Chapter 2

Review of Literature

A comprehensive review of literature is essential to understand the existing research, identify gaps and establish a foundation for the present study. This chapter examines previous studies related to psychological well-being, menstrual attitudes, stress management and the effectiveness of yoga and psychoeducation as interventions. The review provides insights into the theoretical underpinnings of the study, explores various dimensions of psychological well-being and evaluates intervention strategies that have been applied in similar contexts. By analyzing relevant empirical research, this chapter highlights the significance of integrative interventions in shaping menstrual attitudes and reducing psychological distress among adolescent girls. Additionally, it aims to assess methodological approaches adopted in previous studies, ensuring a scientifically robust framework for the current research. The following sections summarize key findings from previous literature, offering a structured perspective on the topic and justifying the necessity of the present study.

Adolescence, Menstrual and Mental Health

Garg and Anand (2015) explored prevalent myths and taboos associated with menstruation in India, their impact on women's lives and to propose strategies for addressing these issues within primary care settings. They conducted a comprehensive literature review to gather information on cultural beliefs, societal norms and existing interventions related to menstruation in India. The study highlighted that menstruation is often surrounded by secrecy and misconceptions, leading to various restrictions on women's participation in social and cultural activities. These myths have significant implications for women's emotional well-being, mental health, lifestyle and overall health. They emphasized the importance of raising awareness among adolescent girls about menstrual health and hygiene, empowering women through education, providing access to affordable sanitary products, and involving men in discussions to challenge deep-rooted cultural taboos. The study concluded that a strategic, multi-sectoral approach is essential to combat menstruation-related myths and improve the reproductive health of adolescent girls and women in India.

Gothe et al.(2016) conducted a meta-analysis to examine the effects of physical activity on cognitive function in children, synthesizing research from various experimental and quasi-experimental studies involving children aged 6 to 18 years. Using cognitive function tests, the study found a significant positive impact of physical activity, particularly on tasks involving attention and work memory. The primary statistical method used to assess the impact of physical activity on children's cognitive function was likely "effect size", specifically calculating a pooled Cohen's d across multiple studies to determine the average magnitude of the positive effect of physical activity on cognitive tasks related to attention and working memory. The findings supported the idea that physical activity, including activities like yoga, enhances cognitive performance in children and contributes to mental well-being.

Creswell (2017) provided comprehensive review of mindfulness interventions, highlighting their positive effects on mental health. The review synthesizes empirical studies on mindfulness-based stress reduction and mindfulness-based cognitive therapy showing that these practices reduce anxiety, depression and stress, while enhancing emotional regulation and cognitive flexibility. Mindfulness interventions, including meditation, body scanning and yoga, have been effective across diverse demographics and settings. The review analyzed Randomized Control Trials of mindfulness interventions, using comparative analysis to assess outcomes versus Treatment as usual or no treatment groups. Effect sizes measured health and interpersonal changes, while t-tests or ANOVA evaluated effectiveness. Some studies included follow-up assessments and regression analysis explored outcome mediators, highlighting the need for further research. The review emphasized robust evidence supporting mindfulness ability to reduce psychological distress and promote long term well-being.

Chandra-Mouli, Patel and Mathur (2019) assessed menstrual health awareness and its relationship to attitudes and practices among 500 school girls from urban areas. The study used a structured questionnaire to collect data. The intervention involved educational sessions on menstrual hygiene practices. Descriptive statistics and chi-square tests were used to analyze the data. The findings revealed that limited awareness about menstrual hygiene correlated with negative attitudes toward menstruation and educational sessions significantly improved knowledge and attitudes.

Vishwanath et al. (2019) focused on the role of education and physical activity in promoting mental health among adolescents. The study used a quasi-experimental design with 150 adolescents (75 in the experimental group and 75 in the control group) from schools in rural Maharashtra, India. Depression, Anxiety, Stress Scale and Mental Health Inventory were used to assess mental health outcomes. The integrative intervention combined psychoeducation and physical activity (yoga and sports). Paired t-tests, chi-square tests and multiple regression analysis were used for statistical analysis. The study found significant improvements in mental health outcomes, particularly in reducing depression and anxiety, in the experimental group, with the combined approach of education and physical activity showing stronger effects.

Balasubramanian (2021) conducted a survey on menstrual hygiene management in Tamil Nadu and highlighted that many adolescent girls, especially in rural areas, lack proper knowledge of menstrual hygiene. In the narrative review, the author addressed the gap in awareness affects their health, education and overall well-being. The study recommends systematic awareness programmes in schools and communities to address these gaps and promote hygiene practices, including the provision of menstrual products and disposal facilities.

Holmes et al. (2021) identified concerns related to menstrual health literacy among adolescents across different income level countries. The authors performed a comprehensive search of relevant social science and medical databases for peer reviewed papers published between January 2008 and January 2020, resulting in the identification of 61 pertinent studies. Thematic analysis revealed that in low and middle income countries, adolescents face significant challenges related to menstrual hygiene and cultural issues, whereas in high income countries, concerns were more frequently associated with pain management and long term health outcomes. The study concluded that to enhance menstrual health literacy globally, appropriate policies should be developed with input from multiple stakeholders, ensuring evidence based and cost effective practical interventions.

Bhalerao et al. (2024) assessed mental health problems experienced during the menstrual cycle among 364 adolescent girls in the age range of 15–19 years in the rural area of Wardha District, Maharashtra, India, and they were administered by demographic details, Menstrual Distress Questionnaire and the Hamilton Depression Rating Scale. Statistical analysis involved descriptive statistics and chi-square tests to examine associations between

variables. The results revealed that adolescent girls experienced significant psychosocial issues during menstruation, including stress, mood swings, anxiety, sadness and irritability. Approximately 25% of the participants reported feeling ashamed and guilty about pubertal changes, with menarche being associated with emotions of fear, shyness and sadness. The findings highlighted the psychological impact of menstruation among adolescents and emphasized the need for interventions to improve menstrual well-being and mental health support for adolescent girls in rural communities.

