Chapter 3

Method

The study aimed to enhance favourable menstrual attitude, psychological well-being and reduce perceived stress among adolescent school girls. Yoga and Psychoeducation aid in sustaining holistic menstrual health. It paves way for managing perceived stress using positive coping mechanisms and equipping oneself with strategies for enhancing psychological well-being. Hence, the current study compares Yoga (Simplified Physical Exercise, Psychoeducation and their combination in enhancing favourable menstrual attitude, psychological well-being and reduce perceived stress among adolescent school girls.

Operational Definitions

Menstrual Attitude

Menstrual Attitude is an opinion a woman frames towards menstruation based on personal life experience associated to the process.

The conceptualization of menstrual attitude as an opinion framed through personal life experiences aligns with research emphasizing the psychosocial and cultural influences on menstruation related beliefs (Chrisler et al., 2015).

Psychological Well-being

Psychological well-being is the core feature of mental health encompassing self acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, personal growth pertaining to functioning with the fullest potential in all walks of one’s life.

The operational definition of psychological well-being reflects Ryff's multidimensional model, encompassing aspects such as autonomy, self acceptance and positive relationships, which are essential for achieving one's full potential (Ryff, 1989).

Perceived Stress

Perceived stress indicates the subjective experience of an individual in coping with the biopsychosocial demands.

The described definition of perceived stress corresponds to the theoretical framework proposed by Cohen et al. (1983), which highlights the subjective nature of stress responses to biopsychosocial demands (Stress can be denoted as physical or psychological

strain experienced by an individual due to excessive demands. Stress is a biological and psychological response to situational demands and it is an inevitable experience in everyday life).

Objectives

Primary Objectives

To identify and compare the effectiveness of Yoga, Psychoeducation and combined intervention (Yoga and Psychoeducation) in enhancing favourable Menstrual Attitude among Adolescent School Girls

Secondary Objectives

To assess and compare the effectiveness of Yoga, Psychoeducation and combined intervention (Yoga and Psychoeducation) in enhancing Psychological Well-being and reducing Perceived Stress among Adolescent School Girls

Menstrual attitude was defined as the primary outcome because it represents the direct target of both yoga and psychoeducation and reflects the most proximal change the interventions aim to produce. Attitudes toward menstruation are shaped by cultural messages, knowledge gaps and embodied experiences, making them highly responsive to structured educational and behavioural interventions (Chrisler, 2011; Rüßling et al., 2022). In contrast, psychological well-being and perceived stress were designated as secondary outcomes because they are broader, more distal indicators, influenced by multiple life domains beyond menstruation. Although improvements in Psychological Well-being and Perceived Stress are expected, these changes are theoretically viewed as consequences of shifts in menstrual attitudes and coping, rather than primary targets of the interventions (Marván & Vacio, 2018; Chang et al., 2020). Therefore, the outcome hierarchy reflects a conceptual and methodological distinction with menstrual attitude as the core variable of interest.

Hypotheses

H1 There is significant difference during before, after and follow-up phases in the dimensions of Menstrual Attitude among Adolescent School Girls in the Yoga Group

H2 There is significant difference during before, after and follow-up phases in the dimensions of Menstrual Attitude among Adolescent School Girls in the Psychoeducation Group

H3 There is significant difference during before, after and follow-up phases in the dimensions of Menstrual Attitude among Adolescent School Girls in the combined intervention (Yoga and Psychoeducation) Group

H4 There is significant difference during before, after and follow-up phases in the level of Perceived Stress among Adolescent School Girls in the Yoga Group

H5 There is significant difference during before, after and follow-up phases in the level of Perceived Stress among Adolescent School Girls in the Psychoeducation Group

H6 There is significant difference during before, after and follow-up phases in the level of Perceived Stress among Adolescent School Girls in the combined intervention (Yoga and Psychoeducation) Group

H7 There is significant difference during before, after and follow-up phases in the dimensions of Psychological Well-being among Adolescent School Girls in the Yoga Group

H8 There is significant difference during before, after and follow-up phases in the dimensions of Psychological Well-being among Adolescent School Girls in the Psychoeducation Group

H9 There is significant difference during before, after and follow-up phases in the dimensions of Psychological Well-being among Adolescent School Girls in the combined intervention (Yoga and Psychoeducation) Group

H10 Yoga and Psychoeducation (combined intervention) is significantly more effective in enhancing favourable Menstrual Attitude, Psychological Well-being and reducing Perceived Stress among Adolescent School Girls

Research Design

The research adopted before, after and follow-up without control group research design. It is an experimental design used to assess the effect of an intervention by comparing participants' outcomes before and after the treatment, without using a separate control group. Data is collected from participants on menstrual attitude, perceived stress and psychological well-being before they receive the intervention or treatment. Before intervention data serves as a baseline for comparison, representing participants' initial status. After the intervention is completed, data was collected again on the same variables. After one month, a follow-up test was conducted to evaluate the sustainability of the

intervention's effects. The before, after and follow-up intervention test scores were compared to determine if there has been any significant change after the intervention.

A before–after–follow-up design without a no waitlist control group was adopted due to both methodological suitability and ethical appropriateness in school-based intervention research. In educational and adolescent health settings, withholding potentially beneficial interventions such as yoga or psychoeducation from a subset of students raises ethical concerns, as schools are mandated to promote student well-being and equitable access to health-promoting programmes (Flay et al., 2005). The use of a waitlist or inactive control group was discouraged in the school environment, where institutional policies prioritise fairness, safety and psychological benefit for all students (Durlak & DuPre, 2008).

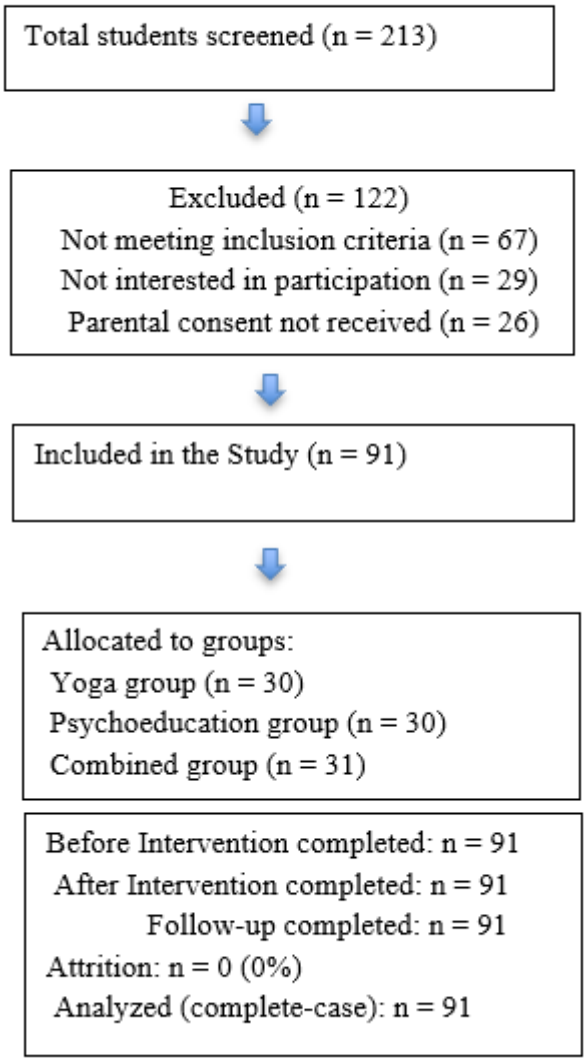
Additionally, contemporary school-based intervention research recommends active comparator designs, where all groups receive some form of developmentally relevant intervention, as these designs increase acceptability, reduce resistance from parents and school authorities, and improve ecological validity (Domitrovich et al., 2010). Comparing yoga, psychoeducation, and their combination allowed the study to evaluate relative effectiveness, which is more informative in real-world school settings than comparing an intervention against a no-activity control that has limited practical relevance.

