COMPARISON OF QUALITY OF LIFE SCORES IN ADOLESCENTS WITH PRIMARY DYSMENORRHEA

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ABSTRACT: Dysmenorrhea is characterized by a crampy pelvic pain beginning shortly before or upon the onset of menses, and lasting for one to three days. Most adolescents experience in the first few years after the menarche**.** Health-related quality of life (HRQOL) was assessed by the SF-36 health survey (SF-36) measurements have gained attention as important functional outcomes in dysmenorrhea. The objective of this study was to compare the quality of life scores in adolescents with primary dysmenorrhea between mefenamic acid and prasaplai extract treating group. Data were collected from female of 197 aged 18-25 who required analgesic drug for pain and primary dysmenorrhea diagnosis by gynaecologist at Thammasart University between March 2011 and March 2012 by means of face-to-face interviews. The short from SF-36 (Thai) is a questionair containing 36 items covering eight domains. Data were analyzed by descriptive statistics. An independent samples t-test was utilized to compare HRQOL between the control group (Mefenamic acid) and treatment group (Prasaplai extract). The severity of menstrual pain was determined by visual analogue scale. The quality of life scores were assessed using the Short Form – 36 (SF-36) surveying to identify particular modalities of primary dysmenorrhea which associated with significant adverse effects on quality of life. The level of significance was set at 0.001. The results indicated that, mean age and body mass index (BMI) of Mefenamic acid group were 19.73 years, BMI 20.16; while those of Prasaplai extract group were 19.78 years, BMI 19.94 respectively. There were no significant differences between both groups. In addition to linear subscale scores of the SF-36, the physical component summary score (PCS) and mental component summary score (MCS) were compared between before and after taking Mefenamic acid and Prasaplai extract. All domains showed significant improvement in PCS (p = < 0.001) and MCS (p = < 0.001). Both treatment groups had significantly QOL scores (p = < 0.001) in eight domains. Prasaplai extract group had particularly lower scores in domain of physical functioning (44.79, 26.97) vs (53.21, 30.00) and social functioning (46.31, 33.57) vs (51.54, 33.00) when compared to Mefenamic acid group. In conclusion**:** Prasaplai extract has a positive effect in the quality of life scores in adolescents with primary dysmenorrhea as well as Mefenamic acid.

Keywords: Primary dysmenorrhea, Health-related quality of life, Short Form-36 (Thai)

INTRODUCTION

Dysmenorrhea is one of the most common gynecologic disorders. It's characterized by a crampy pelvic pain beginning shortly before or upon the onset of menses, and lasting for one to three days [1]. The high prevalence of dysmenorrhea among Thai students was 84.2%, previously reported by Banikarim, et al. (85%) and Hillen, et al. (80%) in adolescent women [2-4]. Studies on the prevalence of menstrual pain have shown that many factors are related to this disorder. These factors include a younger age, low body mass index (BMI), early menarche, prolonged or aberrant menstrual flow, psychological disturbance and severity of dysmenorrhea [5, 6]. Especially when it is severe, dysmenorrhea is associated with restriction of activity and absence from school or work. Emotional and behavioral problems may exacerbate dysmenorrhea. For example, depression or anxiety symptoms are reported to have an impact on menstrual cycle function and dysmenorrhea. Thus, the negative effects of dysmenorrhea on an individual's psychological status, quality of life (QOL) may be disrupted among adolescent women [7]. The objective of this study was to compare the quality of life scores in adolescents with primary dysmenorrhea among Prasaplai extract group and Mefenamic acid group.

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MATERIALS AND METHODS

Ethical considerations

The protocol of this study was approved by the

Table 1 Medical outcomes survey in eight SF-36 domains

Health component scale	Item content
Physical functioning	Limitation degree of physical activity
Role: physical	Health-related problems with work or daily activity
Bodily pain	Intensity of pain / extent of pain interfering with normal work
General health	Evaluation of personal health
Vitality	Level of energy/ degree of fatigue
Social functioning	Extent/frequency of health problems interfering with social activities
Role: emotional	Mood assessment
Mental health	Rating of current health compared to 1 year ago

Ethical Committee of the Thai Traditional and alternative Medicine Department Ministry of Public Health.

Participants

A double - blind randomize controlled study allocated participants 197 into 2 groups. Subjects were female university students aged 18 to 25 years at Thammasart University with screening condition as follows: 1) who suffered from primary dysmenorrhea with previous diagnosis based on the medical history, physical and gynecological examinations by the gynaecologist, 2) who had a regular menstrual cycle, and 3) who required analgesic drug for relieving pain. Exclusion criteria was considered if they were pregnant or breast feeding, taking oral contraceptive medicine, having severe gastrointestinal, gynaecological or autoimmune disease, or received gynaecological surgery within one year prior to the examination, having medicinal or herbal sensitivities or using any other drugs apart from analgesic. Signed informed consent obtained from all participants. The subjects were randomized (1:1) to receive Mefenamic acid (n=100) or Prasaplai extract (n=97). The Prasaplai extract group received two capsules of 200 mg each, taking three times a day for first three days at the onset of menstruation for six periods, while the control group received Mefenamic acid 250 mg (similar feature in capsules) by taking two capsules, as same treatment as Prasaplai group. Participants were accessed their quality of life by the Short Form – 36 (SF-36) scale. Originally, questionnaire developed by Ware, et al. [8]. The most commonly used as health-related QOL measurement worldwide [9-11]. The SF-36 is a multi-purpose the questionnaire consists of 36 items cover 8 aspects of QOL including Physical Function (PF), Role-Physical (RP), Social Functioning (SF), Bodily Pain (BP), General Health (GH), Role Emotional (RE), Vitality (VT) and General Health (GH). The subjects gave appropriate answers for the questions in the SE-36 scale for their depression status during the last four weeks. Scores changed from 0 to 100 for each domain separately. The high scores obtained from the scale showed that the QOL increased in a good way [12].