Prevalence of Menstrual abnormalities

Jothy and Kalaiselvi (2012) explored menstrual hygiene and management issues among 150 rural adolescent school girls in Tamil Nadu, India. Data was collected using structured questionnaires. Statistical analyses included descriptive statistics to summarize findings. The study found that most girls lack knowledge about menstruation before menarche, with many relying on traditional practices such as the use of cloth. Poor hygiene practices and sociocultural taboos were prevalent, underscoring the need for educational interventions and improved access to menstrual products.

Moghadam et al. (2014) conducted a meta analysis to investigate the prevalence of Premenstrual Syndrome across various studies. After reviewing 53 articles, 17 were selected for analysis. The pooled prevalence of Premenstrual Syndrome was found to be 47.8% (95% CI: 32.6–62.9), with the lowest prevalence reported in France (12%) and the highest in Iran (98%). Although there was an increasing trend in Premenstrual Syndrome prevalence from 1996 to 2011, the correlation with the year of study was not statistically significant ($p = 0.80$). The study suggested that future research should address Premenstrual Syndrome prevalence in different countries, considering variations in tools and sample sizes used.

Parameswari et al. (2014) assessed the menstrual hygiene practices among 500 teenage girls in Chennai. Data was collected using structured questionnaires. Descriptive statistics were used to summarize findings. The study revealed that 62% of participants used sanitary pads, with a significant portion still relying on unhygienic practices. Awareness programmes and better access to menstrual hygiene products were recommended.

Varghese et al. (2015) examined the religious restrictions and cultural taboos related to menstruation among 250 adolescent girls in Tamil Nadu. Data was collected using

structured questionnaires and descriptive statistics was used. The study found that cultural taboos and restrictions were widespread, negatively impacting menstrual hygiene practices. Awareness campaigns and community based interventions were recommended to mitigate these challenges.

Devi et al. (2016) assessed menstrual hygiene awareness among 400 adolescent girls in rural Kancheepuram, Tamil Nadu, was administered structured questionnaires. Statistical analysis involved descriptive methods. The findings revealed that most participants had limited knowledge about menstruation before menarche, with a significant number practicing unhygienic menstrual management. The study recommended targeted awareness programme and the provision of affordable menstrual hygiene products.

Seenivasan et al. (2016) evaluated the knowledge, attitudes and practices related to menstruation among adolescent girls in Chennai, India. A pre tested questionnaire was used to gather data from a sample of 500 school going adolescent girls aged 12 to 17 years and descriptive statistics was analyzed the data. The findings revealed that 69% of the participants attained menarche between the ages of 11 and 13, and 40% had prior knowledge about menstruation before their first menstrual cycle, with mothers being the primary source of information in 47.7% of cases. Notably, 59% of the girls reported feeling scared during their first menstruation. Additionally, all participants practiced some form of restriction during menstruation. The study highlighted the need for accurate and adequate information about menstruation and its management among adolescent girls, emphasizing the importance of addressing prevalent myths and misconceptions.

Lustyk et al. (2017) conducted a systematic review and meta analysis to define and diagnose premenstrual disorders, including premenstrual symptoms, premenstrual syndrome and premenstrual dysphoric disorder. The study explored the prevalence and impact of these conditions on women's quality of life, focusing on social, occupational and psychological aspects and evaluated the role of physical activity, particularly aerobic exercise, in managing premenstrual symptoms. The analysis included data from multiple studies conducted globally, using diverse scales for assessing premenstrual syndrome and premenstrual dysphoric disorder symptoms and quality of life. Aerobic exercise was identified as the primary intervention and analyzed as a non pharmacological treatment. Meta analytical techniques were employed to calculating effect sizes and assessing the significance of aerobic exercise in alleviating premenstrual syndrome symptoms. Findings

indicated that regular aerobic exercise effectively reduced both physical and psychological symptoms, highlighting its potential as an integral part of premenstrual syndrome management, alongside diet, stress management, cognitive behavioural therapy and medications. The study concluded with recommendation for further research to determine the optimal type and dosage of exercise for managing premenstrual syndrome.

Priya et al. (2017) assessed menstrual hygiene and related personal hygiene practices among adolescent girls in rural Puducherry, India. Data were collected using a semi-structured questionnaire administered to 528 adolescent girls aged 10 to 19 years residing in the rural field practice area of Mahatma Gandhi Medical College and Research Institute. Descriptive statistics were utilized to analyze the data. The findings revealed that 89.2% of the participants used sanitary pads, while 6.6% and 4.2% used fresh and reusable cloths, respectively. Approximately 65.3% of the girls changed their absorbents two to five times daily. Regarding disposal methods, 60.8% disposed of used absorbents by burying or burning. Notably, 67.9% of the participants washed their genitalia during micturition and 54.4% used soap and water for hand washing, whereas 1.4% resorted to using ash or mud. The study concluded that despite the high usage of sanitary pads, certain unhygienic practices persisted, underscoring the need for increased awareness and education on proper menstrual hygiene among adolescent girls.

Harlow and Campbell (2018) conducted a comprehensive global review on menstrual health and disorders, aiming to synthesize existing knowledge on the prevalence, determinants and consequences of menstrual disorders worldwide. The study utilized a systematic literature review methodology to analyze findings from various studies across different countries and populations. As a global review, the study encompassed data from multiple regions. The authors employed qualitative synthesis techniques to integrate findings from the selected studies. The review highlighted significant variations in the prevalence of menstrual disorders globally, influenced by factors such as age, socioeconomic status and cultural practices. The authors emphasized the need for standardized definitions and methodologies in future research to improve the comparability of findings across different settings. They also called for increased attention to menstrual health in public health agendas, given its substantial impact on women's well-being and quality of life. The study concluded that addressing menstrual health requires a multifaceted

approach, including education, healthcare services and policy interventions, to effectively manage and mitigate the impact of menstrual disorders on women's lives.

