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Evaluation of High School Students' Knowledge and Awareness of Medical Information, Specifically on ENT Diseases

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Abstract

Introduction: Every stage of education is valuable, but high school is the most critical period for career choice before university. This is because the university life, which is the basis for career selection, begins after high school. The aim of this study is to evaluate the medical knowledge and awareness of high school students, focusing on ENT (ear, nose, and throat) diseases, across different grades and fields.

Material and Methods: A survey form consisting of two sections was used as the data collection tool in the research. The first section contains a demographic information form, and the second section consists of 7 multiple-choice questions. An independent sample t-test was used to compare the averages of correct answers and total scores according to gender, grades, and fields. The ANOVA test was used to compare results based on age groups.

Results: Of the 54 students who participated in the study, 28 (51.9%) were female, and 26 (48.1%) were male. Of the participating students, 30 were from the Science-Technology (ST) department, and 24 were from the Anatolian High School (AL) department. After excluding 2 students who had previously participated in ENT disease-related training (both from the ST group), the percentage of students who answered the general ENT questions incorrectly was 6/24 (25.0%) in the AL group and 1/28 (3.6%) in the ST group. The number of students who requested additional health-related topics in the biology curriculum was 19/24 (79.2%) in the AL group and 27/28 (96.4%) in the ST group.

Conclusion: It was found that due to the science (biology) intensity of their education, the ST group had higher health knowledge specifically related to ENT diseases compared to the AL group, and the difference between the two groups was significant ($p < 0.001$). Despite the higher level of correct responses and knowledge in the ST group, there was a statistically significant difference between the two groups in their demand for more biology lessons ($p < 0.001$).

Discussion: Providing more biology lessons in high school would be beneficial both for career choices and for improving health literacy.

INTRODUCTION

Education serves as a foundational pillar in individual development, influencing cognitive skills, personal growth, and future opportunities (1). Throughout various educational stages, high school stands out as a critical time for students, marking a phase where they start making pivotal decisions about their future paths, particularly in careers related to medicine (2). This juncture is especially crucial for students contemplating medical professions, as high school often represents the first opportunity to delve into the fields of biology and health sciences.

The medical profession is increasingly recognized for its significant societal impact, with the capacity to enhance the quality of life at both individual and community levels. Recent global events, including pandemics, climate change, and health crises, have emphasized the vital role healthcare professionals play in society (3). The COVID-19 pandemic, in particular, has spotlighted the essential nature of medical workers, not only in the treatment and prevention of diseases but also in fostering community resilience. This global health crisis has underscored the urgency of motivating future generations to pursue careers in healthcare, especially given the escalating demand for qualified professionals capable of addressing contemporary and forthcoming health challenges (4).

To cultivate interest in medicine among students, it is crucial to provide early exposure to medical knowledge. High school biology classes often introduce fundamental concepts related to healthcare and medical science, creating an ideal platform for igniting curiosity and passion for medical professions (5, 6). By enriching the curriculum with medically-oriented content, educators can enhance students' understanding of health-related issues, thereby encouraging them to consider future careers in healthcare. The synergy between education and medicine is vital, not only for individual development but also for nurturing a society capable of effectively managing health challenges at various levels.

IMPORTANCE OF THE TOPIC

Medicine plays a pivotal role in daily life, directly impacting individual health and community well-being. Therefore, it is imperative that individuals possess a basic understanding of medical concepts to make informed health decisions for themselves and their families (7). Schools have a critical responsibility in fostering this understanding by integrating medical topics into their educational frameworks. Early exposure to medical knowledge equips students with essential tools that can benefit their personal lives and enable them to contribute effectively to public health initiatives.

Particularly, knowledge about common diseases, preventative strategies, and fundamental medical procedures empowers individuals to take proactive steps in managing their health. High school biology classes provide a unique opportunity to introduce students to these essential topics. However, the effective delivery of this information necessitates the implementation of well-structured educational programs that can engage students and offer a comprehensive understanding of medical issues (8). By embedding more medical content into biology curricula and adopting contemporary teaching methodologies, educators can play a crucial role in fostering a more health-literate society. This, in turn, may lead to improved health outcomes for both individuals and communities, as people become more informed about medical conditions and treatment options.

A high-quality biology education, reinforced with practical examples of medical conditions and their management, is essential for nurturing students' interest in the healthcare sector. As students deepen their understanding of health and medicine, they may be inspired to explore potential careers in healthcare, which is increasingly vital in light of the global shortage of medical professionals. Focusing on specific areas of medical knowledge—such as ear, nose, and throat (ENT) diseases—can provide a practical and engaging entry point into the broader medical field.

