



Determining the Health Literacy Levels of Prospective Primary School Teacher *

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(Research Article)

Abstract

The purpose of this study is to determine the health literacy levels of prospective primary school teachers. In the study, the survey design was used as a quantitative research method. The study group included a total of 141 prospective primary school teachers enrolled in the 1st, 2nd, 3rd, and 4th grades of the primary education undergraduate program at Bayburt University's Faculty of Education. The TSOY-32 Health Literacy Scale was used as the data collection tool in the study. SPSS 27.0 software was used for data analysis. Descriptive statistics (frequency, percentage, arithmetic mean, standard deviation) were used to evaluate the research data, and one-way analysis of variance (ANOVA) was applied. The research results indicate that prospective primary school teachers generally fall into the "insufficient health literacy" category. Additionally, within the scope of the study, it was investigated whether there was a significant difference in the health literacy levels of prospective classroom teachers according to grade level, and no difference was found between groups according to grade level. In conclusion, it can be said that prospective primary school teachers need more qualified and systematic training in health literacy so that they can both manage their own health and provide their future students with accurate health information.

Keywords: Health literacy, Prospective primary school teachers.

INTRODUCTION

The concept of literacy, defined as the ability to read, write, speak, and process information sufficiently to enable an individual to achieve their goals, develop their potential, experience, and knowledge, solve problems encountered in daily life, and fulfill their responsibilities in both their professional and social lives (Türkoğlu & Kılıç, 2021), is a concept that is frequently discussed today. Literacy holds a very important place in professional development, self-actualization, schooling, national development, and personal branding. Furthermore, literacy is considered one of the most fundamental competencies individuals must possess for active participation in political and social life and for lifelong learning (Rintaningrum, 2019; Shara,

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Andriani, Ningsih & Kisno, 2020). Through literacy, an individual's ability to use information effectively and understand their culture, circumstances, and language is enhanced (Türkoğlu & Kılıç, 2021).

Considering the scope of literacy, it is noteworthy that the concept is applied across many fields today. For instance, it appears in various domains such as science literacy, scientific literacy, digital literacy, information and communication technology (ICT) literacy, and environmental literacy. One of these fields is health, where the concept manifests as "Health Literacy." Health literacy was first mentioned in 1974 at a congress on health education as a social issue impacting the healthcare system, education system, and mass communications (Türkoğlu & Kılıç, 2021). During that period, health literacy was defined merely as an individual's ability to read and understand health information and follow medical instructions.

Later, in the 1990s, more comprehensive definitions of health literacy were developed (Nielsen-Bohlman, Panzer & Kindig, 2004). According to the definition in the Ministry of Health's Dictionary of Health Promotion and Development, health literacy is the level of knowledge, skill, and self-confidence required for individuals to change their lifestyles and conditions to improve both personal and public health (Zaralı & Dede, 2011). According to the Institute of Medicine (2004), health literacy is the capacity of individuals to access, understand, and correctly apply health information to stay informed about their own health status. On the other hand, health literacy is also expressed as an individual's ability to read, comprehend, and utilize necessary health information to make appropriate and effective health-related decisions (Güneş, Çolaklar, Biçen Aras & Turan, 2013).

An examination of the definitions and related literature reveals an increasing emphasis on the importance of health literacy and the necessity of developing minimum standards within health education and the school environment. It is increasingly recognized that this concept is of paramount importance in the investigation of health and health-related issues.

Individuals are responsible for making informed and accurate decisions regarding their health or illness status in all spheres of life (work, school, home, social relations, etc.) and at every age (Person & Sanders, 2009). Mothers managing their children's healthcare, the elderly ensuring the correct use of prescription medications, and employees identifying potential health hazards and taking necessary precautions in the workplace are all examples of this responsibility. Furthermore, all individuals are faced with complex treatment decisions, such as applying to the correct health unit during illness, understanding and evaluating information provided by health personnel, analyzing risks and benefits in treatment processes, and calculating dosages (Nielsen-Bohlman, Panzer & Kindig, 2004). In all these scenarios, individuals must possess a fundamental level of health literacy for effective health care and management (Nutbeam, 2000; Özdemir, Alper, Uncu & Bilgel, 2010).

