ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH

INNOVARE ACADEMIC SCIENCES
Knowledge to Innovation

Vol 17, Issue 3, 2024

Online - 2455-3891
Print - 0974-2441

Research Article

EVALUATION OF KNOWLEDGE AND AWARENESS ON AUTOIMMUNE MULTIPLE SCLEROSIS AMONG PHARMACY AND NURSING STUDENTS OF CHITRADURGA – A DESCRIPTIVE CROSS-SECTIONAL STUDY

MOHAMMED ZAKIR A[1], LALREMSANGI[1], ABUBAKER SIDDIQ[2]*

[1]Department of Pharmacy Practice, S J M College of Pharmacy, Chitradurga, Karnataka, India. [2]Department of Pharmacology, S J M College of Pharmacy, Chitradurga, Karnataka, India.
*Corresponding author: Dr. Abubaker Siddiq; Email: siddiq.pharma@rediffmail.com

Received: 12 September 2023, Revised and Accepted: 15 December 2023

ABSTRACT

Objectives: The study's goals were to evaluate knowledge and awareness among the students regarding multiple sclerosis (MS) and to compare the knowledge of the same among pharmacy and nursing students.

Methods: This is a descriptive cross-sectional study conducted among the pharmacy and nursing students of Chitradurga, carried out for 6 months. The questionnaire was distributed among students containing 15 questions regarding MS. Each accurate response received a score of "1," while every incorrect response received "0." The frequency and percentage were obtained using descriptive approaches. The data are presented as a frequency distribution of mean and standard deviation (SD).

Results: A total of 500 participants were enrolled in the study, among which 319 were pharmacy students and 181 were nursing students. The results analyzed that the knowledge assessment mean scores of pharmacy students were higher than those of nursing students. It also showed that students who come under the age group of 23–27 years have higher knowledge compared to the 18–22-year age group.

Conclusion: This study concluded that pharmacy students had a piece of better knowledge than nursing students since these occupations play such a significant part in providing health care, knowledge, and understanding need to be raised. Hence, awareness and education about MS should be conducted to enhance students' knowledge.

Keywords: Multiple sclerosis, Awareness, Knowledge, Education.

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INTRODUCTION

Multiple sclerosis (MS) is the most prevalent chronic inflammatory disease of the central nervous system (CNS), affecting over 2 million individuals globally [1]. It typically strikes people in their reproductive years, primarily between ages 20 and 40, and often results in substantial disability [2]. The exact etiology of MS remains elusive, and it is considered one of the serious health concerns among teenagers. Genetic and environmental factors are recognized as key contributors to the progression of MS [3,4].

According to the WHO's Atlas of MS from 2008, the worldwide prevalence of MS was approximately 30 cases/100,000 individuals, with 2.1 million diagnosed cases during that year (WHO, 2008) [5]. Subsequent data from 2013 indicated a global median prevalence of 33 cases/100,000 people [5]. Pathophysiological research has suggested a role for early-life exposure to specific infectious agents and genetic predisposition in the development of MS [6]. It is worth noting that MS disproportionately affects females, partly attributed to genetic predisposition. Furthermore, several environmental factors, including obesity, smoking, and low vitamin D levels, have been associated with an increased risk of developing MS [7].

MS is a progressive, incurable illness that substantially impacts the social, economic, and emotional well-being of patients [8]. The disease manifests through a wide array of symptoms, which can affect various regions of the CNS, leading to sensory disturbances, walking difficulties, visual impairments, and less common symptoms such as swallowing problems, speech issues, breathing difficulties, and more [9,10].

The diagnosis of MS typically involves a thorough medical history review and neurological assessment, utilizing diagnostic methods such as magnetic resonance imaging, cerebrospinal fluid analysis through lumbar punctures, evoked potentials, and blood sample analysis [11]. While there is no definitive cure for MS, there are medications available that can slow its progression. The primary focus of treatment is the administration of immunosuppressants and immunomodulators [12,13].

Recognizing the pathophysiology, types, diagnostic modalities, and medication effectiveness of MS is critical for pharmacy and nursing students. This knowledge empowers them to make informed clinical decisions and provide professional guidance to patients, enabling them to better cope with the disease and achieve emotional stability. Given these considerations, this research aims to assess and enhance knowledge and awareness of autoimmune MS among pharmacy and nursing students in Chitradurga.

METHODS

This descriptive cross-sectional study was conducted among pharmacy and nursing students from colleges in Chitradurga over 6 months. A total of 500 students, drawn from one nursing college and one pharmacy college, who met the study's criteria and provided their informed consent, were included in the research. The inclusion criteria encompassed pharmacy and nursing students of both genders who willingly agreed to participate in the study. The exclusion criteria comprised students who expressed disinterest in completing the questionnaire and those who had dropped out of their respective courses. Before commencing

the study, ethical approval was obtained from the Institutional Ethical Committee of SJM College of Pharmacy in Chitradurga, as indicated by the reference number SJMCP/622/2022-2023.

Following the acquisition of informed consent from the participants, a self-administered questionnaire assessing their knowledge and awareness of MS was distributed as pamphlets. Data collection was executed by the investigators while maintaining strict confidentiality throughout the process. The questionnaire assigned a score of "1" for each correct response and "0" for each incorrect response. Subsequently, the knowledge and awareness-based questionnaire was evaluated, and mean knowledge scores were calculated.

Statistical analysis

The data were entered in the Microsoft Excel 2010 version, and the results were analyzed using the Statistical Package for the Social Sciences (SPSS 25.0). Descriptive methods were applied to obtain the frequency and percentage, and data are presented as mean standard deviations (SD) as frequency distribution.

