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Araştırma / Research Article

Üniversite öğrencilerinde konstipasyon problemi ve fiziksel aktivite düzeyi ilişkisi

Relation of constipation problem and physical activity level in university students

İlkin Çıtak Karakaya¹, Zeynep Kılıç², Ümüt Yılmaz³, Mehmet Gürhan Karakaya¹

ÖZET

Amaç: Fiziksel aktivite, üniversite öğrencilerinde konstipasyon sorununu inceleyen çalışmalarda nadiren incelenen bir konudur. Dolayısıyla bu kesitsel çalışma, üniversite öğrencilerinde konstipasyon sorunu ile fiziksel aktivite düzeyi arasındaki ilişkiyi incelemek ve konstipasyonla baş etme yöntemlerini ortaya koymak amacıyla gerçekleştirilmiştir. **Yöntemler:** 194 üniversite öğrencisinin sosyodemografik özellikleri kaydedilmiş, konstipasyon varlığı Konstipasyon için Roma II Kriterleri kullanılarak belirlenmiştir. Fiziksel aktivite düzeyi Uluslararası Fiziksel Aktivite Anketi ile değerlendirilmiştir. Konstipasyonla baş etme yöntemleri araştırmacılar tarafından hazırlanan bir anket kullanılarak değerlendirilmiştir. **Bulgular:** Roma II Kriterlerine göre örneklemedeki konstipasyon problemi prevalansı %20.6 olarak bulunmuştur. Konstipasyon problemi olan öğrencilerin ortalama toplam fiziksel aktivite puanının diğerlerinden düşük olduğu görülmüştür ($p < 0.05$). Sıvı alımını artırma, (%80), defekasyon sırasında abdomene masaj yapma (%60) ve lifli besinlerin tüketimini artırmanın (%50), konstipasyonu olan öğrenciler tarafından en sık kullanılan baş etme yöntemleri olduğu saptanmıştır. **Sonuç:** Üniversite öğrencilerinde konstipasyon prevalansı oldukça yüksektir ve konstipasyon problemi olanların fiziksel aktivite puanları bu problemi olmayanlardan daha düşüktür. Üniversite öğrencilerini konstipasyonun olası nedenleri ve baş etme yöntemleri konusunda bilgilendirmenin ve eğitmenin, ayrıca onları fiziksel aktivitelere/spora yönlendirmenin konstipasyonu önleme ve yönetmede faydalı olabileceği düşünülmüştür.

ABSTRACT

Background: Physical activity is a rarely investigated issue in studies focusing on constipation problem in university students. Therefore, the aim of this cross-sectional study is to investigate the relation of constipation problem and physical activity level in university students, and to find out the strategies they use to cope with constipation. **Methods:** Socio-demographic characteristics of 194 collegians were recorded and presence of constipation was determined by Rome II Criteria for Constipation. Physical activity level was evaluated by the International Physical Activity Questionnaire. Coping methods with constipation were evaluated by a questionnaire prepared by the researchers. **Results:** The prevalence of constipation problem was 20.6% (57.5% females and 42.5% males) in the sample according to the Rome II criteria. Mean physical activity total score of the students with constipation was lower than the others ($p < 0.05$). Increasing liquid intake (80%), massaging the abdomen during defecation (60%), and increasing the intake of nutrients rich from fiber (50%) were the most frequently used coping methods by the students with constipation. Fifteen percent of the subjects indicated no coping methods. **Conclusions:** The prevalence of constipation was quite high among university students, and physical activity scores of the students with constipation were lower than those without this problem. It is considered that informing and educating university students about the possible causes of and the coping methods for constipation and also referring them to physical activities/sports may be of benefit in prevention and management of constipation.

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INTRODUCTION

Constipation is a prevalent, often chronic, gastrointestinal motility disorder with an estimated prevalence of 15 percent (1). Chronic constipation is commonly described as constipation of more than 12 weeks duration that does not respond to dietary fiber or simple therapeutic measures (2). Women are more than 3 times as likely as men to experience constipation. Nonwhites, those with a lower income, limited education, history of sexual abuse, symptoms of depression, or physical inactivity are reported as other disproportionately affected groups (1).

Constipation may result from slow colonic transit, fecal evacuation disorders or a combination of both. Low fiber

diet, insufficient fluid intake, irregular toilet habit, lack of exercise, prolonged bed rest and chronic consumption of drugs may all lead to this chronic ailment (3).