Many diseases can be prevented through addressing information gaps and promoting behavioral changes. Health literacy is a behavioral change that should be instilled in individuals during the stage when their awareness of diseases increases and they begin to comprehend what they read regarding health. For this reason, the background and awareness of classroom

teachers on this subject are considered vital. Primary school teachers are among the primary figures with whom a primary school child spends the most time, second only to their family. Consequently, primary school teachers play a significant role in establishing a state of readiness in children regarding health literacy, as they do in many other subjects. The qualified human resources required for the development and progress of societies can only be achieved through the education provided by well-trained teachers (Seferoğlu, 2001). To raise the qualified individuals that society needs, it is first expected that teachers themselves possess these qualities (Şahin, 2004). Teachers with these attributes are the ones who will guide children most accurately in their steps toward the future. In this sense, classroom teachers specifically direct the cognitive, affective, and psycho-motor development and lifestyle of future generations, shaping their attitudes toward society and influencing their communication, research, and creativity skills. Furthermore, primary school teachers are characterized as the very reason for a country's existence (Ataünal, 1994). As stated here, primary school teachers serve as a guiding light for both the existing society and the generation that will shape the future. Primary school teachers hold great importance in raising individuals who are well-informed and engaged in health matters in every respect. Therefore, the health literacy levels of primary school teachers should be taken into consideration, and it is foreseen as crucial to identify and remedy any deficiencies in this area. In this context, addressing the shortcomings of prospective primary school teachers regarding health literacy during their undergraduate education, or improving their levels, will be possible through the identification of these gaps. Should it be determined that the health literacy levels of prospective primary school teachers are low, targeted courses to support health literacy should be provided during the undergraduate stage as a complementary goal it is aimed to take steps toward creating the content of such courses and planning their inclusion in the curriculum as a supportive field of study. With this objective, it is believed that this study will be effective in alleviating the problem to some extent, improving the health literacy levels of prospective primary school teachers, and providing a significant contribution to the literature.

METHOD

Research Model

In this study, the survey method, one of the quantitative research methods, was employed. Survey research is defined as a type of study conducted on a relatively larger sample compared to other research types, aiming to determine participants' opinions or characteristics such as interest, skill, ability, and attitude regarding a subject or an event (Fraenkel & Wallen, 2006). In survey studies, the research problem must be sufficiently important and interesting to encourage participants to respond to questions, thereby facilitating the conduct of the study. Considering the nature of survey studies, the scale, one of the data collection tools frequently used in screening research, has been determined as the data collection tool in this study.

Study Group

The study group included a total of 141 prospective primary school teachers enrolled in the 1st, 2nd, 3rd, and 4th grades of the primary education undergraduate program at Bayburt University's Faculty of Education. In the selection of the study group, the convenience sampling method, one of the non-random sampling methods, was used. In convenience

sampling, individuals who are volunteers, available, or easily accessible are included in the sample (Johnson & Christensen, 2014), and thus, convenience sampling provides an advantage to the researcher in terms of preventing loss of money, time, and labor (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz & Demirel, 2014). Demographic information regarding the prospective primary school teachers in the study's sample group is presented in table 1.

Table 1. *Demographic characteristics of the study group*

Variable	Category	N	%
Grade Level	1 st year	34	24.1
	2 nd year	32	22.7
	3 rd year	29	20.6
	4 th year	46	32.6
Total		141	100

Data Collection Tool and Data Collection Process

The TSOY-32 Health Literacy Scale was used as the data collection tool in the study. As the data collection instrument, the TSOY-32 self-report scale, developed by Okyay, Abacıgil, and Harlak (2016) to assess health literacy in individuals aged 15 years and older with at least a primary school education, was used. The scale is based on the conceptual framework developed by the European Health Literacy Research Consortium (HLS-EU CONSORTIUM, 2012). However, unlike the original scale, TSOY-32 is structured based on a 2x4 matrix, taking two main dimensions instead of three. Accordingly, the matrix consists of a total of eight components: two dimensions (Treatment and Service, and Disease Prevention/Health Promotion) and four processes (Accessing health-related information, Understanding health-related information, Evaluating health-related information, and Using/Applying health-related information).