The instrument and data collection

The data were by means of face-to-face interviews. The instrument were the Thai SF-36 Health Survey (SF-36 Thai) translated and successfully validated in Thai population [13]. The scores range was 0 to 100 with higher scores representing better health status or functioning. Physical and mental component summary score, PCS and MCS, were calculated by summation of the original population standardized domain scores, in which a value of 50 would indicate a score equivalent to the population mean [14].

Data analysis

Data were analyzed by descriptive statistics. An independent samples t-test was utilized to compare the difference of SF-36 score between Mefenamic acid groups and Prasaplai extract group.

RESULTS

A total of 197 subjects were no significant differences in the mean age and body mass index between Mefenamic acid group (19.73 years, BMI 20.16) and Prasaplai extract group (19.78 years, BMI 19.94) respectively. The linear subscale scores of each domain in the SF-36 were revealed in Table 1. The outcome no significant differences between two groups in severity of dysmenorrhea before and after treatment. Table 2 shows a comparison of visual analogue scale at baseline and treatment 4, 5, 6, 7, 8, 9 momths and last follow-up. Prasaplai extract revealed equal effectiveness in reducing pain when compared to Mefenamic acid.

The comparative before and after taking Mefenamic acid and Prasaplai extract, revealed significant improvement in physical component summary score ($p < 0.001$) and mental component summary score ($p < 0.001$) in all domains as shown in Table 3 and Figure 1.

Mefenamic acid and Prasaplai extract groups had significantly QOL scores ($p < 0.001$) in eight domains including general health (GH), physical

Table 2 Severity of dysmenorrhea before and after treatment

Visual analogue scale	mean±SEM	mean difference 95%CI
Mefenamic acid group		
Baseline 1 months	6.10±0.67	4.79, 7.41
Treatment 1 months	4.24±0.31	3.63, 4.85
Treatment 2 month	3.90±0.21	3.49, 4.13
Treatment 3 month	3.45±0.23	3.01, 3.90
Treatment 4 month	3.78±0.20	3.38, 4.18
Treatment 5 month	3.43±0.21	3.01, 3.84
Treatment 6 months	3.27±0.22	2.84, 3.60
Follow-up 1 month	3.07±0.20	2.66, 3.46
Prasaplai extract group		
Baseline 1 months	7.36±0.66	6.05, 8.66
Treatment 1 month	4.39±0.31	3.36, 4.06
Treatment 2 month	3.70±0.21	3.29, 4.10
Treatment 3 month	3.70±0.22	3.26, 4.14
Treatment 4 month	3.32±0.20	2.92, 3.72
Treatment 5 month	3.14±0.21	2.73, 3.56
Treatment 6 months	2.85±0.22	2.42, 3. 27
Follow-up 1 month	2.87±0.20	2.47, 3.27

SEM = Standard error of mean
CI = Confidence interval

Table 3 Comparison of SF-36 domains mean, physical component summary score (PCS) and mental component summary score (MCS), before – after treating between Mefenamic acid and Prasaplai extract group

SF-36 domains / group	Before		After		*p* value
	Mean±SE	95% CI	Mean±SE	95% CI	
PCS					
Mefenamic acid	44.77±1.04	42.71,46.83	51.98±1.01	49.97,53.98	<0.001
Prasaplai extract	44.67±1.10	42.49,46.86	51.69±1.07	49.56,53.82	<0.001
MCS					
Mefenamic acid	46.33±1.26	43.83,48.83	60.89±1.28	58.35,63.42	<0.001
Prasaplai extract	42.26±1.36	39.56,44.95	57.89±1.38	55.15,60.62	<0.001

CI = confidence interval, SE = Standard error of mean

functioning (PF), role: physical (RP), bodily pain (BP), mental health (MH), vitality (VT), social functioning (SF), role: emotional (RE). In table 4, Prasaplai extract group had particularly lower scores in domain of physical functioning (44.79, 26.97) vs (53.21, 30.00) and social functioning (46.31, 33.57) vs (51.54, 33.00) when compared to Mefenamic acid group. On the contrary, Mefenamic acid and Prasaplai extract groups was significantly QOL scores ($p < 0.001$) in SF-36 domains mean, before-after treating (Figure 2).