RESULTS

500 students from one pharmacy college and one nursing college in Chitradurga were screened for this study. Most participants were female, constituting 56% of the total sample (n=280). The gender distribution is summarized in Table 1.

The respondents were categorized into two age groups: 18–22 years old and 23–27 years old. The highest percentage of respondents, 72%, fell within the 18–22 age group.

Level of knowledge questionnaire assessment

The knowledge questionnaire included nine multiple-choice questions assessing basic knowledge and awareness of MS. Five questions had answer choices "Yes," "No," or "Don't know," in contrast one question assessed understanding of autoimmune diseases. Due to the pharmacy curriculum's emphasis on medications and medical conditions, pharmacy students generally had greater knowledge levels. In contrast, nursing students emphasize patient care.

A statistical analysis of the scores was carried out, with mean and standard deviation values calculated. The results showed mean knowledge scores of 8.60 for nursing students and 10.44 for pharmacy students. Standard deviation values were ±2.357 for nursing and ±2.581 for pharmacy. The paired t-test values were −0.146 for nursing and −0.139 for pharmacy, with p=0.041 (highly significant) for nursing and 0.032 (highly significant) for pharmacy. These results indicate that pharmacy students possess relatively higher knowledge (10.44) than nursing students (8.60). The outcomes are depicted in Table 2.

The results also showed that the mean knowledge scores for the age groups of 18–22 years and 23–27 years were, respectively, 9.31 and 10.96. These findings are shown in Table 3.

Most students exhibited a solid comprehension of MS, as evidenced by their replies to knowledge-based questions. Responses were categorized as "Yes," "No," or "I don't know," as presented in Table 4.

Table 1: Details of gender-wise distribution (n=500)

S. No.	Gender	Frequency	Percent
1	Males	220	44.0
2	Females	280	56.0
Total		500	100

Table 2: Details of course mean knowledge scores

Course	Scores Mean (±SD)
Nursing	8.60 (±2.357)
Pharmacy	10.44 (±2.581)

Table 3: Details of age group mean knowledge scores

Age group	Scores Mean (±SD)
18–22 years	9.31 (±2.600)
23–27 years	10.96 (±2.406)

DISCUSSION

The purpose of this study was to evaluate the knowledge and awareness of MS among students in the Pharmacy and Nursing programs in Chitradurga. The study encompassed 500 participants, consisting of 181 nursing students and 319 pharmacy students, mostly females (56%).

The study results demonstrated that pharmacy students had a higher mean knowledge score of 10.44 (69%) than nursing students, who scored an average of 8.60 (57%). Notably, the majority of students displayed adequate understanding, and those in the 23–27-year age group exhibited better understanding than their counterparts in the 18–22 age group.

Understanding the fundamental aspects of a specific disease, such as its common manifestations and the affected body systems, is pivotal for accurate diagnosis and effective management. Notably, the students displayed good knowledge regarding the impact of MS on the CNS, with 85% correctly identifying the CNS as the affected system. However, 4% of students mistakenly believed that it affected the cardiovascular system and gastrointestinal tract systems. This finding surpasses a similar study by Kabli *et al.* [14], which reported 62.6% awareness.

Regarding demographics, the study included 44% male participants, while 56% were female. A majority (72%) fell within the 18–22 age group, with 28% in the 23–27 age group. While both age groups demonstrated improvement, the 23–27 age group exhibited more excellent knowledge, aligning with findings in a study by Farran *et al*. [15], which highlighted significant differences in knowledge between males and females regarding MS.

The study also revealed that 61% of participants correctly recognized that MS typically damages myelin, an improvement compared to Kabli *et al*.'s study, where only 40% of participants had this knowledge. Similarly, regarding the typical age of symptom manifestation, knowledge in this study was higher (61%) compared to Kabli *et al*.'s

Table 4: Responses given by subjects to knowledge-based questions

Questions	Nursing (%)		Pharmacy (%)	
	Yes	No	Yes	No
Is multiple sclerosis a transmittable disease?	10	82.3	6.3	88.4
Do you think multiple sclerosis has several types?	60.2	17.1	75.5	8.5
Pregnancy worsens multiple sclerosis	27.6	25.4	20	41.1
Is there a cure for multiple sclerosis?	59.7	16	38.9	38.5
Is there a medication that can control multiple sclerosis symptoms?	77.9	3.9	73	7.2

study. Concerning the curability of MS, 30% of participants in this study responded correctly, a significantly higher percentage than the 9.3% reported in Kabli *et al*.'s study.

The current study also established a correlation between age and the corresponding level of knowledge, indicating that students in the 23–27 age group had a more profound understanding of MS. In summary, this study underscores the need for enhanced knowledge and awareness among pharmacy and nursing students in Chitradurga indicating that pharmacy students exhibited a more favorable response than nursing students.

CONCLUSION

This study indicated a good level of understanding regarding the basics of MS among students. Pharmacy students have more knowledge than nursing students. It has also shown that students who come under the age group of 23–27 years have higher knowledge compared to the 18–22 age group. However, there is still room for improvement. Therefore, for the early detection and management of this disease to occur, more intensified awareness plans among the students are required.

Limitation of study

The study included only one pharmacy and nursing college of Chitradurga; hence, the entire pharmacy and nursing population cannot be generalized according to the results.

ACKNOWLEDGMENTS

The authors would like to thank all the participants who participated in the research activity. The authors are also thankful to the management for providing the necessary facilities to carry out this work through the principal, SJM College of Pharmacy Chitradurga.

AUTHORS CONTRIBUTION

All the authors have contributed equally.

CONFLICT OF INTEREST

The authors declare no conflicts of interest in preparing this research article.

AUTHORS FUNDING

This research has not received any specific grant from any funding agencies. This is self-funded research.

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