The before–after–follow-up framework further strengthens internal validity by enabling the assessment of within-subject change over time, capturing both short-term and sustained effects (Kazdin, 2017).

Sample

The study involved 213 adolescent school girls chosen through purposive sampling from Avinashi, Tiruppur District, Tamil Nadu. Out of these, 91 participants were selected for the intervention groups using the inclusion and exclusion criteria. The participants were divided into three interventional groups, Group 1 (30 participants), Group 2 (30 participants), and Group 3 (31 participants). This ensured an equitable distribution across the groups, facilitating effective analysis of interventions on the target demographic within the designated study area**.**

Participant Flow Diagram



A total of 213 students were initially screened for eligibility. Of these, 122 students were excluded, including those who did not meet the inclusion criteria (n = 67), those who declined to participate (n = 29), and those for whom parental consent was not obtained (n = 26). The remaining 91 eligible students were enrolled in the study and allocated to the intervention groups: Yoga (n = 30), Psychoeducation (n = 30), and Combined Intervention (n = 31).

All 91 participants completed the before, after and follow-up assessments, resulting in no attrition (0%) across the study duration. Accordingly, a complete-case analysis was carried out, with all 91 participants included in the final statistical analyses.

Table 1 ***Group and Intervention***

Groups	**Intervention**
Group I	Yoga - Simplified Physical Exercises
Group II	Psychoeducation
Group III	Yoga and Psychoeducation

Inclusion criteria

- Adolescent School Girls who attained Puberty
- Adolescent School Girls who scored high/moderate in debilitating, bothersome, anticipation and denial of effects of menstruation and low in considering menstruation as a natural event were included in the experimental group
- Adolescent School Girls who scored high in perceived stress scale were included in the experimental group
- Adolescent School Girls who scored low/moderate levels in dimensions of Psychological Well-being were included in the experimental group

Exclusion criteria

- Adolescent School Girls with physical challenges
- Adolescent School Girls with poor health conditions
- Adolescent School Girls not willing to participate in the study

Tools

Menstrual Attitude Questionnaire

It was developed by Brooks, Gunn and Ruble was developed in the year 1980, The Indian adaptation was completed by Bhogle in 1991. The reliability score is 0.80 indicating good internal consistency. There are five dimensions such as considering menstruation as debilitating event, bothersome event, natural event, anticipation of onset and denial of effects. It enables the understanding of attitude towards menstruation. The high score indicates high debilitating attitude, bothersome attitude, anticipation attitude, denial of onset attitude and considering menstruation as a normal event with respect to scores of individuals in each dimension.

The Perceived Stress Scale

It is a psychological instrument developed by Sheldon Cohen, Tom Kamarck and Robin Mermelstein in 1983 to measure the perception of stress. It is widely used to assess how different situations in a person's life are perceived as stressful. The scale focuses on the degree to which individuals feel they can handle or control life's stressors. It contains 14 statements and the response format is a 5 point Likert scale ranging from (0 = Never, 1 = Almost never, 2 = Sometimes, 3 = Fairly often and 4 = Very often). The Cronbach's alpha score is 0.78 to 0.91, indicating good internal reliability.

The Psychological Well-being Scale

The scale was developed by Carol Ryff (2013). It is a widely used tool that measures an individual's psychological well-being across six dimensions.

- Autonomy - The ability to make independent decisions and resist social pressures.
- Environmental Mastery - The capacity to manage one's life and the surrounding world effectively.
- Personal Growth - The feeling of continued development and realizing one's potential.
- Positive Relations with Others - Having fulfilling, meaningful and trusting relationships.
- Purpose in Life - Having goals and a sense of direction in life.
- Self Acceptance - A positive attitude towards oneself, accepting strengths and weaknesses.

The shortened version of the scale contains 18 items and each item is scored on a Likert scale ranging from 1 to 6 or 1 to 7. The higher scores indicate greater sense of well-being in each dimension. This scale has shown high reliability across studies. Internal consistency (Cronbach's alpha) for the dimension's ranges from 0.70 to 0.90.

- Autonomy - 0.70 – 0.85
- Environmental Mastery - 0.77 – 0.90
- Personal Growth - 0.78 – 0.90
- Positive Relations with Others - 0.83 – 0.88
- Purpose in Life - 0.73 – 0.88
- Self Acceptance - 0.80 – 0.93

The psychological well-being scale aids in measuring mental health, life satisfaction and the effect of various interventions designed to enhance well-being and day to day functioning. Hence the scale is found to be reliable and consistent which makes it a widely used tool in psychological, clinical and social science research.

The reliability coefficients reported for the Menstrual Attitude Questionnaire, the Perceived Stress Scale and the Psychological Well-being Scale, were sourced from established validation studies and were not calculated using the present study sample. The Menstrual Attitude Questionnaire developed by Brooks-Gunn and Ruble also shows acceptable reliability, with subscale alphas generally reported between 0.70 and 0.85 across adolescent and adult samples (Brooks-Gunn & Ruble, 1980). Similarly, the Perceived Stress Scale demonstrates strong internal consistency in earlier research, with alpha values typically ranging from 0.78 to 0.91 depending on population and version used (Cohen et al., 1983; Cohen & Williamson, 1988). For the Psychological Well-being dimensions, Cronbach's alpha values ranging from 0.70 to 0.90 reflect reliability estimates reported in prior psychometric evaluations (Ryff, 1989; Ryff & Keyes, 1995). These literature-based indices are included to establish the psychometric soundness of the instruments used and the current study adopted the scales based on their documented reliability and validity rather than recalculating internal consistency from the study participants.

Description of the Intervention

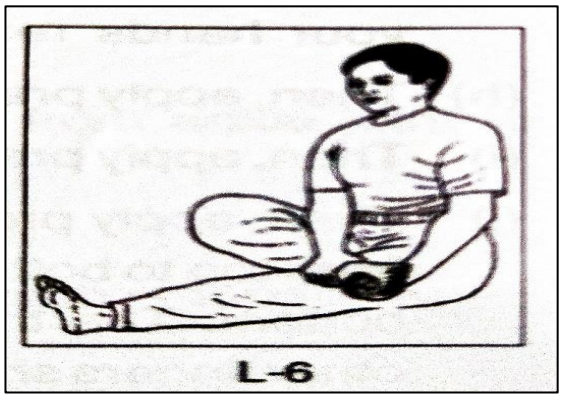
Simplified Physical Exercises

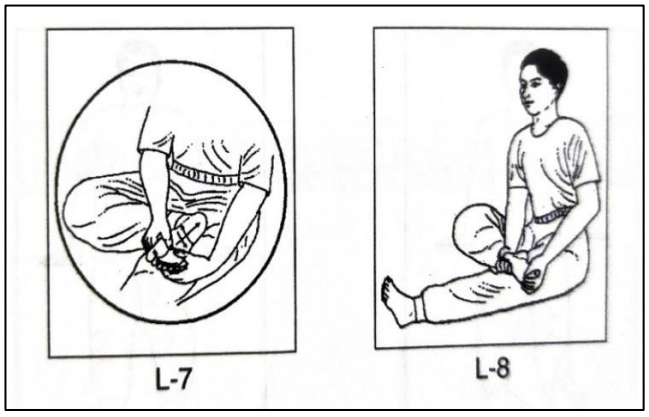
World Community Service Centre, a non profit organization founded by Vethathri Maharsishi provides simple and systematic procedures to promote holistic health and well-being. The simplified physical exercises by Vethathri Maharsishi are dedicated in promoting holistic health, spiritual enlightenment and global peace through simplified practices and teachings. The art of balancing the body, mind and spirit through techniques like meditation, yoga, simplified physical exercises and introspection is imparted. World Community Service Centre's teachings align with universal values and foster community well-being (Vethathiri, 1997).