Verma et al. (2020) studied the menstrual problems among 183 unmarried female undergraduate medical students in North India using a self administered questionnaire covering sociodemographic factors, menstrual history and lifestyle. The study used descriptive statistics for prevalence rates and mean values. Chi-square tests or t tests analyzed associations between menstrual problems and lifestyle factors, while correlation analysis examined relationships between premenstrual syndrome, dysmenorrhea and other variables. Key findings included a mean menarche age of 13.37 years. The most common issue was premenstrual syndrome affecting 85.24% of students, with mood swings being the most frequent symptom. Dysmenorrhea affected 60.66%, and 48.63% had abnormal bleeding patterns. Regular exercise was linked to reduced dysmenorrhea, while premenstrual syndrome and dysmenorrhea were associated with each other. No significant associations were found between premenstrual syndrome and factors like exercise, Body Mass Index, or menstrual cycle patterns. The study suggested the need for timely intervention and proper treatment for menstrual issues among medical students.

Kabukçu et al. (2021) investigated the prevalence of primary dysmenorrhea among 316 adolescent girls and its association with attention deficit hyperactivity disorder and psychological symptoms in Turkey. They found that adolescents with primary dysmenorrhea had higher rates of attention deficit hyperactivity disorder symptoms and psychological issues such as stress and anxiety. Attention Deficit Hyperactivity Disorder symptoms were linked to more severe menstrual pain and greater perceived stress.The study used descriptive statistics for prevalence rates and correlation analysis to examine relationships between primary dysmenorrhea, attention deficit hyperactivity disorder symptoms and psychological issues. Regression analysis assessed associations, while t tests or Chi-square tests compared group differences.The findings suggested that adolescents with primary dysmenorrhea were more likely to experience attention deficit hyperactivity disorder and psychological difficulties, emphasizing the need for early screening and interventions to improve their quality of life.

Liu et al. (2023) investigated the prevalence and factors associated with premenstrual syndrome among 5,099 Chinese adolescent girls in Shandong, China. The

study assessed premenstrual syndrome symptoms, menstrual characteristics, body measurements, anger, stress and demographic factors. The statistical analysis used included stepwise logistic regression to identify factors associated with premenstrual syndrome. Descriptive statistics were used to report prevalence rates, and odds ratios were calculated to measure the strength of associations between premenstrual syndrome and various psychosocial and menstrual factors. The overall premenstrual syndrome prevalence was 24.6%, with common symptoms including irritability (54%) and fatigue (52.5%). Key risk factors for premenstrual syndrome included high life stress (OR 2.26), trait anger (OR 4.65), alcohol consumption (OR 1.28), short menstrual intervals (≤24 days, OR 1.45), and severe period pain (OR 4.84). The study highlighted the significant associations between these factors and premenstrual syndrome risk.

Nandakumar et al. (2023) conducted a cross-sectional survey to determine the prevalence of premenstrual syndrome among medical students and to identify potential risk factors, with a particular focus on stress. The study involved 450 female health professional under graduate and post graduate students aged 18 to 35 years. Data were collected using a self-administered questionnaire designed to assess premenstrual syndrome symptoms and the Perceived Stress Scale to evaluate stress levels. Descriptive statistics were employed to analyze the data. The findings revealed a premenstrual syndrome prevalence of 76.35% among the participants, with higher rates observed in the 18–21 age group, hostel residents, those reporting irregular physical activity and individuals with elevated stress levels. The most commonly reported psychological symptom was reduced social interaction followed by irritability, while the predominant somatic symptoms included muscle pain and abdominal bloating. Notably, Perceived Stress Scale scores were significantly higher in participants with premenstrual syndrome compared to those without, suggesting that stress was a potential risk factor for increased premenstrual syndrome incidence among young women. The study concluded that interventions such as yoga and relaxation techniques should be considered to mitigate stress levels and enhance the quality of life for young females experiencing premenstrual syndrome.

Houghton and Adkins-Jackson (2024) proposed a structural intervention model to address menstrual health disparities influenced by socio structural factors such as access to health care and food. The study used a hypothetical multilevel clustered-randomized control trial involving individuals racialized as Black and/or Latinx in food and health care deserts

in Northern Manhattan. Participants were divided into four groups: premenarchal, preparous, postpartum, and perimenopausal individuals who menstruate. The intervention included psychoeducation on racism related trauma, free groceries and healthcare vouchers. Mixed methods, such as diaries, interviews, surveys and mobile apps, were used to assess effectiveness over one year. The study highlighted the potential of structural interventions to reduce reproductive health disparities, demonstrating the feasibility of addressing menstrual health through intersectional factors and social inequities.

Menstrual Attitude and Perceived Stress

Song et al. (2013) examined the relationships between lifestyle, menstrual attitude and premenstrual syndrome among 246 nursing students in Gyeonggi Province. Data were collected via a self administered questionnaire and analyzed using SPSS/WIN 20.0 with various statistical tests. Findings revealed that students with undesirable alcohol habits ($r = 0.15$, $p = 0.02$) and negative menstrual attitudes ($r = 0.17$, $p = 0.01$) experienced more severe premenstrual syndrome. Additionally, students with dysmenorrhea had both more severe premenstrual syndrome ($F = 12.41$, $p < 0.01$) and a negative menstrual attitude ($F = 6.18$, $p < 0.01$). The study suggested that nursing interventions to improve alcohol habits, reduce negative menstrual attitudes and manage dysmenorrhea could help alleviate premenstrual syndrome in nursing students.

