaçkin et al., 2023; TEKBAŞ et al., 2023). This may be explained by the gradual increase in knowledge and awareness gained throughout the educational process. The cumulative effect of education contributes to the development of both cognitive knowledge and practice-based experience.

A statistically significant difference was also found according to students' awareness of health literacy ($p < .05$). Students who responded "yes" or "partially" had higher scores compared to those who responded "no." This suggests that students demonstrated moderate perceived levels of health literacy knowledge and experience. In the literature, there are studies supporting these findings, as well as studies reporting lower or higher levels of health literacy (Akgül et al., 2023; Ates et al., 2024; Kühn at al., 2021; Turhan & Bozkul, 2024). These results point to an important area for improvement in the development of health literacy. In this regard, the inclusion of elective courses in the curriculum and the organization of various educational activities are recommended. This finding indicates that awareness may play an important precursor role in the process of knowledge acquisition and skill development. However, this relationship may also be bidirectional; that is, higher levels of health literacy may also increase individuals' awareness of the concept.

One of the notable findings of this study is that although the majority of students (83.8%) had not received formal education on health literacy, a considerable proportion reported having prior knowledge of the topic, and these students achieved higher scores. Although this may initially appear contradictory, it can be explained by the increasing diversity of access to information in the contemporary context. Students may acquire informal learning experiences related to health through social media, online resources, digital platforms, peer interactions, and health-related content encountered during their educational processes. Therefore, the development of health literacy is not limited to formal education alone but is also influenced by environmental exposure and experiential learning processes. This finding suggests that knowledge acquired informally should be supported and reinforced through structured educational programs.

No statistically significant relationship was found between smoking status and general health status and health literacy ($p > .05$). This finding is consistent with some studies in the literature (Yakut & Özel, 2023), while other studies have reported smoking behavior as a significant factor influencing health literacy (Rababah et al., 2019; YAKUT & ÖZEL, 2023).

These differences may be attributed to variations in sample characteristics, measurement instruments used, and cultural factors. Therefore, further comprehensive studies employing different methodologies are recommended in future research.

## CONCLUSION

This study provides important findings regarding health sciences students' perceptions of health literacy knowledge and experience. Statistically significant differences were found according to gender, department, year of study, and awareness of health literacy. The results indicated that students demonstrated moderate perceived levels of health literacy knowledge and experience, highlighting the need for targeted educational interventions.

Considering the critical role of health literacy in both individual and public health, the findings support consideration of curriculum-based initiatives and educational programs aimed at strengthening health literacy competencies. Although no significant associations were found between smoking status, general health status, and health literacy, these relationships should be further investigated in more comprehensive studies.

Overall, this study contributes to a better understanding of factors influencing health literacy and provides valuable implications for educational improvements in this field.

### Strengths

First, the study provides a more comprehensive assessment by addressing health literacy not only from a cognitive (knowledge) perspective but also in terms of experience. In this respect, the study offers a broader perspective compared to previous research that has focused solely on knowledge levels. Second, the inclusion of students from different departments within the Faculty of Health Sciences enabled interdisciplinary comparisons and allowed the identification of differences across academic fields and year levels. Third, the use of a researcher-developed measurement tool with established validity and reliability enhances the

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methodological strength of the study. The instrument provides an offers a potentially useful contribution to the literature by assessing both knowledge and experience dimensions of health literacy. In addition, the inclusion of various sociodemographic and educational variables, such as gender, year of study, and awareness, allowed for a multidimensional evaluation of factors influencing health literacy. This comprehensive approach enhances the explanatory power of the findings and provides important implications for curriculum development processes in health sciences education.

## LIMITATIONS

First, the fact that this study was conducted in the Faculty of Health Sciences of a single university limits the generalizability of the findings. In addition, the unequal distribution of participants across departments represents an important limitation. Although the study was conducted within the same faculty to obtain a relatively homogeneous sample, differences in group sizes (e.g., between Physiotherapy and Rehabilitation and Speech and Language Therapy departments) may have affected statistical comparisons and reduced the power of the analyses. Therefore, future studies are recommended to be conducted with more balanced sample distributions. In addition, data were collected through self-report questionnaires, which may introduce response bias. Participants' self-assessments may not fully reflect their actual knowledge and skill levels. Furthermore, the cross-sectional design of the study does not allow for causal inferences. For this reason, longitudinal studies are recommended to examine the development of health literacy over time.

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## AUTHORS' CONTRIBUTION

Conceptualization, E.G.O. and T.S.; data curation, E.G.O.; formal analysis, E.G.O. and T.S.; investigation, E.G.O.; methodology, E.G.O. and T.S.; project administration, E.G.O.; resources, E.G.O.; software, E.G.O. and T.S.; supervision, T.S.; validation, E.G.O. and T.S.; visualization, E.G.O. and T.S.; writing – original draft, E.G.O. and T.S.; writing – review & editing, T.S.

## CONFLICT OF INTERESTS

The authors declare no conflict of interest.

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