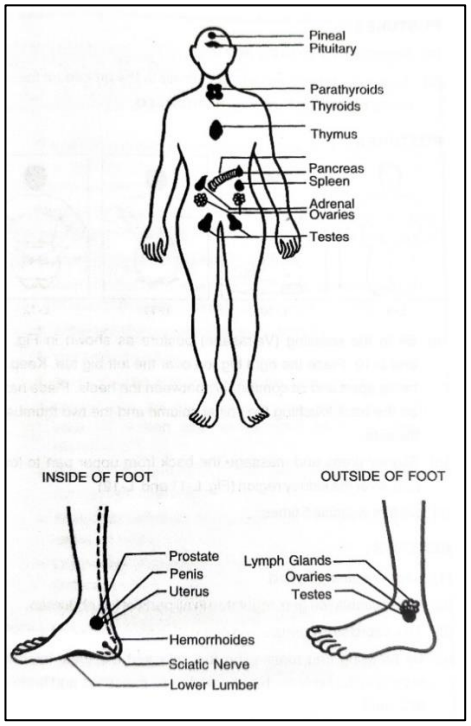
The simplified physical exercises are easy to perform and suitable for people of all ages, focusing on improving the overall functioning of the body while reducing stress. Among these, foot reflexology, neuromuscular breathing and Makarsana exercises are particularly used for the intervention.

