World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(RESEARCH ARTICLE)

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Comparison of gastrointestinal disorder symptoms based on the Gastrointestinal Symptom Rating Scale (GSRS) questionnaire in second and fifth-year medical students

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World Journal of Advanced Research and Reviews, 2025, 26(01), 2218-2222

Publication history: Received on 04 March 2025; revised on 14 April 2025; accepted on 16 April 2025

Article DOI: https://doi.org/10.30574/wjarr.2025.26.1.1288

Abstract

In responding to various situations in their daily academic environment, medical students are not free from complaints or symptoms of disorders in their respective gastrointestinal systems. Medical students in particular have a tighter lecture and practicum schedule than students in other majors. This is prone to having an impact on other health statuses and even their performance achievements. If this is not handled properly, it is feared that it will have a serious impact on their careers as doctors in the future. The reason of this ponder was to decide the comparison of side effects of gastrointestinal disarranges in second and fifth-year medical students. After that, it can be used to prevent and minimize symptoms of gastrointestinal disorders in medical students so as to provide a smooth educational process until they graduate as doctors. This research method is quantitative, comparing gastrointestinal symptoms to the level of study years as a medical student using GSRS questionnaire. The respondents of the study were 77 people with purposive-non-random-sampling data collection. The data obtained were analyzed using the independent sample Z test. The comes about of the consider appeared that the normal in the second-year student group (2.10 ± 0.96) was higher than the fifth-year student group (1.90 ± 0.92) and the significance was 0.366 ($p>0.05$). This shows that there is no significant difference between the symptoms of gastrointestinal disorders in second and fifth-year medical students.

Keywords: Medical education; Gastrointestinal symptoms; Physical health; Medical students

1. Introduction

Recurrent symptoms of digestive disorders can be a serious problem and certainly interfere with productivity, including among students (1). Medical students are known to be busy with lectures and organizations. This lifestyle often causes irregular and careless eating patterns, which have an impact on the emergence of various symptoms of digestive or gastrointestinal disorders. The predominance of stomach related side effects within the USA is nearly 20% (2) and abdominal pain is the most common disorder for outpatient visits (3).

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Functional gastrointestinal disorders are very common with a worldwide prevalence of 40%, it is more common in ladies than men and decreasing with age (4). The most common gastrointestinal disorder is functional dyspepsia (5). The prevalence of functional dyspepsia varies in several parts of the world. As in the example, in Western countries it is among the highest at around 10-40%, including the United States, while in Asian countries it is 5-30%. Globally, it can be said that the prevalence of functional dyspepsia is 5-11% (6).

Comparable thinks about conducted in Asia appeared predominance of 12.9%, 20,9%, 4.6%, 4% and 5.4% in Bangladesh, Singapore, China, India and Hong Kong, individually (7). Another indication is unremitting stomach torment which disturbs everyday life and features a negative impact on quality of life (8). Several factors that cause gastrointestinal disorders are unhealthy food intake and irregular eating patterns. Functional constipation in adolescents also has different prevalences in the following countries: 18.2% in Brazil, 15.6% in Hong Kong, and 12.7% in Columbia (9–11). Research in Semarang, Indonesia showed a higher incidence of constipation, namely 68.5% in adolescents and in Jakarta, Indonesia, 36.9% in students (12,13). The aim of this study was to find out the comparison of gastrointestinal symptoms in second and fifth-year medical students. The benefits of this think about are as information for teachers or consider program supervisors in taking preventive measures against understudies who are susceptible to experiencing symptoms of digestive disorders in medical students until they graduate as doctors. Screening of students who are susceptible to experiencing symptoms of gastrointestinal disorders can be given special treatment so that later when they have worked as prospective's doctor they have optimal health.

2. Material and methods

There were 77 active medical students of Airlangga University's Faculty of Medicine. The data was cross-sectional that collected in 2024. The subjects were second and fifth-year students aged 18-23 years. The research instrumentation consisted of the validated GSRS Questionnaire (14). The GSRS questionnaire is a disease-specific instrument consisting of 15 items combined into five symptom groups describing (1) Reflux; (2) Abdominal pain; (3) Indigestion; (4) Diarrhea and; (5) Constipation. The questionnaire has 7-ranked points with a Likert scale starting from 1 which means no discomfort at all and 7 which means very uncomfortable. The GSRS have been carried out well and documented on validity and reliability (15). The reliability test of the GSRS questionnaire obtained results of Cronbach's alpha 0.750 (14). Before collecting data, the researcher provided an explanation to prospective respondents in the form of research objectives. After that, the researcher made a request for permission for willingness and participation with informed consent. After signing the informed consent, respondents were asked to work on the GSRS questionnaire for 10-15 minutes. Further data processing used the statistic tools, that was SPSS version 29 statistical software, using the independent sample Z test.

3. Results and discussion

A total of 100% of respondents who have signed informed consent and participated in this study are 77 people. Based on gender, there are more women (59.70%, n = 46). The number of male respondents is 31 people (40.30%). The age of respondents is between 18-23 years. The distribution of student data based on gender and student study year level is shown in Table 1.