Physical assessment involving a digital rectal exam and detailed patient questioning are used for diagnosis of constipation. The Rome II criteria were developed to promote consistency in the diagnosis of constipation (2). The Rome II criteria for chronic constipation for adults are as follows:

Two or more of the following for at least 12 weeks (not necessarily consecutive) in the preceding 12 months: straining during >25% of bowel movements; lumpy or hard stools for >25% of bowel movements; sensation of

incomplete evacuation for >25% of bowel movements; sensation of anorectal blockage for >25% of bowel movements; manual maneuvers to facilitate >25% of bowel movements (eg, digital evacuation or support of the pelvic floor); <3 bowel movements per week; loose stools not present, and insufficient criteria for irritable bowel syndrome met.

In a study of Bion, et al. (2008), intestinal constipation was found to be one of the most common health problems among university students. It was concluded that the students needed to modify their food habits, acquire knowledge on the importance of a balanced diet, as well as the practice of physical activity systematically, to prevent illnesses and attain a better quality of life (4).

In the literature, most of the studies concerning the constipation problem in university students had investigated its relation with dietary intake (5-8). Physical activity is a rarely investigated issue in studies focusing on constipation problem in this population, and therefore, this study was planned in order to investigate the prevalence of this problem, its relation with physical activity level, and the coping methods that university students used.

MATERIAL AND METHODS

This research was performed as a graduation study for Nursing students, and was approved by the University Rectorate. It was conducted on 194 students of the same University (mean age=20.58±1.93 years), who approved the informed consent forms, in accordance with the Helsinki Declaration. Inclusion criteria for the study were: being voluntary to participate; not been diagnosed with irritable bowel syndrome or any gastrointestinal disease of organic cause with associated constipation (diverticulitis, Crohn's disease, etc); not being pregnant; not having any neurological disease or physical disability. Age (year), gender and faculty/school of subjects were recorded as socio-demographic variables.

Presence of constipation was determined by Rome II criteria for constipation, which were set forth by the Rome II Committee on Functional Gastrointestinal Disorders for the diagnosis of chronic constipation in 1999. Rome II criteria include a description of chronicity (12 weeks in the previous year, which do not need to be consecutive) and symptoms (2 of which must be present at least 25% of the time). These symptoms include: fewer than 3 bowel movements per week, hard or lumpy stools, straining with defecation, a sensation of incomplete evacuation, a sensation of anorectal obstruction, and the use of manual maneuvers to assist defecation (9).

Physical activity levels of the students were evaluated by the Turkish version of the International Physical Activity Questionnaire (IPAQ) short form, which is a

self-administered and feasible instrument for measuring physical activity in large groups or populations (10). The IPAQ assesses physical activity undertaken across a comprehensive set of domains including leisure time physical activity, domestic and gardening (yard) activities, work-related physical activity, transport-related physical activity. The IPAQ short form asks about three specific types of activity undertaken in these four domains. The items in the short IPAQ form are structured to provide separate scores on walking, moderate-intensity and vigorous-intensity activity. Computation of the total score for the short form requires summation of the duration (in minutes) and frequency (days) of walking, moderate-intensity and vigorous-intensity activities.

Coping methods with constipation was evaluated by a questionnaire, including the items: increasing liquid intake, increasing the intake of nutrients rich from fiber, performing physical activity or exercises, gaining the habit of regular defecation, massaging the abdomen during defecation, using medication prescribed by the doctors, using medication not prescribed by the doctors, rectal palpation and applications such as yoga and meditation. The subjects who had constipation were asked to mark their coping methods.

Statistical analysis

Statistical package for social sciences (SPSS) version 11.5 was used for the analysis. Quantitative data were presented by the mean and standard deviation values ($X \pm SD$), and independent samples t-test was used for inter-group comparisons. Number (n) and percentage (%) were used for the presentation of the qualitative data, and chi-square test was used for the comparisons. Statistical significance level was set at $p < 0.05$.

RESULTS

Mean age of the subjects was 20.58±1.93 (minimum=18, maximum=28 years). Eighty-four students were female (43.3%), and 110 (56.7%) were male. They were attending to Vocational School (61%), School of Health Sciences (8%), and Faculties of Education (21%), Aquaculture and Fisheries Biology (2%), and Technical Education (8%).