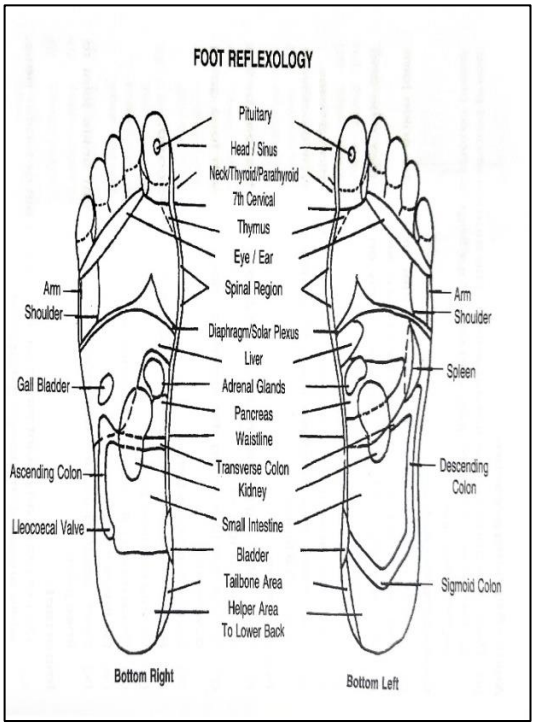
Foot Reflexology

The following pictures depict the steps involved in the foot reflexology





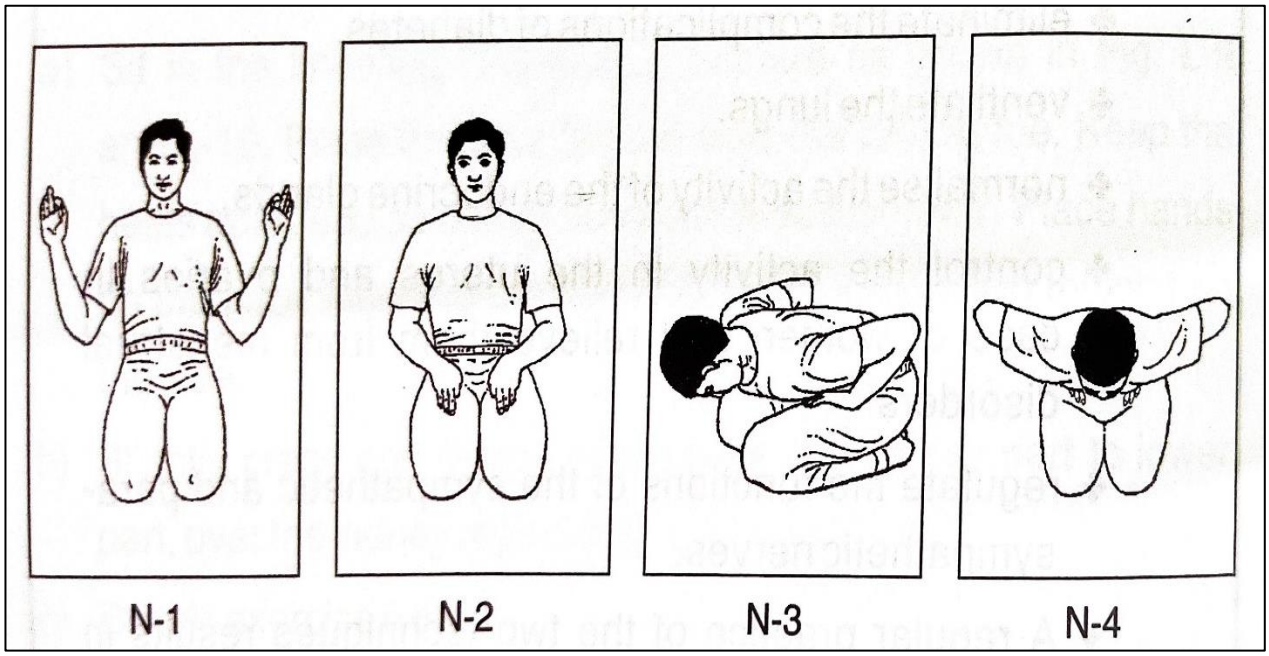


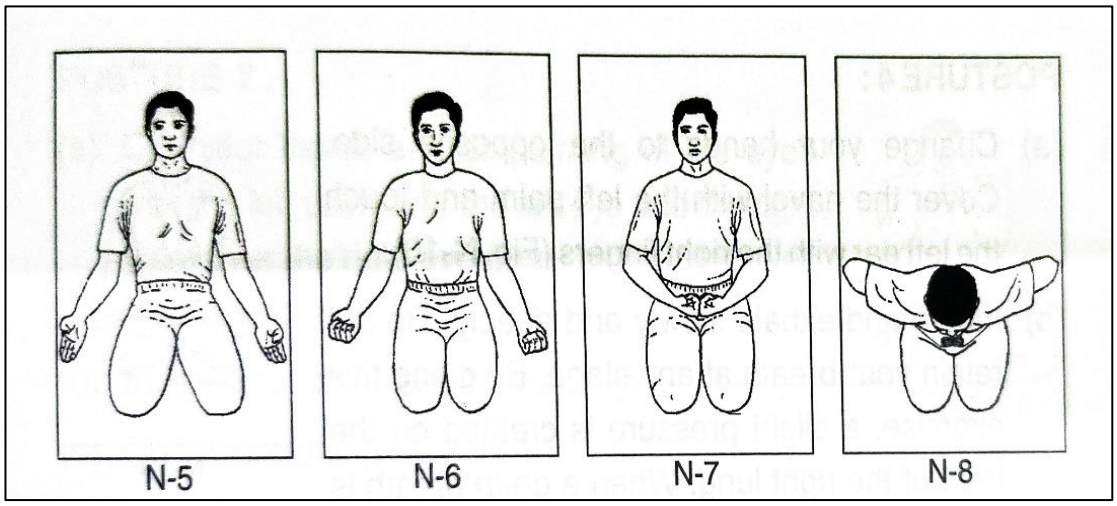


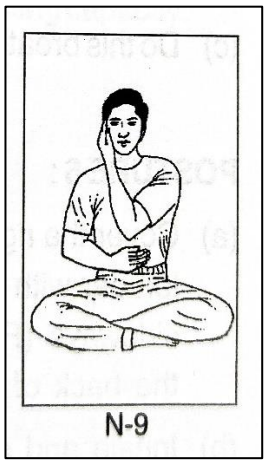
The exercise involves massaging one's foot from toes to ankle with suitable pressure to stimulate the nerve endings of different parts of the body. The massaging and rotation of ankle in each leg provides a relief to the heaviness experienced in one's leg as an immediate effect and with regular practice all the important organs of the human body such as heart, lungs, intestines, brain are activated. Foot reflexology involves applying pressure to specific points on the feet that correspond to different organs and systems in the body. It is believed to stimulate nerve endings, improve blood circulation, and balance energy flow, enhancing overall well-being (Vethathiri, 1997).

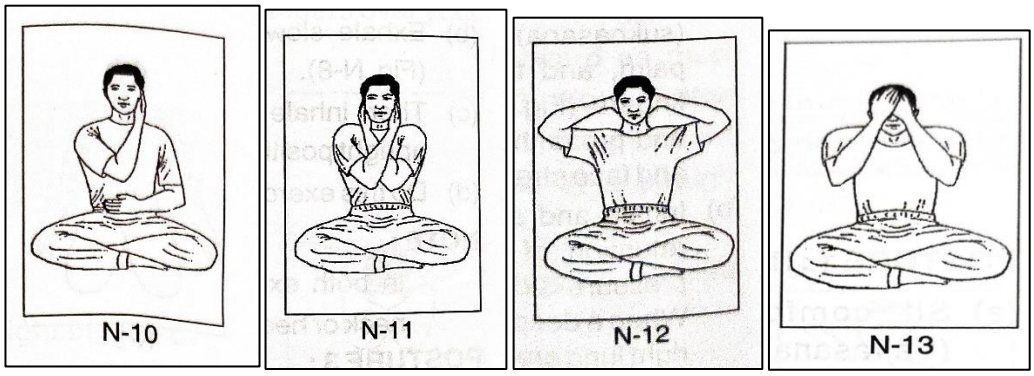
Neuromuscular Breathing

The following pictures depict the steps involved in the Neuromuscular Breathing





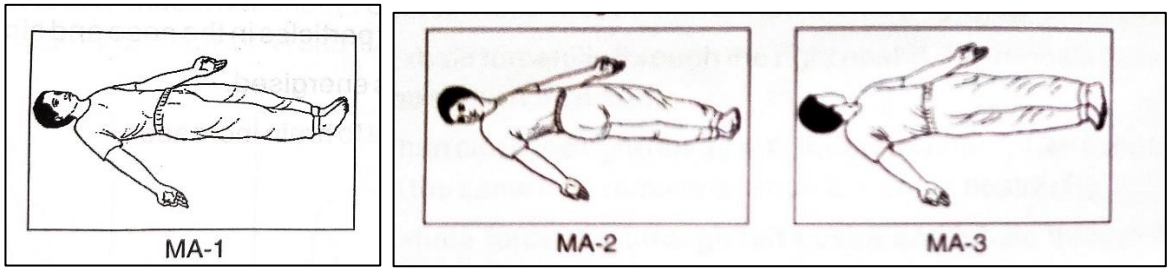


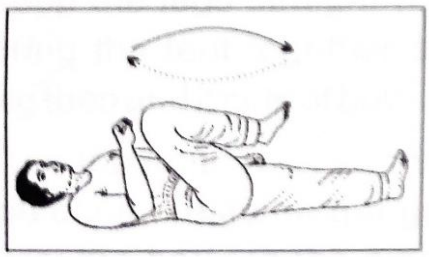


Neuro Muscular breathing exercises put forth by Vethathri Maharishi involves seven postures with five inhalation and exhalation in each position. The first and second is practiced in kneeling position with the right big toe over left big toe (Vajrasana). The postures 3-7 are practiced in cross-legged position (Sukhasana). In each posture deep inhalation and exhalation is performed without retention of breath after each position is completed. Neuromuscular breathing exercises are aimed at synchronizing breath with physical movements to improve lung capacity, oxygenate the blood, and relax the nervous system. These exercises help to alleviate stress and enhance the efficiency of neuromuscular coordination.

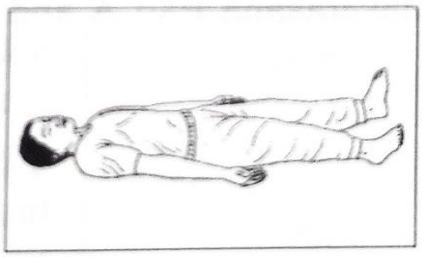
Makarsana Part A and B

The following pictures depict the steps involved in Makarasana-Part A





M-13



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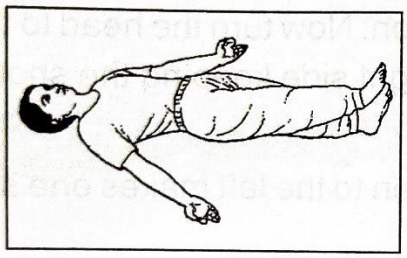

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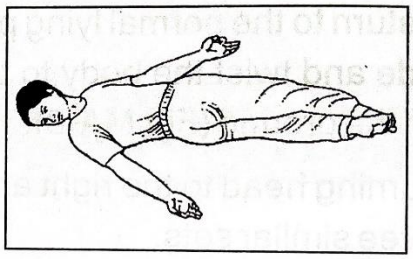

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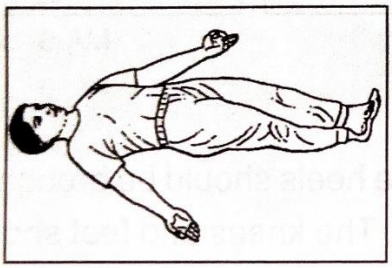

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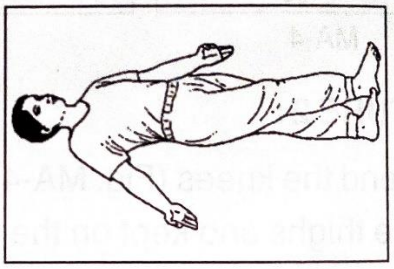