AIM

The medical field comprises a vast array of specialties, each presenting unique challenges and opportunities. ENT diseases are particularly prevalent, impacting individuals across diverse demographics (9). These conditions can range from simple infections, such as the common cold, to more

complex disorders requiring surgical interventions. Given their widespread nature, ENT diseases present an excellent educational topic for high school students, highlighting the importance of medical knowledge.

This study aims to evaluate high school students' knowledge and awareness of medical information, specifically focusing on ENT diseases. It will assess students' understanding of these conditions and investigate the influence of biology lessons on their knowledge. By examining factors such as gender, academic department, and prior exposure to medical information, this study seeks to identify knowledge gaps and areas where the biology curriculum can be enhanced to better serve students' needs. Ultimately, the goal is to contribute to the development of educational programs that effectively equip students for personal health management and potential careers in healthcare.

METHOD

The study's population comprises high school students enrolled at Bahçeşehir High School in Eskişehir, Turkey. A sample of 54 students from two distinct departments—Science-Technology (ST) and Anatolian High School (AH)—was selected during the spring term of the 2023-2024 academic year. This sample includes both male and female students, representing a diverse range of academic backgrounds, facilitating a comprehensive evaluation of the student population.

Data collection involved a survey divided into two sections. The first section gathered demographic information, including gender, age, academic department, and prior training related to ENT diseases. The second section contained seven multiple-choice questions aimed at assessing students' knowledge regarding ENT diseases, encompassing symptoms, treatment options, and prevention strategies. The data were analyzed using the SPSS 27 statistical program (IBM, Endicott/NY). An independent sample t-test was employed to compare the averages of correct answers and total scores based on gender, grade level, and academic department. Additionally, an ANOVA test was utilized to compare knowledge levels across different age groups.

RESULTS

The study included a total of 54 students, with 28 (51.9%) female and 26 (48.1%) male participants. Among these, 30 students were from the ST department, and 24 from the AH department (Table 1). Notably, two students from the ST group had received prior training related to ENT diseases, leading to their exclusion from specific analyses to ensure a focus on students without prior exposure to ENT-specific education.

Survey results indicated a significant disparity in knowledge regarding ENT diseases between the two departments. Students from the ST department demonstrated markedly higher levels of awareness, with only 1 out of 28 students (3.6%) answering incorrectly, compared to 6 out of 24 students (25.0%) from the AH group. This stark difference suggests that the rigorous science-focused curriculum of the ST department plays a pivotal role in enhancing students' comprehension of medical topics.

Additionally, the survey revealed a strong interest among students in increasing health-related education within their biology classes. Among AH students, 19 out of 24 (79.2%) expressed a desire for more medical content in their lessons, while 27 out of 28 (96.4%) students in the ST group shared the same enthusiasm (Table 2). This widespread interest emphasizes the necessity of integrating more health-related topics into the high school biology curriculum, as students recognize the importance of medical knowledge for their education and future career prospects.

CONCLUSION

The findings of this study illuminate a clear disparity in medical knowledge, particularly regarding ENT diseases, between students in the Science-Technology (ST) and Anatolian High School (AH) departments. The higher knowledge levels observed in the ST department—characterized by a more intensive focus on biology and science—underscore the crucial role of a science-rich curriculum in fostering medical literacy among students (10).

Despite the elevated knowledge levels in the ST group, both departments expressed a robust desire for additional health-related education in their biology lessons. This indicates that while the current curriculum lays a solid foundation, there remains significant room for improvement regarding the incorporation of medical content into high school biology classes (11).

DISCUSSION

The results of this study resonate with the overarching objective of biology education, which is to empower students with the knowledge necessary to navigate health challenges throughout their lives. The findings reveal that a well-structured and comprehensive biology curriculum can substantially enhance students' awareness of prevalent medical conditions, such as ENT diseases. By broadening the scope of biology lessons to encompass more medical topics, educators can help students cultivate a deeper understanding of health, potentially leading to improved health outcomes for individuals and society at large (12).

In addition to bolstering health literacy, amplifying the focus on medical topics in biology education may profoundly influence students' future career aspirations. As students gain exposure to the medical field, they are more likely to be inspired to pursue healthcare careers, addressing the escalating global demand for medical professionals (13). Furthermore, an increased emphasis on health education at the high school level could contribute to a more informed and health-conscious society, empowering individuals to make informed decisions regarding their well-being.

In conclusion, this study highlights the necessity of integrating medical knowledge into the high school curriculum, particularly in biology classes. The evidence suggests that enhancing educational content and fostering interest in healthcare can better prepare students for future health challenges and career opportunities. Continued research and curriculum development are essential to ensure that students are equipped with the knowledge and skills necessary to thrive in a rapidly evolving healthcare landscape.

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