Lawal et al. (2019) explored the effects of anxiety and body esteem on menstrual attitudes among 276 adolescent girls in the age range of 12–19 years in Ibadan, Nigeria, were administered by Menstrual Attitude Questionnaire, the Body Esteem Scale and the State Trait Anxiety Inventory. Multivariate Analysis of Variance was used as statistical analysis. The results indicated that lower anxiety was associated with more positive menstrual attitudes, while higher body esteem related to appearance led to more negative menstrual attitudes. The study concluded that reducing anxiety and promoting positive body esteem were crucial for fostering healthier menstrual attitudes.

Govind and Devi (2023) examined the influence of academic stress on menstrual symptoms and identify demographic differences. The study involved a sample of 98 adolescent girls from various educational institutions in India. Quantitative research methods were used, and tools included menstrual information questionnaires, the Visual Analog Scale for pain severity, the Moos Menstrual Distress Questionnaire and the Illness

Perception Questionnaire. The research assessed the relationship between academic stress and menstrual irregularities, focusing on differences across demographic variables. Statistical analysis, including descriptive statistics and Pearson correlation coefficients were employed to interpret the data. The findings revealed a significant relationship between academic stress and menstrual cycle irregularities, with notable demographic differences. The study recommends interventions such as stress management training, meditation and yoga to mitigate the negative effects of academic stress on adolescents' menstrual health.

Yaşar (2024) investigated the relationship between perceived stress levels and menstrual complaints among university students of Turkey. The study utilized a cross sectional design and employed self reported questionnaires to assess perceived stress and menstrual symptoms. The sample consisted 351of university students. Statistical analyses were conducted to examine the association between stress levels and menstrual complaints. The results indicated that higher perceived stress was associated with increased severity of menstrual symptoms, suggesting that stress management interventions may be beneficial for reducing menstrual discomfort among university students.

Shrestha et al. (2025) studied the effectiveness of menstrual hygiene management training to enhance knowledge, attitude and practice among adolescents in Sindhupalchowk, Nepal. A total of 427 participants (175 boys and 252 girls), aged 11–13, completed a questionnaire before receiving structured training using the Menstrupedia tool, conducted by trainers from Putali, Nepal. Data analysis used the MANOVA test to assess sociodemographic associations and the Wilcoxon signed rank test to compare pre and post training scores. One month after the intervention, the median knowledge score increased by 1 point ($p < 0.01$) and the median attitude score by 5 points ($p < 0.01$). Higher attitude scores were linked to the Hindu religion, while lower scores were associated with mothers in informal occupations. The study concluded that the Menstrupedia based intervention significantly improved knowledge and attitudes toward menstruation, suggesting that scaling up this approach could further enhance menstrual health education among Nepali adolescents.

Perceived Stress

Sandal et al. (2017) examined the prevalence of depression, anxiety, and stress (DAS) among school-going adolescents in Chandigarh. Ten government schools were

randomly selected, and 470 students participated. The Depression, Anxiety and Stress -21 questionnaire was used, and data analysis included the chi-square test and correlation analysis. The prevalence rates were 65.53% for depression, 80.85% for anxiety, and 47.02% for stress, with comorbidity between depression and anxiety at 57.65%. Extremely severe depression was rare (3%). Higher prevalence was observed in females, and the peak age for depression and anxiety was 18 years. The study highlighted the need for early identification and intervention to prevent psychiatric disorders among adolescents.

Cohen et al. (2018) reviewed to synthesize existing research on the relationship between psychological stress and increased vulnerability to various diseases. The authors analyzed studies that investigated the impact of stress on disease susceptibility. The findings highlighted that chronic psychological stress can impair immune function, leading to heightened susceptibility to infections, slower wound healing and exacerbation of autoimmune diseases. The review also discussed how stress contributes to the development and progression of cardiovascular diseases, metabolic disorders and mental health conditions. The authors emphasized the importance of stress management interventions and the need for further research to elucidate the mechanisms linking stress to disease outcomes.

Shrestha et al. (2019) assessed perceived stress, stress sources and coping strategies among medical students in Nepal. The cross sectional study involved 106 students from Patan Academy of Health Sciences and used the Perceived Stress Scale and Medical Student Stressor Questionnaire. Data were analyzed using descriptive statistics, correlation and ANOVA. The results showed that high perceived stress was significantly linked to academic related stressors. Positive coping strategies were found to help alleviate stress. The study highlights the impact of academic stress and the importance of effective coping strategies.

Kaplan et al. (2023) investigated the impact of a cognitive behavioural therapy based psychoeducation programme on university students' automatic thoughts, perceived stress and self-efficacy levels. The study was carried out at a university in Turkey with a sample of 223 students who volunteered to participate. The intervention consisted of four 45 minutes face to face sessions. Data collection tools included an individual introduction form, the Automatic Thoughts Questionnaire, the Perceived Stress Scale and the General Self Efficacy Scale. Descriptive statistics, along with Pearson and Spearman correlation tests, were utilized for data analysis. The results indicated a significant decrease in students'

automatic thoughts and perceived stress levels, accompanied by a notable increase in self-efficacy scores post intervention ($P<0.05$). The study concluded that the cognitive behavioural therapy based psychoeducation programme positively influenced various aspects of university students' psychological well-being, suggesting its effectiveness in reducing negative automatic thoughts and perceived stress while enhancing self-efficacy.