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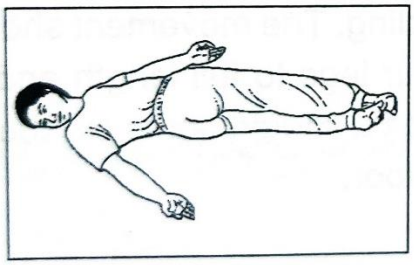

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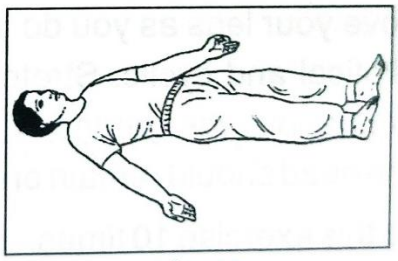

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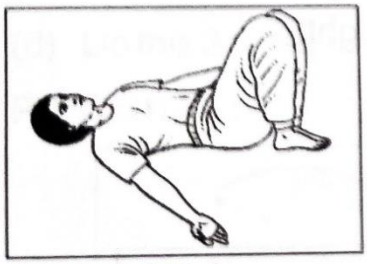

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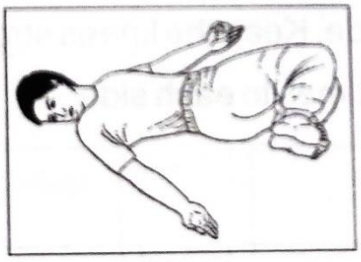

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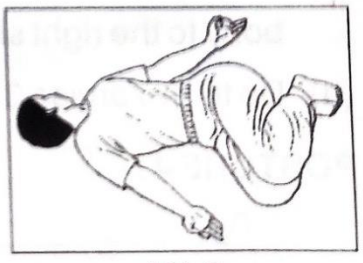
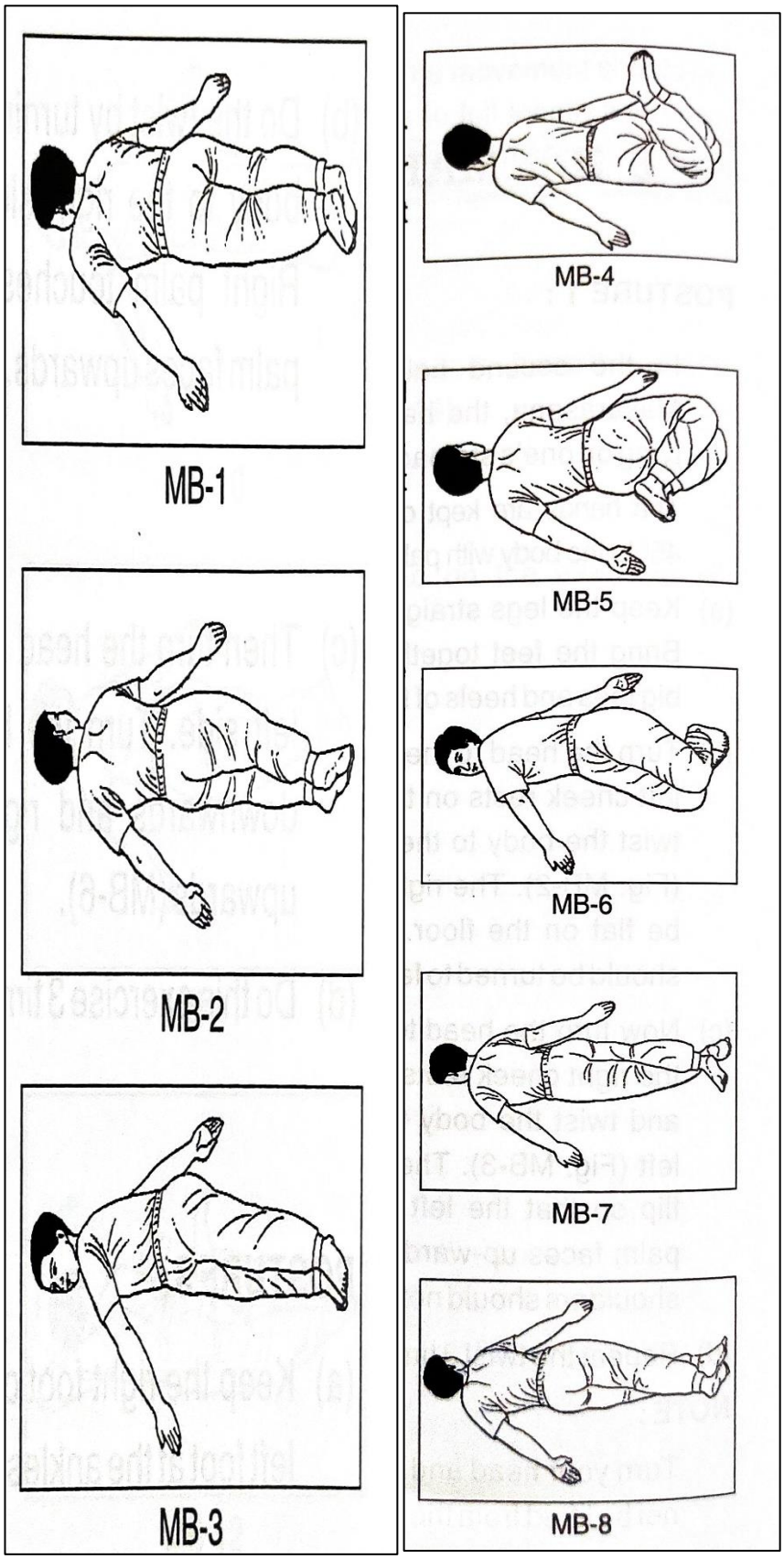
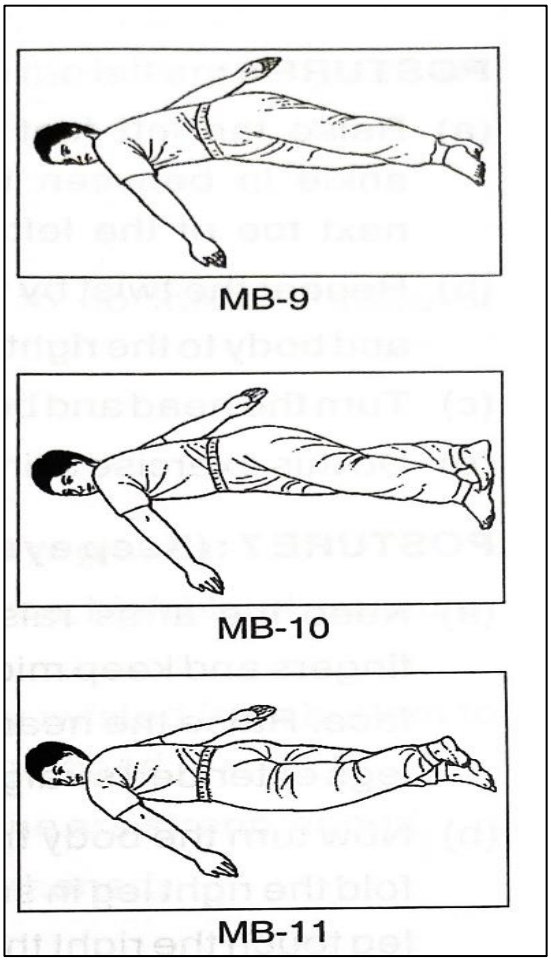
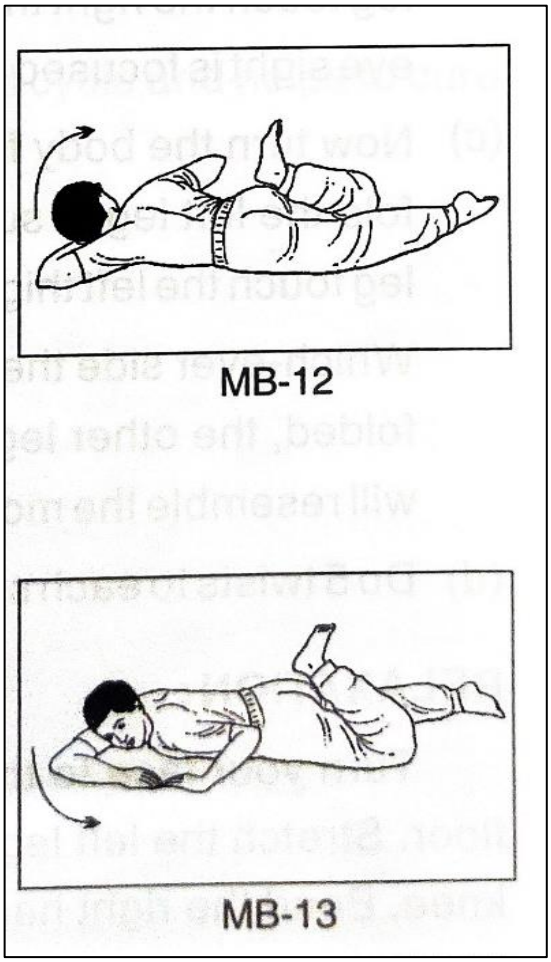


