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The effectiveness of an educational intervention on proper analgesic use for dysmenorrhea

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ABSTRACT

Objectives: Primary dysmenorrhea is a common gynecologic disorder, but is often inappropriately managed due to ignorance and misunderstanding of its pharmacotherapy in many young women. The aim of this study was to assess the effectiveness of an educational intervention on proper analgesic use for dysmenorrhea among Korean female university students.

Study design: In March 2008, an educational intervention, a 10-min lecture using supplementary educational printed materials, was given to the intervention group ($n = 98$). Two months later, changes and differences in knowledge, actual medication behavior, coping strategies, dysmenorrhea severity (VAS score), and Korean health-related quality of life (KQOLS) were assessed between the intervention and control ($n = 105$) groups.

Results: The prevalence of dysmenorrhea in the intervention and control groups was 75.1% and 77.1%, respectively. After the educational intervention, the medication rate of the intervention group was significantly increased (from 36.1% to 51.0%, $P = 0.007$), and the knowledge of and actual behavior relating to the proper analgesic use were also significantly improved in this group. The VAS scores were significantly decreased among participants with dysmenorrhea in the intervention group (from 48.6 ± 22.0 to 37.8 ± 22.5, $P < 0.001$). In addition, significant improvements in two domains of the KQOLS, physical function (from 89.3 ± 11.1 to 93.1 ± 8.8, $P = 0.007$) and pain (from 80.4 ± 19.9 to 87.4 ± 14.3, $P = 0.001$), were observed in the intervention group.

Conclusions: The findings of this prospective study suggest that a brief educational intervention can improve the severity of dysmenorrhea and the quality of life by enhancing medication knowledge and actual analgesic behavior in Korean female university students.

1. Introduction

Dysmenorrhea is the most common gynecologic disorder and the leading cause of school or work absenteeism among reproductive age women [1–4]. Primary dysmenorrhea refers to recurrent, cramping lower abdominal pain during menstruation without any underlying pelvic pathology. It is known that the prevalence of dysmenorrhea decreases gradually with age after the late adolescent period [3–6], but a considerable number of adult women still suffer from dysmenorrhea until early midlife [7–11].

Although non-steroidal anti-inflammatory drugs (NSAIDs) have become the established first-line treatment for effective relief of dysmenorrhea [6], many women still tend to regard dysmenorrhea as a natural phenomenon and do not seek medical assistance. In one Japanese study, none of the subjects visited a physician for dysmenorrhea, although about 16% Japanese women aged 18 and older had dysmenorrhea and 51.5% of them used self-medication during the study period [9]. Another previous study reported that 98% of female high school students used non-pharmacologic strategies including heat, rest, and massage for menstrual pain relief [5]. Several studies in adolescents reported not only a low rate of prescriptive medication use (although about half of them used self-medication), but also ignorance and misinformation regarding the proper medication for effective relief of dysmenorrhea [2,12–14]. Additionally, one Australian study showed that only 11% of female adolescents knew the prophylactic properties of NSAIDs for menstrual pain relief [13]. In this regard, there needs to be a preferential improvement on knowledge and behavior on appropriate analgesic use for dysmenorrhea in young women.

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In a previous study of Hispanic female high school students, most of them depended on their mothers for the source of analgesic information rather than consultations with a physician, and only 33% recognized that a physician could give them aid for relieving their dysmenorrhea [3]. In addition to this, high proportions of self-medication may lead to improper analgesic administration related to subtherapeutic dose and to wrong interval and timing of medication [3,15]. In this situation, providing educational opportunities can be a subtle compromise to improve the levels of knowledge on analgesic use for dysmenorrhea, but the role of education to enhance levels of knowledge on analgesic use for dysmenorrhea remains unsettled, to date.

Our hypothesis was that educational intervention detailing the proper analgesic use for dysmenorrhea among young adult women would affect their level of knowledge on that issue, and lead to substantial changes of their countermeasure behavior against dysmenorrhea. To verify the hypothesis, apparently healthy Korean female university students were invited to participate in the present study, because the prevalence of dysmenorrhea was expected to be high in this population, and also it was expected that they would have a rational health behavioral response to the educational intervention.

2. Materials and methods

2.1. Study design and participants

To evaluate the effectiveness of an educational intervention, we prospectively conducted a non-randomized controlled study (controlled before-and-after study). For a clear separation between intervention and control groups, we planned to respectively enroll participants in each of two separate provinces of Korea, Chungcheong Province and Gyeongsang Province (two universities per province). To recruit volunteers for this study, a notice detailing the contents of the survey and study eligibility was simultaneously advertised at a total of four different universities from early March 2008 (Fig. 1). To be eligible for this study, participants had to provide their informed consent and were required not to have any other gynecologic disorders, be pregnant, chronically abuse alcohol and/or drugs, or have any other medical illness such as a peptic ulcer or allergies to NSAIDs. To minimize selection bias, an educational intervention after the survey was not notified on the advertisement for recruitment. Considering the statistical assessment regarding appropriate sample size for this study, the goal of recruitment number per group was over 100 female students. The study was approved by the local institutional review board at Samsung Medical Center, Seoul.