Among 194 students, 40 (20.6%) were determined as having constipation problem according to Rome II criteria. Twenty-three (57.5%) of them were female, and 17 (42.5%) were male.

Mean IPAQ total score of the students with constipation was lower than the ones who did not have this problem (1600.20±1386.65 and 2862.57±2874.69, respectively) ($t=2.693$, $p=0.008$). Also, physical activity levels (according to IPAQ classification) of the students with constipation problem was lower than the ones without constipation ($p < 0.05$) (Table 1).

Table 1. Distribution of the students with and without constipation problem, according to their physical activity levels (PAL)

	Students with constipation n (%)	Students without constipation n (%)	χ^2	p
Low PAL	20	40		
Moderate PAL	14	63	9.753	0.008
High PAL	6	51		

Increasing liquid intake (80%), massaging the abdomen during defecation (60%), increasing the intake of nutrients rich from fiber (50%), performing physical activity or exercises (48%), gaining the habit of regular defecation (45%), using medication prescribed by the doctors (33%), using medication not prescribed by the doctors (18%), rectal palpation (15%) and applications such as yoga and meditation (8%) were described by the students having constipation, as coping methods. Fifteen percent of the subjects indicated no coping methods.

DISCUSSION

The findings of this study pointed out a quite high prevalence of constipation (20.6%) among university students. Parallel to this finding, in a cross-sectional examination of the association between dietary pattern and functional constipation in 3,770 Japanese female dietetic course students aged 18-20 years, the prevalence of functional constipation was found 26.2% (5). Also, in a study by Khatri et al. (2011), frequency of functional constipation and its causative factors were assessed in three different populations (hospitalized patients, their attendants and medical students), and frequency of constipation was found to be 34% in medical students (11). In a study by Bion, et al. (2008), intestinal constipation was found to be one of the most common illnesses among Brazilian university students. They concluded that students needed to modify their food habits, acquiring knowledge on the importance of a balanced diet, as well as the practice of physical activity systematically, to prevent illnesses and attain a better quality of life (4).

Increasing liquid intake (80%), massaging the abdomen during defecation (60%), increasing the intake of nutrients rich from fiber (50%), performing physical activity or exercises (48%), gaining the habit of regular defecation (45%), using medication prescribed by the doctors (33%), using medication not prescribed by the doctors (18%), rectal palpation (15%) and applications such as yoga and meditation (8%) were the coping methods used by the students with constipation. Fifteen percent of the subjects indicated no coping methods.

Cheng et al. (2003), investigated coping strategies of subjects with functional constipation, and found out that most frequently deployed strategies included taking prescribed medicine, changing eating habits, taking alternative therapy like acupuncture, taking western medicine and doing nothing. Exercising was found to be a coping strategy with a relatively low percentage (15.5%) (12). These findings are not in parallel with the findings of our study, and the discrepancy of the most frequently used coping methods for constipation may be due to the difference of cultural characteristics, and age range of the subjects.

There are some studies in the literature, which reported that physical exercise has no major effect on bowel function (13-15). This finding seems to be conflicting with the results of this study, and is considered to be due to the population characteristics of these studies, which included only healthy subjects, without constipation problem. However, literature samples, which were conducted on subjects with constipation, have parallel findings to our study. Khatri et al (2011) stated that constipation was fairly common in medical students, and physical inactivity was a prominent risk factor for constipation (11). Also in a randomized controlled study, Baraloloum (2012) investigated the effectiveness of a regular walking program on chronic constipation in a sample of college students, and concluded that a daily one-hour walking program (at 60 percent of the maximum heart rate) can be used to treat chronic constipation in inactive individuals who have no history of other diseases (16).

The results of this study pointed out that, physical activity scores of the subjects with constipation were lower than the ones not having this problem, and this finding may indicate a relation between constipation and physical activity. It is considered that advising the subjects with constipation to broaden their coping repertoire through information and education about the possible causes and adequate coping strategies, and also encouraging them into physical activities/sports may be of benefit in preventing, relieving the symptoms of and managing constipation.

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CONFLICTS OF INTEREST

No conflicts of interest have been declared.

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ETHICAL APPROVAL

At the time of application, there was no Ethical Board for the Scientific Research at Muğla Sıtkı Koçman University, so the study was approved by the University Rectorate in October 2007.

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