Table 1 Distribution of Student Data Based on Gender and Student Study Year Level

Variable	**Total (%)**
Gender	
Male	31 (40.30)
Female	46 (59.70)
Year Level	
Second year student	33 (42.85)
Fifth year student	44 (57.15)

In Table 2, there is an average score of each symptom of gastrointestinal disorders that appear in respondents based on the GSRS questionnaire. The score results are compared with the level of study year, namely second and fifth-year students. The variance of the homogeneity test with Levene Statistic is 0.651 ($p>0.05$) so the variance is not significantly

different so that the free sample Z test is carried out (the number of samples is more than 30). The results of the study showed that the average GSRS score in the second-year student group (X = 2.10 ± 0.96) was higher than the fifth year student group (X = 1.90 ± 0.92). The Z test showed that the significance was 0.366 (p>0.05).

Table 2 Distribution of Gastrointestinal Symptom Disorders According to Student Study Year Level

Year Level / Score (Mean±SD)	Second year level	Fifth year level	P value
Reflux	1,70±1,04	1,65 ± 1,38	0,864
Abdominal pain	2,15±0,97	2,22±1,29	0,800
Dyspepsia	2,15±0,97	2,23±1,15	0,761
Diarrhea	2,13±1,66	1,83±1,17	0,358
Constipation	2,38±1,66	1,61±0,94	0,011*
GSRS	2,10±0,96	1,90±0,92	0,366

Note: n=77; SD=standard deviation; *p<0,05

To determine the reflux score, respondents were asked 2 questions: (1) about the appearance of a burning sensation around the chest and (2) accompanied by a feeling of acid moving up into the stomach or a bitter or even sour taste in the mouth, and a burning sensation in the esophagus.

To calculate the stomach pain score, respondents were provided with 3 questions: (1) whether there were symptoms of pain or discomfort in the upper abdomen or epigastrium; (2) whether there were symptoms of hunger or extreme hunger and which were related to the desire to eat between meals; (3) whether nausea had occurred (nausea that wanted to vomit).

Furthermore, to determine the stomach-related disorder score, respondents answered 4 questions: (1) whether the respondent had ever experienced a rumbling stomach disorder, the rumbling referred to as vibrations or noises in the stomach; (2) a feeling of bloating which refers to swelling that is regularly associated with a sensation of gas or chatter in the stomach; (3) belching that is quite frequent and disturbing; (4) the appearance of gas/farts.

There are also 3 questions for diarrhea score: (1) presence of symptoms of loose stools; (2) experiencing loose stools; (3) feeling of urgent need to urinate. To determine the obstruction score, respondents answer 3 questions; (1) obstruction during the past week? (Obstruction refers to reduced ability to clean the intestines); (2) symptoms of defecation with hard stools; (3) respondents feel the sensation of not completely cleaning the intestines even though they have defecated or a feeling of intermittent bowel movements. All of the questions above are conditions in the last 1 week of the respondent. Meanwhile, the calculation of GSRS is the average of all the scores obtained.

The results of the study of gastrointestinal disorders that appeared in second and fifth-year students did not have critical contrasts for indications of reflux, abdominal pain, indigestion, and diarrhea (p>0.05). Only one symptom of gastrointestinal disorders was found to have a critical contrast between the two bunches, specifically clogging (p<0.05). However, the average GSRS score in the second-year student group was higher than in the fifth-year student group. This means that there is a tendency for symptoms of gastrointestinal disorders to occur in the second-year student group. The symptoms of gastrointestinal disorders in question are if there are combined results of factors that cause changes in intestinal motility, increased sensitivity of intestinal nerves. Other factors such as errors in interaction regulation can also occur between the brain and intestines. These factors can also be influenced externally, namely psychological and social influences (16). In addition, disorders can be caused by poor sleep habits, poor food intake, diet patterns, exercise habits, life-style, and excessive stress (17). The long-term effects of gastrointestinal symptoms include a decrease in the individual's quality of life (14).

Up to 80% of patients with functional dyspepsia report symptoms that are food-related (18) but the role of food in the development of functional dyspepsia remains unclear. High-fat diets may cause more indications, such as early satiety and bloating, compared with higher-carbohydrate foods (19). Tall utilization of chili peppers has been recommended to cause utilitarian dyspepsia in Asian people (20). Bidirectional impacts between the intestine and the brain; people with useful dyspepsia at standard were more likely to have uneasiness or sadness amid follow-up, and people with uneasiness and misery at pattern were more likely to have useful dyspepsia (21) and crabby bowel disorder (22).

Therapeutic understudies are a powerless populace bunch and are considered at chance for an assortment of psychosocial issues. This may be caused by students' destitute social life, delayed consider hours, diminished rest and recreation exercises, and the numerous exams that must be passed in arrange to graduate (23–25). Medical students have higher stress levels than other students. Medical students also take longer to study than students in other majors, which is associated with high levels of anxiety, self-doubt, and low self-confidence (26).

4. Conclusion

There was no significant difference in the symptoms of gastrointestinal disorders experienced between the second and fifth-year students.

Suggestion

It is necessary to collect internal and external factors that cause symptoms of gastrointestinal disorders per individual and determine the internal and external factors that are most related to symptoms of gastrointestinal disorders per individual. Suggestions for parents, educators and faculty officials to pay equal attention to second and fifth-year students because both have the possibility of having equal and the same symptoms of digestive disorders.

Compliance with ethical standards

Acknowledgments

Acknowledgments are expressed to the Airlangga University which has provided funding for this research with the number: 4527/B/UN3.FK/PT.01.03/2024.

Disclosure of conflict of interest

No conflict of interest is to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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