Keerthi et al. (2024) studied the prevalence of perceived stress among higher secondary students in Thiruvananthapuram, South Kerala, involving 539 adolescents from 48 classes across eight schools. Using the Perceived Stress Scale - 10, chi-square analysis was performed to assess statistical significance. Odds Ratio and confidence intervals were calculated to estimate the strength of association. Logistic regression analysis was done to determine the risk factors. The correlation of academic performance with perceived stress was assessed using the Spearman Rank test. The study found that 34.1% of participants experienced significant stress, with 8.7% reporting severe stress. Higher stress levels were linked to better academic performance, and factors like age and academic stream were also associated with stress levels. The study concluded that academic related stress was significant among adolescents and recommended stress reduction programmes in schools.

Psychological Well-being

Ryan and Deci (2000) provided an overview of self-determination theory, highlighting its role in fostering intrinsic motivation and well-being. This theoretical review, supported by empirical evidence, emphasized the importance of satisfying three basic psychological needs: autonomy, competence and relatedness. According to self-determination theory, when these needs are met, individuals experience enhanced intrinsic motivation, which in turn contributes to overall well-being and social development. The findings underscored that fulfilling these needs is essential for fostering both motivation and mental health, suggesting that environments support autonomy and competence was crucial for promoting personal growth and well-being.

Keyes (2002) aimed to integrate two well-being traditions: subjective well-being and psychological well-being. Using a sample of adults from the United States, the study assessed their well-being using multiple tools, including Ryff's Psychological Well-Being Scales and measures of life satisfaction, affect balance, and personality traits. This cross-sectional study found that psychological well-being and subjective well-being were distinct

but interrelated constructions, with psychological functioning contributing uniquely to well-being beyond subjective happiness. The findings underscored the importance of integrating eudaimonic and hedonic perspectives for a holistic understanding of well-being.

Fredrickson and Joiner (2002) examined how positive emotions contribute to upward spirals of emotional well-being, hypothesizing that experiencing positive emotions broadens thought-action repertoires, leading to improved coping and well-being over time. The study was conducted with 138 college students in the United States, who completed daily emotion reports and measures of broad minded coping strategies over multiple weeks. Correlation and regression analyses were used to assess the relationship between positive emotions, coping mechanisms and subsequent well-being. The findings showed that experiencing positive emotions predicted an increase in broad minded coping, which in turn led to further increases in positive emotions, creating a reinforcing cycle of well-being enhancement. This study provided empirical support for Fredrickson's "Broaden and Build" theory of positive emotions, emphasizing that promoting positive emotional experiences can lead to lasting improvements in mental health.

Seligman et al. (2005) investigated the effectiveness of positive psychology interventions in enhancing happiness and reducing depressive symptoms. The study involved 577 adult participants who were assigned to various positive psychology exercises, such as writing gratitude letters, identifying personal strengths and engaging in acts of kindness. The effectiveness of these interventions was measured using happiness and depression scales at baseline, post intervention, and follow-up. A randomized controlled trial design was used, with ANOVA tests applied to analyze differences between intervention and control groups. Results demonstrated that positive psychology interventions significantly increased happiness and reduced depressive symptoms, with some effects persisting for upto six months. The findings suggested that simple, structured interventions focusing on gratitude and strengths based practices can lead to sustainable improvements in psychological well-being.

Ryff and Singer (2013) explored the relationship between eudaimonic well-being and physical health, particularly focusing on biomarkers of stress and chronic disease risk. The study used data from 1,205 adults participating in the Midlife in United States study, employing the Psychological Well-Being Scales to measure eudaimonic well-being. Health outcomes were assessed using biomarkers such as cortisol levels, inflammatory markers and

cardiovascular risk indicators. Structural equation modeling was used to analyze the relationships between psychological well-being and health. Results indicated that higher levels of eudaimonic well-being were significantly associated with lower cortisol levels, reduced proinflammatory cytokines and better cardiovascular health. The findings provided strong evidence for the physiological benefits of psychological well-being, supporting the integration of mental well-being interventions in public health policies.

Stamp et al. (2015) examined relationships between mental toughness and psychological well-being in undergraduate students. Participants were undergraduate students (n=168) from nine United Kingdom universities. The sample included participants from a range of different degree programmes and from all three years of standard undergraduate study. Online questionnaires were completed to assess mental toughness and psychological well-being. Multiple linear regression analyses found that components of mental toughness were moderate to strong predictors of psychological well-being with between 35% and 64% of variance explained. Importantly, age, gender, and level of study were not found to predict psychological well-being. The findings were consistent with stated hypotheses and further demonstrate the potential importance of mental toughness within educational settings.

Harding et al. (2019) studied the relationships among stress, protective factors and psychological well-being. A cross sectional predictive research design was carried out. A convenience sample of 152 students was recruited from a higher education institution in New Zealand. Data were collected by using online self-reported questionnaires and analyzed by descriptive statistics and path analyses by using AMOS. Results showed that the hypothesised model fit well with the sample data. Resilience, mindfulness, support from family and support from significant others were significant predictors of psychological well-being. Furthermore, stress significantly predicted social support, resilience, self-efficacy and mindfulness. There is the need to develop prevention interventions (e.g., a resilience building and mindfulness interventions) for students to help them manage stress and achieve psychological well-being.

Morales-Rodríguez et al. (2020) explored the factors influencing psychological well-being among 149 Spanish university students, focusing on learning styles, social skills, emotional intelligence, anxiety, empathy and self-concept. Using self-report scales, the study found significant relationships between well-being dimensions (self-acceptance,

positive relationships, autonomy, environmental mastery, personal growth, and purpose in life) and psychosocial factors. Multiple regression analyses showed strong correlations ($p < 0.01$) across these dimensions. The study emphasized the role of emotional and social factors in well-being and recommended interventions to improve mental health in educational settings.

