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Development and validation of a *Yoga* module for Primary dysmenorrhoea

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ABSTRACT

Menstrual pain without organic pathology is considered to be primary dysmenorrhoea. Dysmenorrhoea refers to the occurrence of painful menstrual cramps of uterine origin. It is a common gynaecological condition with considerable morbidity affecting majority of the adolescent girls, yet which is under diagnosed and under treated. *Yoga* can be considered as a simple and safe management tool for Primary Dysmenorrhoea. Studies have reported the beneficial role of *Yoga* in alleviating the symptoms of Primary dysmenorrhoea; however, a validated *Yoga* module for Primary dysmenorrhoea is unavailable. This study developed and validated an integrated *Yoga* module (IYM) for Primary dysmenorrhoea. **Methods:** The IYM was prepared after a thorough review of classical *Yoga* texts and previous findings. Twenty experienced *Yoga* experts, who fulfilled the inclusion criteria, were selected validating the content of the IYM. A total of 38 practices were included in the IYM, and each practice was discussed and rated as (i) not essential, (ii) useful but not essential, and (iii) essential; the content validity ratio (CVR) was calculated using Lawshe's formula. **Results:** Data analysis revealed that of the 38 IYM practices, 18 exhibited significant content validity (cut-off value: 0.42, as calculated by applying Lawshe's formula for the CVR). **Conclusion:** The IYM is valid for Primary dysmenorrhoea, with good content validity. However, future studies must determine the feasibility and efficacy of the developed module.

Key words: Primary dysmenorrhoea, IYM, Integrated Yoga module.

INTRODUCTION

Dysmenorrhoea is characterized by lower abdominal pain that may radiate to the back of the legs and upper thighs and is commonly associated with nausea, headache, fatigue, diarrhoea, lethargy, breast tenderness and mood swings.^[1] The prevalence of

primary dysmenorrhoea are not clearly established in India. A report says that incidence of dysmenorrhoea is 33.5% among adolescent girls in India.^[2] The pathogenesis of primary dysmenorrhoea can be defined as "myometrial hyperactivity, uterine tissue ischemia and pain which may be induced by an abnormal increase in vasoactive prostaglandins originating in the secretory endometrium and menstrual fluid".^[3] A composite interaction between hormones and mediators, basal body temperature, sleep patterns, central nervous system (CNS), psychological factors, stress and deprivation were found to be associated with Primary Dysmenorrhoea.^[4] Despite the wide range of pharmacological treatment options currently available for patients with primary dysmenorrhoea, a substantial proportion of patients fail to achieve adequate pain relief and continue to experience significant pain, pain related distress and disability. A growing body of evidence shows that *Yoga* benefits

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physical and mental health via down-regulation of the hypothalamo-pituitary-adrenal axis and the sympathetic nervous system.^[5] Numerous studies show that *Yoga* practice can reduce pain and disability while improving flexibility and functional mobility in people with a number of conditions causing chronic pain. Additionally, in some cases use of pain medication was reduced or eliminated completely.^[6] *Yoga* plays an important role in reducing stress and sympathetic activity, increasing parasympathetic activity, improving one's quality of life, and decreasing psychological symptoms like anxiety, depression etc.^[7] Evidence clearly suggests that *Yoga* may be a safe and cost-effective intervention for managing menstrual problems.^[8] The objective of the study is to develop a *Yoga* module specific to the needs and requirements of women with Primary Dysmenorrhoea.

MATERIALS AND METHODS

The IYM was developed as follows.

Step 1: Compilation of literature on Primary dysmenorrhoea

- a) In this phase, we reviewed traditional ^[9,10] and contemporary *Yoga* texts.^[11,12]
- b) Research papers on the use of *Yoga* in menstrual disorders, including modern scientific reviews of Primary dysmenorrhoea, were identified using different search engines such as PubMed and Google Scholar. Indexing terms such as "*Yoga*," "*Primary dysmenorrhoea*," "*Pranayama*," and "*Hathayoga*" were used in the search. All experimental studies that only used *Yoga* as the therapy for Primary dysmenorrhoea were included.