In the scale, a score of 0 indicates the lowest health literacy, while a score of 50 indicates the highest health literacy. The level of health literacy was evaluated in four categories based on the scores obtained:

(0-25) points: Inadequate health literacy

(>25-33) points: Problematic – Limited health literacy

(>33-42) points: Sufficient health literacy

(>42-50) points: Excellent health literacy

Data Analysis

SPSS 27.0 software package was used for data analysis. Forms identified as incompletely filled were excluded from the data set. To determine whether the data were normally distributed, the arithmetic mean, median value, coefficient of variation, histogram chart, and skewness and kurtosis values were examined. It was determined that the data distribution met

the assumption of normality. The chart regarding the distribution of the data is presented in Figure 1.

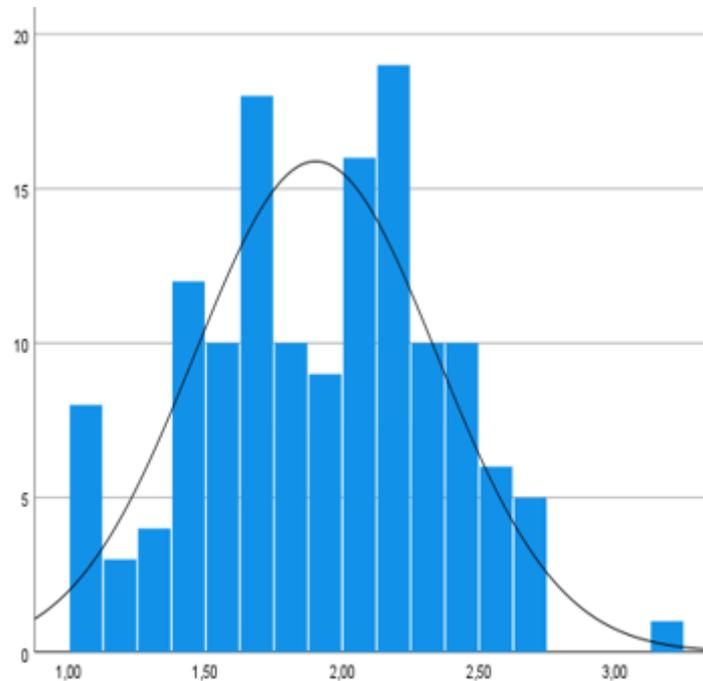


Figure 1. Graph of the normality distribution of the data

Descriptive statistics (frequency, percentage, arithmetic mean, standard deviation) were utilized in evaluating the research data. One-way analysis of variance (ANOVA) was applied for the analysis of the data. A significance level of $p < .05$ was adopted for the research. Group sizes and the assumption of homogeneity were taken into account when using multiple comparison tests. In interpreting the effect size, Cohen, Manion and Morrison (2007) cut off points were used as a reference. Accordingly, values between 0.01 and 0.05 were evaluated as small; between 0.06 and 0.137 as medium; and 0.138 and above as large effect size. The descriptive statistical values for the overall scale and its sub-dimensions are presented in Table 2.

Table 2. Descriptive statistics of the overall scale and its subdimensions

Scale	Mean	SD	Skewness	Kurtosis
TSOY 32	34.97	13.90	.02	-.48
Treatment and Service	36.23	7.11	.15	-.59
Disease Prevention and Health Promotion	33.71	7.98	.26	.24

The reliability of the scale in Turkish was evaluated using internal consistency (Cronbach's Alpha). The overall internal consistency coefficient of the scale was calculated as .94. The Cronbach's Alpha coefficient for the first dimension, the "Treatment and Service" sub-dimension, was .89, and the coefficient for the second dimension, the "Disease Prevention and Health Promotion" sub-dimension, was .90.