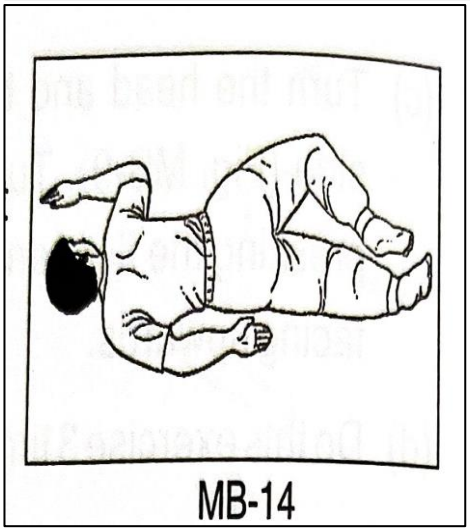
MA-6

The following pictures depict the steps involved in Makarasana-Part B









Makarasana is divided into two parts and each part possess seven postures. In part A, the hands are kept at 45 degrees to the body with palms facing up. The tips of the thumb and first finger of both hands are joined together like a ring. The other three fingers should be stretched (referred as chin mudra). This hand posture is maintained throughout Makarasana Part-A. The body turns towards left simultaneously turning the head towards

right for three trials in each posture with different leg positions. In the Part B, the basic position is lying on one's stomach and placing the hands at 45 degrees with palms facing down, the leg positions change in each posture and the head goes left so as the right cheek rests on the ground and twisting the body to extreme left, the palms are flipped with each movement. The Maharsana exercises, divided into Part A and Part B, involve systematic physical movements designed to strengthen muscles, improve flexibility, and regulate energy flow. Part A typically focuses on basic movements that warm up and prepare the body, while Part B includes more advanced exercises targeting deep muscle groups and energy channels. Together, they contribute to a harmonious balance between body and mind (Vethathiri, 1997).

Psychoeducation

The psychoeducation focused on the following facets:

Menstrual Process

A Biopsychosocial View

The menstrual process is a complex interplay of biological, psychological and social factors. Biologically, it involves the cyclical hormonal regulation of the hypothalamus, pituitary gland and ovaries, leading to ovulation and the shedding of the uterine lining if fertilization does not occur (Hillard, 2018). Psychologically, menstruation can influence mood and behaviour, with many individuals reporting emotional fluctuations due to hormonal changes. Socially, attitudes toward menstruation vary widely across cultures, shaping individual experiences and societal norms around menstruation (Chrisler & Johnston-Robledo, 2016).

Premenstrual Syndrome

Premenstrual Syndrome refers to a set of physical, emotional, and behavioral symptoms occurring during the luteal phase of the menstrual cycle, typically resolving with the onset of menstruation. Common symptoms include mood swings, irritability, fatigue, bloating, and breast tenderness. Approximately 20–40% of menstruating individuals experience Premenstrual Syndrome, with about 5% having severe symptoms classified as Premenstrual Dysphoric Disorder (Yonkers et al., 2008). The etiology of Premenstrual Syndrome is multifactorial, involving hormonal fluctuations, neurotransmitter sensitivity, and lifestyle factors, making comprehensive management strategies essential.

Menstrual Hygiene

Menstrual hygiene encompasses practices to manage menstruation safely and effectively. Proper hygiene, such as the use of clean sanitary products, regular changing of menstrual materials, and maintaining genital cleanliness, is crucial for preventing infections and promoting reproductive health. Despite progress, access to menstrual hygiene products remains a challenge in many regions, leading to stigma and absenteeism from school or work (Hennegan et al., 2019). Educating individuals about menstrual hygiene is essential to fostering physical health and breaking down taboos.

Promoting Healthy Menstruation

Promoting healthy menstruation involves addressing physical health, psychological well-being and societal attitudes. Balanced nutrition, regular physical activity and stress management can help regulate cycles and alleviate symptoms. Psychoeducation to normalize menstruation, reduce stigma and empower individuals through knowledge and resources can create supportive environments. Furthermore, policies ensuring access to menstrual hygiene products and health care play a critical role in promoting menstrual health (Sommer et al., 2021).

Stress

Stress is the body's natural response to a perceived threat or challenge. It is orchestrated by the brain and involves complex interactions between the nervous, endocrine and immune systems. The biological response to stress is designed to enhance survival, preparing the body to react to danger through the "fight or flight" response. The stress response involves the hypothalamic pituitary adrenal axis and the autonomic nervous system. When faced with a stressor, the body releases stress hormones like cortisol and adrenaline, triggering the "fight or flight" response. Chronic activation of this system can lead to adverse health outcomes, including cardiovascular diseases, weakened immunity and mental health disorders such as anxiety and depression (McEwen, 2007).

The Role of the Brain

The stress response begins in the brain when a stressor is perceived. The key regions involved includes Amygdala processing emotional reactions and signals the presence of a threat. Hypothalamus activates the stress response by communicating with the pituitary gland and the autonomic nervous system. Prefrontal Cortex modulates the stress response by assessing whether the threat is real or significant.

Activation of the Hypothalamic Pituitary Adrenal Axis

The hypothalamic pituitary adrenal axis is central to the stress response. When a stressor is detected, the hypothalamus releases corticotropin releasing hormone. It stimulates the pituitary gland to release adrenocorticotropic hormone. The Adrenocorticotropic hormone prompts the adrenal glands (located above the kidneys) to release cortisol, the primary stress hormone. Cortisol helps the body respond to stress by increasing glucose availability for energy, enhancing cardiovascular function, and suppressing non essential functions like digestion and reproduction.