Step 2: Sorting the literature on Primary dysmenorrhoea

The compiled literature was searched to identify the common and unique features described in each study. Studies published in scientific journals were extracted, which provided scientific support to the literary search.

Step 3: Preparing a *Yoga* module based on previous literature on Primary dysmenorrhoea

A customized protocol was developed, which comprised practices supported by classical texts and research evidence. This preliminary module comprised 38 practices.

Step 4: Validation of the *Yoga* module by experts

For validation, the complete module was presented to *Yoga* experts with clinical experience [who had either a doctorate or Doctor of Medicine degree in *Yoga*, with a minimum of 5 years' experience or a Masters degree in *Yoga* (MSc *Yoga*)/*Yoga* therapist, with a minimum of 5 years' experience]. These experts were requested to validate the practices in the proposed module on a three-point scale as follows.

1. Not essential: has no role in improving any symptoms or the quality of life of patients with Primary dysmenorrhoea
2. Useful but not essential: useful in improving general wellbeing, but the benefits are not specific to Primary dysmenorrhoea symptoms
3. Essential: very important for improving Primary dysmenorrhoea symptoms

A panel comprising 20 experts with the aforementioned qualifications was assembled for determining the content validity. Experts in *Yoga* therapy with clinical experience (≥ 5 years) were also considered *Yoga* experts. Among the 20 experts, more than ten had previously applied *Yoga* therapy in patients with Primary dysmenorrhoea and were already using most of the practices included in this module. For calculating the content validity ratio (CVR), the expert panel was asked to comment on the necessity of the included items.

The CVR for the total scale was computed based on the experts validation. According to Lawshe's formula, if more than half of the panellists indicate that an item is essential, then that item has the minimum content validity. The CVR for our scale was ≥ 0.42 , which was considered satisfactory for a panel of 20 experts.

Statistical analysis

The cut-off value of 0.42 was calculated by applying Lawshe's formula for the CVR.^[13] The mean CVR across the items may be used as an indicator of the overall test content validity.

Lawshe's formula: $CVR = (N_e - N/2) / N/2$

where

N_e = total number of panellists indicating "essential" for each practice

N = total number of panellists

RESULTS

Of the 38 IYM practices selected for validation, 19 had a CVR score of ≥ 0.42 , indicating high content validity. These practices are listed in Table 1. Nineteen practices (Table 2) had a CVR score of < 0.42 , indicating low content validity.

Table 1: Practices with a CVR score of ≥ 0.42 .

| SN | Name of the Practice | CVR |
|-----|---|-----|
| 1. | Twisting | 0.5 |
| 2. | Butterfly | 0.9 |
| 3. | Cycling | 0.7 |
| 4. | Tiger breathing & stretch | 0.6 |
| 5. | Baddhakonasana breathing | 0.7 |
| 6. | Straight leg rising | 0.9 |
| 7. | Ardha Matsyendrasana | 0.5 |
| 8. | Matsyasana | 0.8 |
| 9. | Supta Baddha Konasana | 0.6 |
| 10. | Viparita Karini with 'A'kara chanting & Ashwini mudra | 1 |
| 11. | Baddhakonasana | 0.7 |
| 12. | Pavanamuktasana Kriya | 0.7 |
| 13. | Setu bandhasana | 0.6 |

| | | |
|-----|---------------------|-----|
| 14. | Bhujangasan | 0.7 |
| 15. | Surya Namaskar | 0.5 |
| 16. | Sectional breathing | 0.9 |
| 17. | Nadi Shuddhi | 1 |
| 18. | Brahmari | 1 |
| 19. | Om meditation | 0.6 |

Table 2: Practices with a CVR score of < 0.42 .