Bernal et al. (2020) assessed how autonomy influences different dimensions of well-being based on Ryff's Psychological Well-Being Scale and the Transition to Adulthood Autonomy Scale. The study was conducted in Madrid, Spain, and Bogotá, Colombia, involving 1,148 participants aged 16–21 years. Descriptive statistics, correlation analyses, and ANOVA were used to analyze the data. The findings revealed a significant positive correlation between autonomy and psychological well-being, with individuals exhibiting higher autonomy also reporting greater life satisfaction and personal growth. The results suggested that fostering independence and self-regulation in young people may lead to improved well-being outcomes, reinforcing the importance of developmental autonomy in adolescence.

Yobas et al. (2020) evaluated the psychometric properties of Ryff's Psychological Well-Being Scale in English and Thai. The study aimed to test whether both language versions of the scale were valid and reliable for measuring psychological well-being among young people. The research was conducted in Singapore and Thailand, with participants drawn from four convenience samples of university and secondary school students. Descriptive statistics, exploratory factor analysis, confirmatory factor analysis and correlation analyses were used to evaluate the scale's structure and reliability. The results revealed that the psychological well-being scale comprised two distinct factors: Autonomy and Growth and the Negative Triad. All factors showed significant correlations with external measures of well-being, and reliability coefficients were within acceptable ranges. The findings supported the cross-cultural validity of Ryff's psychological well-being scale and highlight its applicability in diverse linguistic contexts for assessing adolescent and young adult well-being.

Ryff and Keyes (2020) explored predictors of psychological well-being among 200 women, divided into working and non working groups in urban area and they were administered by Ryff's Psychological Well-being Scale. The data was analyzed by t tests and correlation analyses. The findings indicated that work status and perceived stress levels

were significant predictors of psychological well-being, with social support acting as a mediator.

Majeed (2022) investigated the relationship between psychological well-being, self-efficacy, social support and scholastic achievement among adolescent school goers from Kulgam and Anantnag districts, Kashmir Valley. The findings revealed that psychological well-being, self-efficacy and social support significantly influenced academic achievement. The study emphasized the importance of supportive environments to enhance students' well-being and academic success and recommended interventions in educational settings.

Shalini et al. (2022) analyzed the impact of menstrual distress on the psychological well-being of females. The study utilized a comprehensive literature review to examine the negative symptoms associated with the menstrual cycle, such as pain, mood swings, depression, anxiety and stress, and their effects on women's psychological health. The authors highlighted the lack of awareness regarding menstruation and hygiene practices among females, emphasizing the need to address the psychological effects of menstruation, which are often overlooked. The study concluded that menstrual distress significantly affects women's psychological well-being and called for increased awareness and interventions to mitigate these effects.

Sharma et al. (2022) assessed the psychological well-being of college students and examine its correlation with age. They utilized the 42 items version of Ryff's Psychological Well-being Scale among 210 undergraduate students selected through simple random sampling in Jabalpur, Madhya Pradesh, India. After excluding incomplete responses, data from 197 participants (mean age = 19.41 ± 1.69 years; 61% male) were analyzed. Statistical analyses included descriptive statistics, independent samples t tests, and simple linear regression. The results indicated that students aged 20 years or older scored significantly higher in all dimensions of psychological well-being compared to those younger than 20 years ($t = 3.62$, $p = 0.01$). Furthermore, age was identified as a significant predictor of psychological well-being ($p = 0.05$), suggesting that older students tend to have better psychological well-being. The study concluded that students aged 20 years or more exhibited higher psychological well-being across all dimensions and recommended further research to explore the conceptual relationship between age and psychological well-being, as well as the impact of social changes on different age groups.

Yadav et al. (2023) investigated the association between psychological discomfort and the well-being among Jammu housewives and working women (N = 150 women; 75 working women and 75 housewives) of various ages (M = 33.93, SD = 11.07) were administered by Ryff's Scales of Psychological Well-being and the Perceived Stress Scale. A correlation design was employed, and t test and Pearson product moment correlation were used. The findings showed a significant difference in perceived stress between housewives and working women. Moreover, similar scores exist between housewives and working women on psychological well-being. Further, results showed a negative relationship between perceived stress and psychological well-being among housewives and working women.

Lomberg and Jordaan (2024) identified factors influencing psychological well-being in South African population. The research utilized a non experimental survey design, employing standardized instruments to measure emotional intelligence, adjustment, media and technology usage and psychological well-being. The study was conducted at a South African university, with a sample of 1,191 undergraduate students aged 18 to 30 years. Data analysis included descriptive statistics and multiple regression analysis to determine the predictive value of the variables. The results indicated that adjustment was the most significant predictor of psychological well-being, followed by emotional intelligence. Media and technology usage, as well as gender, were not significant predictors. The findings suggested that interventions targeting adjustment could be effective in enhancing the psychological well-being of undergraduate students.

Yoga

Mendelson (2010) explored the impact of yoga on stress and mental health in university students. The objective was to determine if Yoga intervention could reduce perceived stress and improve mental health outcomes in a college setting. The study involved a sample of university students randomized into a yoga intervention group and a control group. The tools used included self-report measures of stress, anxiety and depression, as well as physiological markers of stress. Using a randomized controlled trial design, the researchers found that the yoga group showed significant reductions in perceived stress and improved emotional regulation compared to the control group. The results were aligned with previous studies showing that yoga can reduce stress and improve mental health in academic populations (Smith et al., 2017). The study further underscores

the benefits of yoga in promoting mental well-being in young adults, making it an effective tool for stress reduction in university settings.