Sympathetic Nervous System Activation

The autonomic nervous system, particularly the sympathetic nervous system, is activated simultaneously. This system releases adrenaline and norepinephrine, which trigger immediate physiological changes such as

- Increased heart rate and blood pressure
- Rapid breathing to enhance oxygen supply
- Pupil dilation to improve vision
- Diversion of blood flow to muscles and away from less critical systems
- Return to Baseline (Allostasis)

Once the stressor is resolved, the parasympathetic nervous system helps the body return to baseline. This involves reducing cortisol levels and calming physiological functions, restoring balance (homeostasis).

Effects of Chronic Stress

Prolonged activation of the stress response (chronic stress) can disrupt normal biological functions, leading to cardiovascular issues, high blood pressure and increased risk of heart disease, immune dysfunction, suppressed immune responses, making the body more susceptible to infections. Neurological effects are changes in brain structure and function, such as a shrinking hippocampus (involved in memory) and an overactive amygdala (linked to anxiety). Endocrine imbalance is persistent high cortisol levels can disrupt metabolism and lead to conditions like diabetes or obesity.

Causes of Stress

Stress arises when an individual perceives a situation as challenging, threatening, or overwhelming. Common causes include work related pressures, relationship conflicts, financial difficulties and major life changes such as loss or relocation. Chronic stressors, like caregiving or living in poverty, can exacerbate stress levels. Stress triggers vary by individual, influenced by personal, social and environmental factors (American Psychological Association, 2020).

Symptoms of Stress

Stress manifests in physical, emotional, cognitive, and behavioural symptoms, physical symptoms include headache, fatigue, muscle tension, sleep disturbances, and digestive issues. Emotional symptoms include anxiety, irritability, mood swings or a sense of being overwhelmed.

Cognitive symptoms include difficulty in concentrating, memory problems and constant worry.

Behavioural symptoms include changes in eating or sleeping patterns, withdrawal, or reliance on substances (Smith et al., 2021).

Perceived Stress

Stress perception plays a crucial role in its impact. The Perceived Stress Scale highlights how individual appraisal influences stress levels. Factors such as coping resources, personality traits and social support shape one's perception of stress. For instance, two people facing the same stressor may respond differently based on their resilience and coping mechanisms (Cohen et al., 1983).

Positive Coping Strategies

Effective coping strategies can mitigate the effects of stress and promote well-being:

Physical Activities

Regular exercise reduces stress hormones and enhances mood through the release of endorphins.

Mindfulness and Relaxation Techniques

Practices like meditation, yoga, and deep breathing can help regulate the stress response.

Social Support

Talking to friends, family or counsellors provides emotional relief and perspective.

Time Management

Organizing tasks and setting realistic goals prevent feelings of overwhelm.

Healthy Lifestyle Choices

Balanced nutrition, adequate sleep and limiting substances like caffeine or alcohol support physical and emotional resilience (Grossman et al., 2004).

Psychological Well-being

Psychological well-being refers to an individual's emotional and mental state, which includes aspects such as life satisfaction, the ability to cope with stress and a sense of purpose in life. It encompasses both the absence of mental illness and the presence of positive psychological functioning (Keyes, 2002). High psychological well-being is crucial for overall health and quality of life.

Dimensions of Psychological Well-being

According to Ryff (1989), psychological well-being can be measured through the following six dimensions:

1.Autonomy	The capacity for independent decision making and self direction.
2.Environmental mastery	The ability to manage and navigate one's environment effectively.
3.Personal growth	A sense of continued development and self improvement.
4.Positive relationships with others	The quality of interpersonal relationships and social support.
5.Purpose in life	A sense of direction and meaning in life.
6.Self-acceptance	A positive attitude towards oneself.

Benefits of High Psychological Well-being

High psychological well-being is associated with a wide range of adaptive outcomes that extend beyond the absence of psychological distress. Conceptualised as optimal psychological functioning, psychological well-being has been consistently linked to better mental health, including greater emotional stability, resilience, and lower vulnerability to anxiety and depressive symptoms (Ryff, 1989). Empirical evidence also suggests that individuals with higher levels of psychological well-being demonstrate improved physical health outcomes, such as reduced risk of chronic illness and enhanced longevity, highlighting the close interconnection between psychological and physiological functioning (Diener & Chan, 2011). In addition, high psychological well-being enhances individuals' capacity to cope effectively with life's challenges and stressors by fostering adaptive appraisal, emotional regulation, and a sense of personal agency. These capacities, in turn, support the development and maintenance of positive interpersonal relationships, as psychologically well-adjusted individuals are more likely to engage in supportive social interactions and to benefit from greater social connectedness and perceived social support. Collectively, these benefits underscore the central role of psychological well-being in promoting holistic health and adaptive functioning across the lifespan.

Mechanisms of High Psychological Well-being

High psychological well-being is sustained through several interrelated psychological and social mechanisms that facilitate adaptive functioning. Individuals with higher levels of psychological well-being are more likely to employ adaptive coping strategies, such as problem-focused coping, emotional regulation, and constructive appraisal of stressors, which enable them to manage challenges more effectively and reduce the impact of adverse experiences. These coping capacities are further strengthened by social support, as strong and supportive social networks play a crucial role in buffering the effects of stress and enhancing life satisfaction (Cohen & Wills, 1985). Social relationships provide emotional reassurance, practical assistance, and a sense of belonging, all of which contribute to psychological resilience. Additionally, high psychological well-being is closely associated with optimism and self-efficacy, reflecting a positive outlook toward the future and a belief in one's capacity to overcome difficulties. Such beliefs foster perseverance, motivation, and adaptive goal pursuit, thereby promoting more favourable outcomes across personal, social and occupational domains. Together, these mechanisms

highlight how psychological well-being operates not only as an outcome but also as an active resource that supports resilience and sustained life satisfaction.

Procedure

The consent was sought from the willing participants and confidentiality was ensured. The initial sample size of the study was 213, the participants were selected using purposive sampling technique and were screened using the selected tools , based on the scores obtained, participants assessed to have high level of perceived stress, unfavourable menstrual attitude and low psychological well-being were selected for the intervention phase.

The research adopted before, after and follow-up without control group design and involved 91 participants with 30 in first experimental group, 30 in second experimental strategiesgroup and 31 in third experimental group. The participants were adolescent school girls belonging to grades 7, 8 and 9. The participants were allocated to the three experimental groups using randomization.

The intervention comprises of a structured programme of simplified physical exercises by Vethathri Maharishi to be easily performed by the participants, combined with psychoeducational sessions that provide information on menstrual health, coping strategies, and stress management techniques. Following the intervention, the same measures are administered to assess any changes in menstrual attitudes, perceived stress and psychological well-being. This approach allows for the evaluation of the intervention's effectiveness within the same group of participants.