DISCUSSION

Major findings summarized that mean scores of physical component summary score (PCS) and component summary score (MCS) after taking Mefenamic acid and Prasaplai extract showed significant improvement: PCS, $p < 0.001$ and MCS, $p < 0.001$. Six domains consisting GH, RP, BP, MH, VT and RE within two groups had particularly higher scores indicating the decrease of dysmenorrhea severity. However, both group actually had higher scores, which might signify that these adolescents would accept their dysmenorrhoeic symptoms as a natural part of their menstrual dysfunction and their womanhood [15]. Otherwise, the domain of physical functioning (44.79, 26.97) vs (53.21, 30.00) and social functioning (46.31, 33.57) vs (51.54, 33.00) showed particularly lower scores; it is therefore possible that the relationship between environment such as a flood for a long time and primary dysmenorrhea. Because of, the limitation of daily life activities such as can not go to school, super-market or participate in social life or the domain of social functioning collaborate previous reports in the literature describing the QOL scores in adolescents with menstrual symptoms, with significantly lower scores in the domains of general health and social functioning. Thus, QOL scores are a reflection of the perceived problems and concerns of the subjects being assessed, it is logical to assume that the domains, which would be negatively affected; would depend on a large extent of the knowledge, attitudes and consequences of

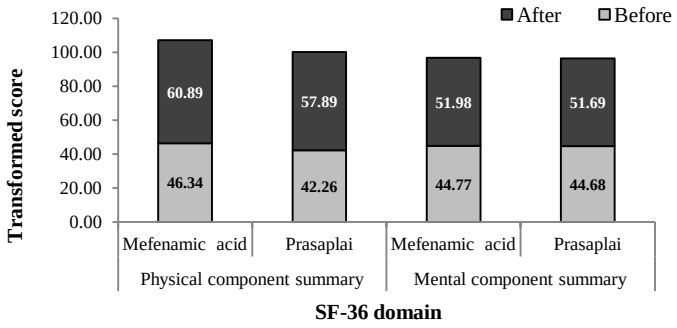


Figure 1 Comparison of physical component summary score and mental component summary score, before - after treating between Mefenamic acid and Prasaplai extract group

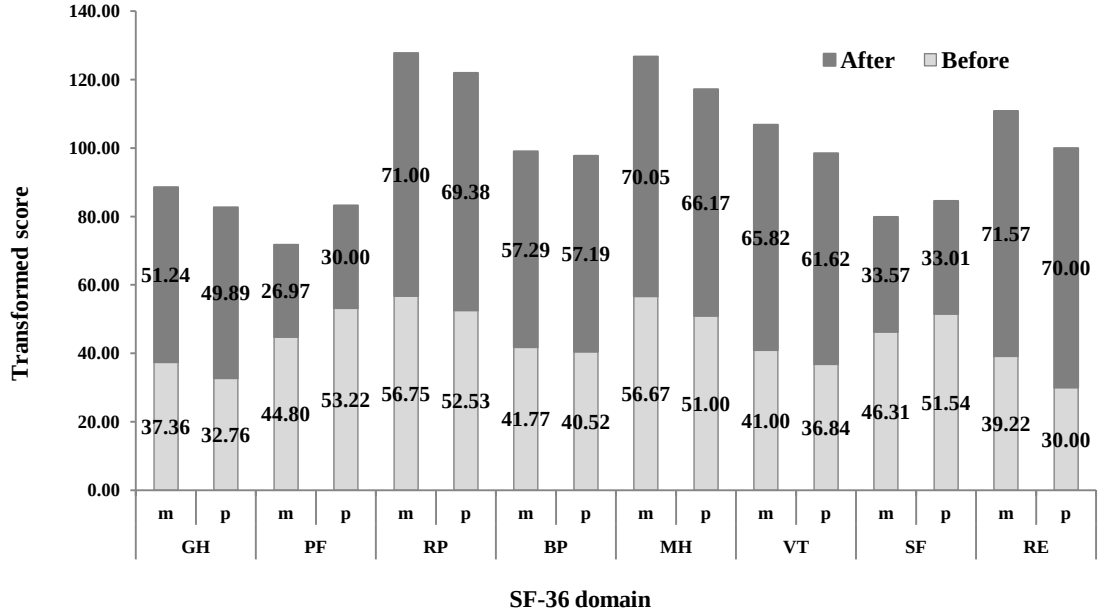


Figure 2 Comparison of SF-36 domains mean, before-after treating between Mefenamic acid and Prasaplai extract group

menstrual health among these adolescents [16] and long term health economic effect in a clinically relevant benefit and was cost effective with dysmenorrhea.

CONCLUSION

Prasaplai extract had a positive effect in the quality of life scores in adolescents with primary dysmenorrhea as well as Mefenamic acid.

ACKNOWLEDGEMENTS

The authors wish to thank The 90th Anniversary of Chulalongkorn University Fund (Ratchadaphiseksomphot Endowment Fund), Herbal Remedies and Alternative Task Force of STAR: Special Task Force for Actvating Research under 100 years Chulalongkorn University fund and Thai Traditional Medical Knowledge Fund for their research grants and supports for this study.

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