Khalsa et al. (2012) evaluated the mental health benefits of yoga in secondary school students. The study involved 51 adolescents aged 14–17, who were randomly assigned to either a yoga group or a physical education control group. The intervention consisted of a 10 week yoga programme integrated into the school curriculum. Psychological assessments were made using the State Trait Anxiety Inventory, Positive and Negative Affect Scale and Profile of Mood States. The findings indicated that students in the yoga group experienced significant reductions in negative emotions and stress levels compared to the control group, highlighting the potential benefits of yoga in supporting adolescent mental health.

Telles et al. (2015) conducted a randomized controlled trial in India to compare the effects of yoga and physical exercise on physical, cognitive and emotional well-being in children. The study involved 98 children aged 9–12 years, who were randomized into yoga and physical exercise groups. The intervention consisted of a 3 months programme with daily 60 minutes sessions of either yoga or physical exercise. The researchers used the Strengths and Difficulties Questionnaire, cognitive tasks and physical fitness assessments to measure outcomes. The findings revealed that yoga led to more significant improvements in emotional and cognitive measures than physical exercise, emphasizing the unique benefits of yoga for holistic child development.

Khalsa et al. (2016) examined the efficacy of yoga as a therapeutic intervention for reducing stress and improving mental health. In this randomized controlled trial, 100 participants with moderate to high stress levels were recruited from a university based research center in the USA. The study used the Perceived Stress Scale, State Trait Anxiety Inventory and Profile of Mood States to measure outcomes. The intervention consisted of an 8 weeks yoga therapy programme that included physical postures, breathing exercises and meditation. The statistical analysis involved ANOVA, t test and effect size measures. The results demonstrated significant reductions in stress, anxiety and mood disturbances among participants in the yoga group, with lasting effects observed at the 3 months follow-up.

Tsai (2016) investigated the effects of a 12 weeks yoga intervention on premenstrual symptoms among 64 menstruating female employees in Taiwan. After the yoga programme, participants reported significant reductions in menstrual pain, analgesic use ($p = 0.05$) and

work disruption due to pain ($p = 0.01$). The yoga intervention also improved physical function ($p = 0.05$) and bodily pain ($p = 0.01$), as well as specific premenstrual symptoms like abdominal swelling, breast tenderness, cramps and cold sweats. These improvements were linked to better health related quality of life. The study suggested that yoga effectively alleviates premenstrual symptoms and enhances well-being among female employees, recommending yoga as a beneficial practice to reduce premenstrual distress.

Thimmapuram (2017) engaged in research on the effects of yoga on burnout and stress in Community Hospital Healthcare Workers to assess the effect of yoga on burnout and stress among hospital workers. A cohort trial was conducted with 47 participants undergoing a 12 week yoga programme focusing on heartfulness meditation. Meditation practices were aimed at improving emotional wellness. Maslach Burnout Inventory and Emotional Wellness Assessment scores were used in analyzing the results. Reduced burnout and enhanced emotional wellness. Yoga can serve as a feasible intervention to mitigate occupational burnout in healthcare settings.

Devi (2018) investigated the role of regular yoga (6 months) in reducing stress among 303 healthcare professionals. Yoga included physical yoga exercises, meditation and lifestyle adjustments. Depression Anxiety Stress Scales was used to analyze before and after intervention scores. Changes in Depression Anxiety Stress Scales scores were analyzed to measure stress and anxiety. Significant improvement in awareness and reduction in stress were observed. Regular yoga practice can contribute to enhanced self-awareness, peace and harmony, reducing stress symptoms.

Kullgren et al. (2018) examined the effectiveness of yoga and mindfulness interventions in reducing stress and improving well-being. The review analysed studies across various populations, using tools like self-reports, cortisol levels, and stress/anxiety scales. Results showed that both interventions effectively reduced stress and anxiety while enhancing emotional regulation and well-being. The study supports the benefits of combining yoga with psychoeducation for promoting psychological health.

Ottolenghi (2019) evaluated the use of yoga to manage stress and burnout in healthcare workers. A systematic review of 11 studies, including clinical trials and observational studies on yoga's effects on stress were reviewed. Various Yoga practices, including physical postures, pranayama and mindfulness were utilized. Yoga effectively improved stress and burnout indicators, with significant impacts on emotional well-being

and anxiety management. Yoga can provide mental health support for healthcare workers facing burnouts.

Salmon et al. (2019) assessed the yoga's effects on adolescent mental health, specifically on self-esteem and mood. The study included a randomized control trial with high school students (ages 14-18). Yoga sessions were held thrice weekly, combining movement and meditation. The statistics used were standard deviation and effect size for outcome measures. The results showed significant improvement in self-esteem and reductions in depressive symptoms were observed. Yoga positively impacts adolescent mental health and serves as an accessible intervention for schools.

Vaghela et al. (2019) compared the effects of yoga and aerobic exercise on premenstrual syndrome symptoms among women in their reproductive years. Sixty two participants were divided into two group, it evaluated interventions over eight weeks. Tools included the Premenstrual Symptoms Screening Tool for symptom measurement. Results indicated both groups experienced symptom relief, though the yoga group reported greater reductions in emotional and physical premenstrual syndrome symptoms, supporting yoga's role in addressing premenstrual mood disturbances more effectively than aerobic exercise.

Aloe et al. (2020) assessed the impact of workplace yoga interventions on reducing perceived stress. A Systematic review and meta-analysis of six clinical trials with 266 participants who practiced yoga at work compared to 221 in a control group was studied. Varied yoga styles and sessions were held in workplace settings. Effect size of -0.67 was observed for stress reduction. Yoga at the workplace was effective in reducing work related stress compared to no intervention. Consistent yoga interventions can significantly reduce workplace stress, potentially enhancing productivity.