Regarding the components, the coefficients were calculated as .81 for accessing health-related information, .80 for understanding health-related information, .80 for evaluating health-

related information, and .76 for using/applying health-related information. As a result of the analyses, it is observed that the Turkish version of the scale possesses a high level of internal consistency. The calculation of the overall Cronbach's Alpha coefficient as .94 indicates that all items strongly serve the construct being measured and that the scale is highly reliable. The alpha coefficients for the sub-dimensions are also above acceptable levels. The values obtained as .89 for the "Treatment and Service Sub-dimension" and .90 for the "Disease Prevention and Health Promotion Dimension" demonstrate that these sub-dimensions are also highly reliable. Furthermore, the alpha values calculated for the components of accessing (.81), understanding (.80), evaluating (.80), and using/applying (.76) health-related information are all above .70, indicating that each of these components has an adequate level of internal consistency. In line with these results, it can be stated that the Turkish version of the scale provides reliable measurements at both the holistic and sub-component levels.

FINDINGS

Findings Regarding the Examination of Health Literacy Levels of Prospective Primary School Teachers

The total score averages obtained by the teacher candidates from the scale according to their grade levels, as well as the mean score values for all grade levels, are presented in Table 3.

Table 3. *Distribution of health literacy levels of prospective primary school teachers by grade level*

Grade level	TSOY-32 mean
1 st year	16.21
2 nd year	15.93
3 rd year	15.48
4 th year	13.32
Scale Total Mean	15.24

When Table 3 is examined, as a result of calculating the obtained data using the (arithmetic\ mean - 1) \ times [50/3] formula, it is observed that the mean scores obtained from the scale were 16.21 for 1st-year prospective primary school teachers, 15.93 for 2nd-year candidates, 15.48 for 3rd-year candidates, and 13.32 for 4th-year candidates. Based on these values, it was concluded that the health literacy levels of the prospective primary school teachers are at the "inadequate health literacy level." Furthermore, the overall mean value obtained was calculated as 15.24

Findings Regarding the Examination of Health Literacy Levels of Prospective Primary School Teachers According to Grade Level

A one-way analysis of variance (ANOVA) was conducted to determine whether the health literacy levels of prospective classroom teachers differ according to their grade level. As a result of the analysis, it was observed that the variances were homogeneous (Levene $F(3,137)=.875, p=.46$). The findings are presented in Table 4.

Table 4. ANOVA analysis results of TSOY-32 scores of prospective primary school teachers

	Sum of Squares	df	Mean Square	F	p
Between Groups	.767	3	.256	1.314	.273
Within Groups	26.657	137	.195		
Total	27.424	140			

When Table 4 is examined, since the significance value calculated as a result of the ANOVA test is $p > 0.05$ ($p = .273$), there is no significant difference between the groups according to class level.

DISCUSSION and CONCLUSION

In this study, the health literacy levels of prospective primary school teachers were examined, and it was determined that they generally fall into the "inadequate health literacy" category (Table 3). This situation indicates that prospective primary school teachers are not sufficiently equipped to acquire and understand basic health information or to use this information effectively in decision-making processes. The findings point to a significant deficiency, not only in terms of the individual health awareness of prospective primary school teachers but also regarding the students they will educate in the future. Especially in today's world, where health-related information is becoming increasingly complex, the lack of these competencies may hinder individuals' ability to develop healthy lifestyle behaviors. Similarly, the study by Yilmazel and Çetinkaya (2015) stated that the vast majority of teacher candidates had inadequate health literacy levels. Kickbusch, Maag, Heggenhougen, and Quah (2008) defined health literacy as the ability of individuals to access, understand, and use health information, emphasizing that this skill is a competency that should develop throughout life and is a critical element for public health. In this context, the findings indicate that greater emphasis should be placed on content and practices that support health literacy within teacher education programs.