| SN | Name of the Practice | CVR |
|-----|--------------------------------|-----|
| 1. | Jogging | 0 |
| 2. | Forward & backward bending | 0 |
| 3. | Side bending | 0.2 |
| 4. | Alternate toe touching | 0.2 |
| 5. | Bhunamana | 0.4 |
| 6. | Shashankasana | 0.4 |
| 7. | Paschimottasana | 0.1 |
| 8. | Ustrasana | 0.2 |
| 9. | Vakrasana | 0.3 |
| 10. | Shalabasana | 0.3 |
| 11. | Dhanurasana | 0 |
| 12. | Sarvangasana | 0.2 |
| 13. | Navasana | 0 |
| 14. | Padahasthasana | 0 |
| 15. | Jaanushirsana | 0.2 |
| 16. | Ananthasana | 0 |
| 17. | Kapalbhati | 0.2 |
| 18. | Mind sound resonance technique | 0.2 |
| 19. | Laghu shanka prakshalana | 0.3 |

DISCUSSION

In the present study, we developed a valid *Yoga* module for Primary dysmenorrhoea. We selected different *Yoga* practices, including loosening practices, breathing practices, *Yoga* postures, and *Yoga*-based relaxation and meditation techniques, from classical *Yoga* texts and previous research findings. Twenty qualified experts, who fulfilled the study criteria, validated this module. Of the 38 practices subjected to validation, 19 had a CVR score of ≥ 0.42 and were included in the final validated *Yoga* module. To date, no previous studies have focused on the validation of a *Yoga* module for Primary dysmenorrhoea. This study was conducted in two phases: (a) designing the *Yoga* module for Primary dysmenorrhoea and (b) expert validation of the module for Primary dysmenorrhoea. In the first phase, the IYM was designed based on literature reviews of traditional textual references and recent research publications. We did not find any direct references for yogic practices capable of improving Primary dysmenorrhoea symptoms. However, recent commentaries on Hatha yogic texts^[14,15] have focus attention on improving health through different yogic practices. In addition, recent findings on Primary dysmenorrhoea reported by several schools of *Yoga* have helped in formulating a *Yoga* module for Primary dysmenorrhoea. The CVR was calculated for all 38 practices in our *Yoga* module. Of these, 19 practices (CVR ≥ 0.42) were included in the validated *Yoga* module (Table 1). The remaining 19 practices (CVR ≤ 0.42), namely Jogging, forward backward bending, Dhanurasana, Navasana, Padahasthasana, Ananthasana (0), Side bending, Alternate toe touching, Ustrasana, Sarvangasana, Jaanushirsana, Kapalbhati, Mind sound resonance technique (0.2), Vakrasana, Shalabasana, Laghu shanka prakshalana (0.3), and Bhunamana, Shashankasana (0.4), were used as complimentary poses for important postures to align the body and mind. These practices were slightly demanding for patients with Primary dysmenorrhoea at a beginner level. Therefore, most experts did not consider them as essential for Primary dysmenorrhoea therapy. Apart from these nineteen practices, the 19 practices

were considered essential for Primary dysmenorrhoea therapy; thus, the final CVR satisfied the minimum value, as per Lawshe's CVR. Similar to any other exercise protocol, an ideal *Yoga* module consists of modes (types), frequencies, intensities, durations and progression. Determining the appropriate mode depends upon patient preference and safety issues associated with the severity of the pain or other conditions. The frequency, intensity and duration are specific to the type of activity and should be customized according to the patient's ability to safely perform the activity. Evidence shows that abnormal increase of Prostaglandins in the endometrium induces myometrial hypersensitivity, reduced uterine blood flow and tissue ischemia.^[3] It is seen that *Yoga* helps in improving the blood flow to the pelvic region and stimulates the release of B endorphins which acts as non-specific analgesics.^[3] Further potential benefits of *Yoga* in altering the pain experience, decreases in sympathetic nervous system activity, reductions in inflammatory markers (e.g., tumor necrosis factor, interleukin-II, CRP) and stress markers (e.g., cortisol),^[16] and increases in flexibility, strength, circulation and cardio-respiratory capacity.^[17] These findings suggest that *Yoga* can be considered as simple and safe treatment for Primary Dysmenorrhoea.

