

# Prevalence of irritable bowel syndrome, influence of lifestyle factors and bowel habits in Korean college students

You Joung Kim<sup>a</sup>, D.J. Ban<sup>b,\*</sup>

<sup>a</sup>Division of Biostatistics, School of Public Health, Seoul National University, Seoul, Republic of Korea

<sup>b</sup>Department of Public Health, Woosuk University, Hunjong-ri, Samrae-cup, Wanju-gun, Chonbuk 565-701, Republic of Korea

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## Abstract

**Background and aims:** Irritable bowel syndrome (IBS) is considered to be prevalent in the general population, but there are little data on bowel habits and IBS in Korea. Because nurses are frequently called on to help this patient population with IBS and help manage their symptoms, it is very necessary to get some practical information about patients' experiences and to outline a multifaceted approach to the practical management of patient with IBS. So this study aims to describe the bowel habits and the prevalence of IBS in young university students in Korea and to investigate the influence of lifestyle factors, including dietary habits, on IBS prevalence. Finally, we discuss the nursing needs for an holistic approach.

**Methods:** A cross-sectional study, using the self-reported questionnaire based on previous studies done abroad and the Rome  $\alpha$  criteria was applied with 1717 young university students.

**Results:** The answers of 747 men and 970 women were included in the study. The prevalence of IBS, as defined by the Rome  $\alpha$  criteria, was 5.7% of the subjects. The proportion of women (70.7%) was significantly higher than the proportion of men in the IBS group as compared to that in the non-IBS group (odds ratio 2.07, 95% CI 1.2–3.7). Residential type (odds ratio 1.27, 95% 1.06–1.5) and frequency of meals (odds ratio 1.69, 95% CI 1.2–2.5) significantly differed between the IBS group and non-IBS group. There was a trend towards the higher prevalence of IBS with fewer hours of exercise (odds ratio 0.99, 95% CI 0.95–1.04). 90.6% of respondents reported stool frequencies between three times per day and three times per week. Characteristics of defecation differed significantly between men and women ( $p < 0.05$ , to  $p < 0.0001$ ).

**Conclusion:** The prevalence of IBS in healthy young people of Korea was lower compared with those reported in the West. This study shows that proportionately more women suffered from IBS than men and dietary factors and lifestyle were significantly related to IBS. From our study results, we found that there are multifaceted nursing aspects required to reduce symptoms, such as dietary education and encouragement to change lifestyle aimed at controlling stress.

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**Keywords:** Irritable bowel syndrome; Stool frequency; Bowel habits; Dietary habits; Prevalence

\*Corresponding author. Tel.: +82-63-290-1310; fax: +82-63-291-9312.

E-mail address: [djban21@hanmail.net](mailto:djban21@hanmail.net) (D.J. Ban).

## 1. Introduction

Functional bowel disorders are believed to be common in the general population in the West. Depending on the criteria used, irritable bowel syndrome (IBS) has been reported in 17–22% of the surveyed population in the USA and the United Kingdom (Heaton et al., 1992a, b; Jones and Lydeard, 1992; Talley et al., 1991). Choo et al. (2000) conducted studies in Wonju and reported that the prevalence of IBS and constipation were 8.6% and 24.3%, similar to those of western countries (Choo et al., 2000). So IBS is considered to be prevalent in Korea, but there are little data on bowel habits and IBS from Korea. Consequently, there are few studies examining the association of lifestyle factors with IBS and defecation. Jeon et al. (1999) in a survey of routine check-up subjects in Korea, reported that 96.4% had a defecation frequency between three per week and three per day (Jeon et al., 1999). However, the former sample size was small and included the small population of a rural community and the latter did not investigate the correlation between bowel habits and lifestyle factors, including dietary habits. What is worse, many sufferers with IBS do not meet with much understanding from the medical profession, family, friends or work colleagues (Dancey and Backhouse, 1993). A better understanding of the range of bowel patterns in the general population is important to understand the disorder of bowel motility (Drossman et al., 1982). In terms of community nursing and public health, it is valuable to investigate bowel habits and the prevalence of IBS as a basic factor of one's well being. Nurses are involved directly in the planning and implementing of therapeutic interventions for this patient population (Heitkemper et al., 1995) and they could help patients with IBS by teaching them to help themselves (Anonymous, 1999). Thus as nurses are frequently called on to help this patient population with IBS manage their symptoms, it is necessary to get some practical information about patients' conditions and to outline a multifaceted approach to the practical management of patient with IBS. The aim of the present study is to describe bowel habits and the prevalence of IBS in healthy young university students in Korea and to outline the nursing areas required as a multifaceted approach. To clarify whether lifestyle factors, including dietary habits, have an influence on IBS and defecation, we also analyzed the association between lifestyle factors and IBS and defecation. We also investigated the distribution of subtypes of IBS, the differences of bowel habits by sex and consultation to physicians for bowel symptoms. Thus the data obtained would be helpful when comparing those of western countries and discussing the nursing areas required for an holistic approach.

## 2. Subjects and methods

### 2.1. Questionnaire

Based on previous studies done abroad and the Rome  $\alpha$  criteria, the self-reported questionnaire was constructed by ourselves and amended by a doctor in gastroenterology for this study. The questionnaire contained 45 response items and consisted of several areas regarding bowel symptoms, bowel habits, dietary habits based on recall for the past 12 months and demographic information of subjects. Other questions included consultation to physicians for bowel symptoms and lifestyle dealing with subjective stress level, hours per week for exercise, hours spent sitting on a chair and type of residence. Those questions asking about bowel and dietary habits were also exploring frequency. The Rome  $\alpha$  criteria specify that symptoms must be present for at least 3 months and there must be no evidence of structural disease that would explain the symptoms. So we excluded subjects if they had organic bowel disorders.

### 2.2. Pilot study

To test the questionnaire and to determine the reliability, a pilot study of 20 volunteers was conducted in one among the 7 universities, whose students were our study population, 6 months before the actual survey. From this pilot study, we analyzed test-retest reproducibility in the diagnosis of IBS and other response items of questions. Thus we could determine the reliable median of agreement coefficient (0.71; range 0.53–0.91).

### 2.3. Subjects

More than 1,842,000 Koreans (about 3.7% of the 47,639,618 Korean population based on 2002 census data) were attending 159 universities. A total of 1717 students from 7 universities that were located throughout the nation completed self-reported questionnaires during classes of cultural subjects for health. The response rate was 85.9%. seven universities were selected by modified stratified convenience sampling method. To recruit subjects, we used administrative districts and each one of the 7 universities was located in 7 different 7 districts. This was an observational study done during the months of September–November 2001.

### 2.4. Definitions

The diagnosis of IBS was based on the Rome  $\alpha$  criteria. IBS was defined as at least 12 weeks, which need not be consecutive, in the past 12 months, of abdominal pain or discomfort that had two out of the three features below; (a) relief with defecation; and/ or (b) onset of

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