Figure 1

Phases of the Study

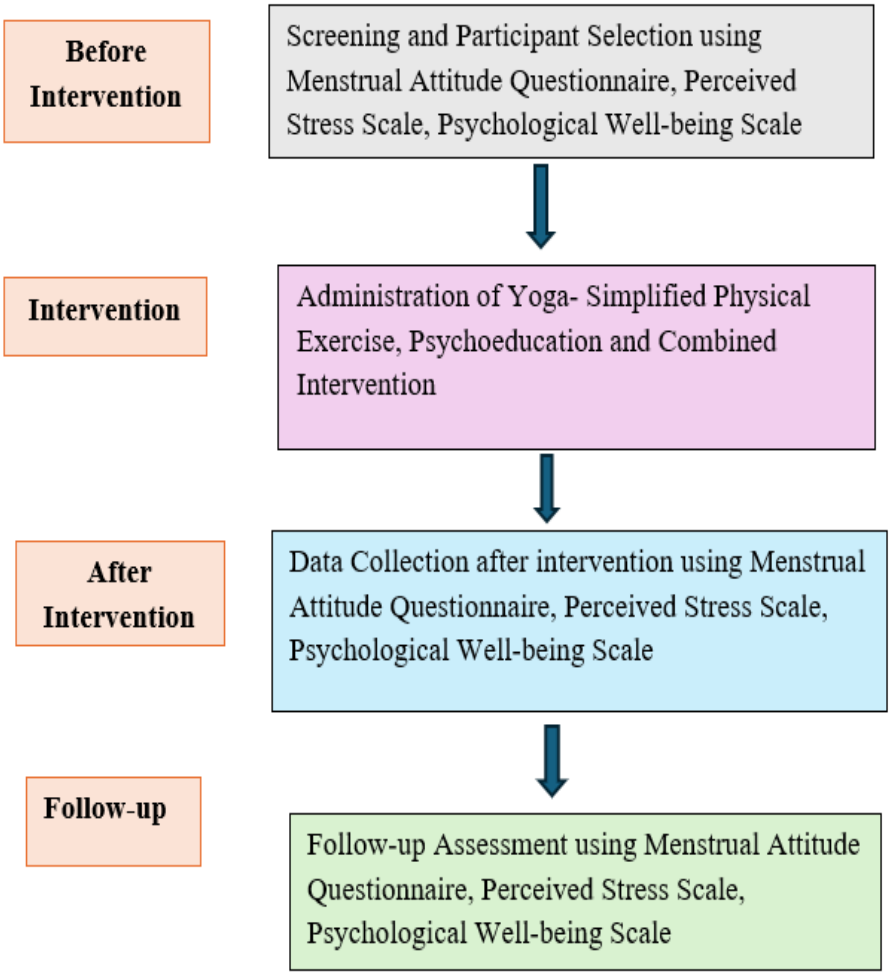


Table 2

Schedule of Yoga Group

Weeks	**Sessions per week**	**Details of Simplified Physical Exercises Provided**		**Number of exercises per session**	**Total Duration (each session) in minutes**
1st week	4	1	Foot Reflexology	3	60
		2	Neuromuscular Exercise		
		3	Makarasana A		
		4	Makarasana B		
2nd week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B		3	50
3rd week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B		3	50
4th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B		3	50
5th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B		3	50
6th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B		3	50
7th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B		3	50
8th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B		3	50

Table 3

Schedule of Psychoeducation Group

Weeks	Sessions per week	Topic of Psycho education	Total Duration (each session) in minutes
1st week	3	Menstrual Cycle, Taboos and Myth	30
		Menstrual Hygiene practices and Risk factors for developing Menstrual Disorders, Promoting Healthy Menstruation	
		Menstrual Attitude, Types, Significance of Promoting Favourable Menstrual Attitude	
2nd week	3	Stress, Causes, Consequences of High Stress Levels	25
		Role of Brain, Symptoms of Stress and Perceived Stress	
		Coping Mechanisms, Positive Coping	
3rd week	3	Psychological Well-being, Dimensions	25
		Dimensions - Autonomy, Environmental Mastery, Personal Growth	
		Dimensions - Positive Relations, Purpose in Life and Self Acceptance	
4th week	3	Benefits of High Psychological Well-being	25
		Strategies used to build Psychological Well-being	
		Activities to Practice to enhance Psychological Well-being	
5th week	3	Menstrual Attitude and Health - Questions and Discussions	25
		Perceived Stress – Discussions	
		Psychological Well-being – Discussions	
6th week	3	Recap - Menstrual Health Education	25
		Recap - Perceived Stress	
		Recap - Psychological Well-being	
7th week	3	Discussed about Menstrual Health, Perceived Stress and Psychological Well-being Concepts	25
8th week	3	Testing the level of understanding through team quiz activity	25
		Explaining the association between Menstrual Health, Stress and Psychological Well-being	
		Clarifying Questions, Closure with End Activities	

Table 4

Schedule of Combined Intervention Group (Yoga and Psychoeducation)

Weeks	Sessions per week	Details of Simplified Physical Exercises Provided	Topics Discussed	Total Duration (each session) in minutes
1st week	4	1 Foot Reflexology 2 Neuromuscular exercise	Menstrual Health - Menstrual Cycle, Taboos and Myth	60
		3 Makarasana A 4 Makarasana B	Menstrual Hygiene practices and Risk factors for developing Menstrual disorders, Promoting healthy Menstruation	
2nd week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B	Menstrual Attitude, Types, Significance of Promoting favourable menstrual Attitude	50
3rd week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B	Stress, Causes, Consequences of High Stress Levels Role of Brain, Symptoms of Stress and Perceived Stress, Coping Mechanisms, Positive Coping	50
4th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B	Psychological Well-being, 6 Dimensions	50
5th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B	Benefits of High Psychological Well-being. Strategies to build Psychological Well-being	50
6th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B	Activities to Practice to enhance Psychological Well-being	50
7th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B	Recap - Menstrual Health, Perceived Stress, Psychological Well-being Testing the level of understanding through Team Quiz Activity	50
8th week	3	Foot Reflexology Neuromuscular Exercise Makarasana A and B	Explaining the association between Menstrual Health, Stress and Psychological Well-being Closure and Fun Activity	50

Intervention

The intervention sessions were conducted three times a week over a period of eight weeks, ensuring consistent engagement and progress. Each session lasted for approximately 50 minutes, providing ample time for effective implementation of activities and exercises. A total of 24 sessions were conducted for each experimental group. This structured schedule aimed to maximize the impact and effectiveness of the intervention.

All 24 sessions were delivered by the primary researcher. The initial five sessions were additionally moderated by the yoga trainer Mrs. Yasothai Manohar, who holds an M.A. in Yoga for Human Excellence and is a certified Teacher Trainer at the Simplified Kundalini Yoga Centre, Avinashi. Her role involved guiding the correct performance of the Simplified Physical Exercises and ensuring adherence to standard Yoga practices.

Each session included the full group of study participants assigned to that intervention arm. Sessions were conducted at the Palaniappa International School premises, Avinashi. The intervention followed a fixed schedule, and all sessions were supervised to maintain fidelity to the protocol. Attendance was monitored for each session and adherence to the standard training procedures was ensured throughout.

Statistical Analysis

- The data was analyzed using Statistical Package for Social Sciences (SPSS) version 30. Skewness and Kurtosis were used to identify the normality of the data, hence the parametric statistics were utilized.
- Mixed ANOVA was used to evaluate the effectiveness of the intervention during before, after and follow-up phases.
- The effect of intervention among the experimental groups were analyzed using the Bonferroni Post-hoc tests to compare the effectiveness of provided intervention.