CONCLUSION

The present IYM is a valid module for Primary Dysmenorrhoea. However, future studies must determine the feasibility and efficacy of the IYM.

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REFERENCES

1. Han SH, Hur MH, Buckle J, Choi JY, Lee MS. Effect of aromatherapy on symptoms of dysmenorrhea in college student: a randomized placebo-controlled clinical trial. *J Altern Complement Med.* 2006; 12: 535-541.

2. Nag RM. Adolescent in India. (page:18-26). Calcutta: Medical Allied Agency; 1982.
3. Ko H, Le SN, Kim S. Effects of *Yoga* on Dysmenorrhea: A Systematic Review of Randomized Controlled Trials. 2016. <https://pdfs.semanticscholar.org/4ad6/dc7e36919e55015880083743370a68ec0a16.pdf>
4. Allsworth JE, Clarke J, Peipert JF, Hebert MR, Cooper A, Boardman LA. The influence of stress on the menstrual cycle among newly incarcerated women. *Womens Health Issues* 2007;17:202-9.
5. Kanojia S, Sharma VK, Gandhi A, Kapoor R, Kukreja A, et al. Effect of *Yoga* on autonomic functions and psychological status during both phases of menstrual cycle in young healthy females. *J Clin Diagn Res.* 2013; 7: 2133-2139.
6. Gatantino ML, Bzdewka TM, Eissler-Rnsso JL, Holbrook ML, Mogck EP, Geigle P, et al. The impact of modified hatha *Yoga* on chronic low back pain: A pilot study. *Altern Ther Health Med.* 2004;10:56-9.
7. Beets MW, Mitchell E. Effects of *Yoga* on stress, depression, and health-related quality of life in a nonclinical, bi-ethnic sample of adolescents: a pilot study. *Hisp Health Care Int.* 2010; 8: 47-53.
8. Rani M, Singh U, Agrawal GG, Natu SM, Kala S, et al. Impact of *Yoga* nidra on menstrual abnormalities in females of reproductive age. *J Altern Complement Med.* 2013; 19: 925-929.
9. Digamberji S, Gharote ML. *Gheranda Samhita*. Lonavala, India: Kaivalyadhama S.M.Y.M Samiti, 1997.
10. Digambarji S, Kokaje RS. *Hathapradipika of Svatmarama*. Lonavala, India: Kaivalyadhama, S.M.Y.M. Samiti, 1998.
11. Gharote ML, Devnath P, Jha VK. *Hathatatvakaumudi: A treatise on HathaYoga by Sundaradeva*. Lonavla, India: The Lonavla *Yoga* Institute (India), 2007.
12. Gharote ML, Devnath P, Jha VK. *Hatharatnavali of Srinivasayogi*. Lonavla: The Lonavla *Yoga* Institute (India), 2002.
13. Lawshe CH. A quantitative approach to content validity. *Pers Psychol.* 1975;28:563-575.
14. Taimni IK. *The science of Yoga: A commentary on the Yoga sutras of patanjali in the light of modern thought*, 5th ed. Illinois: Theosophical Publishing House, 1992.
15. Svatmarama. *Hatha Yoga Pradipika of Svatmarama*, 4th ed. Madras: Adyar Library and Research Centre, 1994.
16. Woolery A, Myers H, Sternlieb B, Zeltzer L. A *Yoga* intervention for young adults with elevated symptoms of depression. *Altern Ther Health Med.* 2004;10:60-3.
17. Yurtkuran M, Alp A, Dilek K. A modified *Yoga*-based exercise program in hemodialysis patients: a randomized controlled study. *Complement Ther Med.* 2007;15:164-71.

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