After two weeks, numbers of eligible volunteers for this study were 116 for the Chungcheong Province group and 138 for the Gyeongsang Province group; therefore, the recruitment process was ended. The two groups by province were randomly assigned to an intervention or control group as follows: Chungcheong Province group to intervention group vs. Gyeongsang Province group to control group. In late March 2008, study participants completed a self-report questionnaire as part of a baseline survey. All participants were assured of anonymity and privacy protection. In addition, participants in the intervention group were given an educational intervention, a 10-min lecture on the proper analgesic medication for dysmenorrhea, immediately after completion of the baseline survey. Changes and differences between the intervention and control groups were assessed from baseline to a 2-month follow-up.

2.2. Measurement

The self-report questionnaire consisted of the following: basic demographic information on menstrual pattern (age at menarche, length of menstrual flow, presence of dysmenorrhea, length of menstruation cycle); current status of analgesic use for dysmenorrhea; previous education on analgesic use for the dysmenorrhea relief; strategies for coping with dysmenorrhea; knowledge of proper analgesic use for dysmenorrhea; perception of the necessity for education (timing and interval); actual pharmacologic behavior for relieving dysmenorrhea; severity of menstrual pain; and health-related quality of life. Presence of dysmenorrhea was ascertained by having lower abdominal cramping or pain during a menstrual period over the last 2 months.

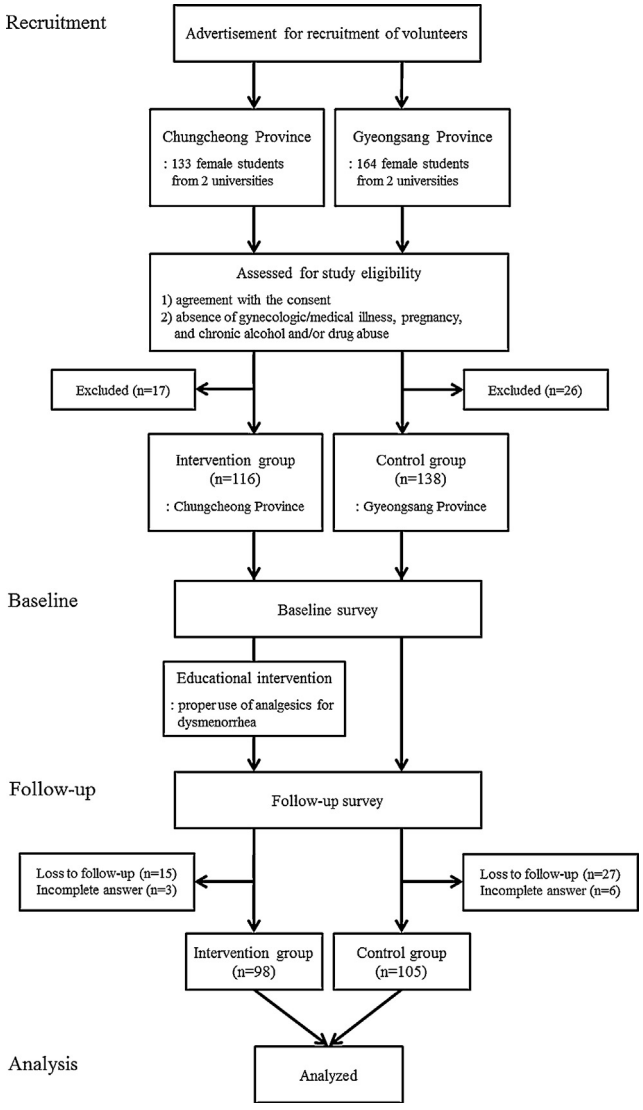

Fig. 1. Flow-chart of prospective educational intervention study regarding proper analgesic use for dysmenorrhea.

A visual analogue scale (VAS) was used to assess the severity of menstrual pain during the last 2 months. In accordance with widely accepted practice, a horizontal line, 100 mm in length, anchored by descriptors at each end ('no pain' in the left end and 'very severe pain' in the right end) was used; participants were asked to mark the point on the line that represented their severity of menstrual pain during the last 2 months. The VAS score was determined by measuring the distance in millimeters from the left end of the line to the point marked by the participants; therefore, the VAS score had a range from 0 to 100.

To assess the health-related quality of life of the participants, we used the Korean health related quality of life scale (KQOLS),