On the other hand, the literature also includes studies indicating higher levels of health literacy. For instance, Bayram (2022), in a study conducted with prospective social studies teachers, reported that the participants had high levels of health literacy. Similarly, Dönel Akgül and Karaca (2024), in their research with science teachers, found that more than half of the teachers possessed adequate and excellent levels of health literacy. These findings differ from the results obtained in the present study and suggest that health literacy levels do not exhibit a homogeneous distribution among prospective teachers and teachers. This situation indicates that health literacy levels may vary depending not only on individual characteristics but also on discipline-specific course content, the emphasis placed on health-related topics within educational programs, and the quality of the education provided.

The finding that similar levels of low health literacy were observed across all grade levels indicates that systematic and comprehensive education on this topic is not sufficiently integrated into teacher education programs. The absence of significant improvement in prospective teachers' health literacy levels over the four-year program suggests that this issue is either not addressed at all in the curriculum or is treated in a superficial manner. However,

teachers should be equipped not only with academic knowledge but also with healthy lifestyle skills and the competence to impart these skills to their students. Indeed, Dost and Üner (2020) emphasize that enhancing teachers' health literacy levels is a crucial factor in supporting students' healthy lifestyle behaviors and increasing the effectiveness of school-based health education. In this regard, it is essential to incorporate courses that support health literacy into teacher education curricula and to present these contents through applied, interdisciplinary, and real-life-oriented approaches. Furthermore, enabling prospective teachers to effectively use digital health resources, raising their awareness of accessing reliable information, and fostering their critical thinking skills are considered fundamental areas for the sustainable enhancement of health literacy. The findings of the present study can be said to be consistent, in this respect, with the results reported by Kilic, Tasci, and Altunoglu (2023), which indicate that prospective teachers' health literacy levels are low.

In addition, the study examined whether there were significant differences in health literacy levels according to grade level. The results of the one-way analysis of variance (ANOVA) indicated that the obtained p value ($p = .273$) was greater than the .05 significance level (Table 4). Similarly, Yozkat (2025) found in a study conducted with prospective science teachers that prospective teachers' health literacy levels did not differ significantly according to grade level. This finding suggests that health literacy is not a skill that develops automatically as the level of education progresses; rather, it is influenced by multidimensional factors such as individuals' access to information, environmental influences, media and digital resource use, and levels of personal awareness. In this context, the development of health literacy should not be limited to theoretical content added to the curriculum, but should be addressed through holistic and practice-oriented approaches that encompass individual, cultural, and technological dimensions.

In conclusion, it can be argued that there is a need for more qualified, systematic, and sustainable education in health literacy in order for prospective teachers not only to manage their own health effectively but also to equip their future students with accurate, reliable, and scientifically grounded health information. This need highlights the importance of addressing health literacy within teacher education programs through holistic, practice-based, and interdisciplinary approaches, and necessitates the development of prospective teachers' skills in critical thinking, accessing reliable information, and effectively using digital health resources.

However, this study has certain limitations. The sample was determined using convenience sampling, which limits the generalizability of the findings to all pre-service primary school teachers. The fact that the sample was drawn from a single university and consisted of voluntary participants raises the possibility that health literacy levels may vary across different institutional and socio-cultural contexts. Therefore, future studies employing probability sampling methods and including participants from multiple universities are expected to provide more comprehensive and generalizable evidence regarding the health literacy levels of pre-service teachers.

Declaration of Conflicting Interests

The authors declare that there is no conflict of interest with any institution or person within the scope of the study.

Statements of Publication Ethics

We hereby declare that the study has not unethical issues and that research and publication ethics have been observed carefully.

Researchers' Contribution Rate

The authors contributed equally to all processes of the article. The authors have read and approved the final version of the article.

Ethics Committee Approval Information

The ethics committee document of this study was approved by the ethics committee decision of Bayburt University Rectorate dated 30.04.2024 and numbered 201060.

REFERENCES

Ataüinal, A. (1994). *The problem of training primary school teachers in Turkey (1923-1994)*. Ankara: Ministry of National Education (MEB) Publication of the General Directorate of Higher Education.

Bayram, H. (2022). An investigation of social studies teachers' health literacy levels and their status of reflecting health literacy on their classroom behaviors. *International Journal of Eurasia Social Sciences (IJOESS)*, 13(48), 543-565.

Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö. A., Karadeniz, Ş., & Demirel, F. (2014). *Scientific research methods* (16th Edition). Ankara: Pegem Academy Publishing.

Cohen, L., Manion, L. & Morrison, K. (2007). *Research Methods in Education* (6th Ed.). London & New York: Routledge.

Dönel Akgül, G., & Karaca, Ö. (2024). Determination of health literacy levels of science teachers. *Journal of Performance and Quality in Health*, 21(1), 28-47.

Dost, A., & Üner, E. (2020). Why is it important to raise teachers' health literacy levels?. *Istanbul Gelişim University Journal of Health Sciences*, 12, 475-483.

Fraenkel, J. R., & Whallen, N. E. (2006). *How to design and evaluate research in education*. New York: McGraw Hill International Edition.

Güneş, G., Çolaklar, H., Biçen Aras, B., & Turan, A. (2013, September 19-21). *Approaches to medical literacy*. ÜNAK 2013 Conference, Istanbul, Turkey.

Johnson, B., & Christensen, L. (2014). *Educational research: Quantitative, qualitative, and mixed research* (4th Edition). (Trans. S. B. Demir). Ankara: The Educating Book.

Kickbusch, I., Maag, D., Heggenhougen, K., & Quah, S. R. (2008). International encyclopedia of public health. *International Encyclopedia of Public Health*, 3, 204-211.

Kilic, D., Tasci, G., & Altunoglu, B. D. (2023). Examination of health literacy levels of preservice teachers. *Journal of Education in Science, Environment and Health (JESEH)*, 9(3), 256-267.

Nielsen-Bohlman, L., Panzer, A. M., & Kindig, D. A. (2004). *Committee on health literacy. Health literacy: A prescription to end confusion*. Washington, DC: National Academies Press.

Nutbeam, D. (2000). Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st Century. *Health Promotion International*, 15(3), 1-9.

Okyay, P., Abacıgil, F., & Harlak, H. (2016). Turkey health literacy scale 32 (TSOY-32). In P. Okyay & F. Abacıgil (Eds.), *Reliability and validity study of Turkey health literacy scales* (pp. 43-61). Ankara: T.R. Ministry of Health.

Özdemir, H., Alper, Z., Uncu, Y., & Bilgel, N. (2010). Health literacy among adults: a study from Turkey. *Health Education Research*, 25(3), 464-477.

Person, A., & Sanders, M. (2009). Health literacy revisited: What do we mean and why does it matter?. *Health Promotion International*, 24(3), 285-295.

Rintaningrum, R. (2019). Explaining the important contribution of reading literacy to the country's generations: Indonesian's perspectives. *International Journal of Innovation, Creativity and Change*, 5(3), 936-953.

Seferoğlu, S. S. (2001). Teacher competencies and professional development. *Education in the Light of Science and Reason*, 117-125.

Shara, A. M., Andriani, D., Ningsih, A. W., & Kisno (2020). Correlating reading literacy and writing literacy in junior high school Pematangsiantar. *Journal of English Education*, 5(2), 72-85.

Şahin, A. E. (2004). Determination of teacher competencies. *Education in the Light of Science and Reason*, 5, 58-62.

Türkoğlu, N., & Kılıç, D. (2021). Adaptation of the health literacy scale into Turkish: A validity and reliability study. *Anadolu Journal of Nursing and Health Sciences*, 24(1), 25-33.

Yılmazel, G., & Çetinkaya, F. (2015). Health literacy among schoolteachers in Çorum, Turkey. *Eastern Mediterranean Health Journal*, 21(8), 598-605.

Yozkat, G. (2025). *Examination of pre-service science teachers health literacy levels and their attitudes towards vaccine hesitancy* (Thesis No. 943331) [Master thesis, İnönü University]. YÖK Thesis Center.

Zaralı, F., & Dede, Z. (2011). *T.R. Ministry of Health General Directorate of Primary Health Care Services, glossary of health promotion and development* (1st Edition). Ankara: Anıl Printing.