Goel et al. (2020) examined Pranayama's influence on menstrual pain management and quality of life in women with dysmenorrhea. It involved a sample of 60 women, who engaged in daily pranayama and guided meditation for eight weeks. Using a pain assessment scale and quality of life measures, results indicated reduced pain and improved menstrual attitudes among participants. Findings highlighted the yoga's potential in reducing discomfort and improving emotional responses related to menstruation.

La Torre (2020) evaluated the effectiveness of yoga interventions on work related stress among healthcare workers. The study included a single arm clinical trial with 48 healthcare professionals engaging in a 30 minutes daily yoga session over four weeks. Yoga, including pranayama (breathing exercises) and meditation were provided. Pre and post intervention anxiety and stress levels were measured and there was significant reduction in stress, burnout and anxiety levels. Yoga provided an effective strategy for emotional regulation and stress management among healthcare staff, underscoring its potential for widespread occupational health application.

Sharma et al. (2020) analyzed the impact of yoga on stress, anxiety and quality of life among adolescents in India. The review included 15 studies with diverse adolescent populations, where the yoga programmes varied but typically involved a combination of asanas, pranayama and meditation. Using psychological tools such as the Perceived Stress Scale, Beck Anxiety Inventory and various quality of life measures, the review found that yoga significantly reduced stress and anxiety levels in adolescents while also improving their quality of life. The findings highlighted that yoga as an effective intervention for enhancing adolescent mental health and well-being.

Chhabra (2021) explored the use of yoga for menstrual issues like dysmenorrhea, amenorrhea and premenstrual syndrome. The study was conducted among women experiencing various menstrual disorders; the intervention included weekly 90 minutes yoga sessions with daily 20 minutes home practices, focusing on pranayama, yoga nidra, and asanas. Findings showed improved sleep quality, lower pain and reduced premenstrual syndrome symptoms. Yoga was effective in balancing the endocrine system and strengthening reproductive health, promoting overall mental and physical wellness.

Kaur (2021) assessed the effects of yogic interventions (asana, pranayama, and their combination) on menstrual attitude and lifestyle patterns in females with premenstrual syndrome. The study involved 80 females from Chandigarh, divided into four groups: yogic asana, pranayama, combined asana and pranayama, and a control group. Results showed that the combined asana and pranayama group experienced the most significant improvements in lifestyle patterns, followed by the asana and pranayama only groups. The control group showed fluctuations but no consistent improvement. Kavitha (2021) assessed the prevalence and perceived stress of primary dysmenorrhea among adolescent girls in

Salem and evaluated the effectiveness of yoga and educational interventions in managing the condition.

Kirka and Celik (2021) evaluated the effectiveness of yoga in reducing pain levels in primary dysmenorrhea among female students. The study involved 60 female students, with 30 in the experimental group and 30 in the control group. The experimental group participated in a 12 weeks yoga programme, while the control group received no intervention. Pain levels were measured using the Visual Analog Scale and Dysmenorrhea Monitoring Form. Results showed that the experimental group experienced a significant reduction in pain, while the control group showed no significant change. The study supports yoga as an effective non pharmacological intervention for alleviating menstrual pain in individuals with primary dysmenorrhea.

Sharma et al. (2022) assessed how yoga influences mental health, particularly in reducing symptoms of anxiety and depression. This systematic review analyzed 15 randomized controlled trials with adults in the age range of 18-65 years. Yoga sessions varied in duration and included postures, breathing exercises, and meditation. Standardized mean differences and confidence intervals were computed to understand the results. Yoga was associated with significant reductions in anxiety and depressive symptoms compared to control groups, with the largest improvements seen in interventions lasting 8 weeks or more. Yoga serves as an effective complementary intervention for mental health, especially with sustained practice.

Kanchibhotla et al. (2023) measured yoga's impact on reducing dysmenorrhea, focusing on pain management without pharmaceuticals. A systematic review was conducted following Preferred Reporting Items for Systematic reviews and Meta-Analyses guidelines, with studies spanning countries including the U.S., Iran, Turkey and Korea. Various yoga practices, including asanas and pranayama were reviewed, showing that yoga reduced menstrual pain symptoms more effectively than other non pharmacological approaches. Findings suggested that yoga improves blood flow, lung capacity and relaxation, enhancing quality of life for women experiencing dysmenorrhea.

Patel et al. (2024) interpreted the effects of yoga on immune and psychological health and quoted to explore yoga's effect on mental and immune health markers. The study included 10 studies with 500 participants engaged in structured yoga sessions. Yoga routines comprised of combined postures and meditations, focusing on mindfulness were

used. Analysis of variance and effect size calculations were carried out. Lower levels of cortisol and stress markers were observed, supporting yoga's role in improving emotional regulation. Consistent yoga practice benefits mental health by enhancing resilience against stress and potentially supporting immune health.

Psychoeducation

Donker et al. (2009) evaluated the effectiveness of psychoeducation in reducing symptoms of depression, anxiety and psychological distress. The analysis included multiple studies using standardized tools to assess these symptoms. The psychoeducational interventions typically involved information dissemination, problem solving skills and stress management techniques. The results indicated that psychoeducation significantly reduced symptoms of depression, anxiety and psychological distress across various populations. The study concluded that psychoeducation was an effective tool for enhancing psychological well-being and should be considered a valuable component of mental health interventions.

Goyal et al. (2014) conducted a systematic review and meta analysis to evaluate the effects of meditation programmes, which often include psychoeducational components, on stress related outcomes. Data were collected from 47 randomized clinical trials involving 3,515 participants across various settings in the United States. The researchers analyzed different stress reduction techniques and calculated effect sizes (Hedges' g) for anxiety, depression and pain. The findings indicated that mindfulness meditation programmes had a moderate impact on reducing anxiety ($g = 0.38$), depression ($g = 0.30$), and pain ($g = 0.33$) among participants. These results suggested that psychoeducational interventions incorporating mindfulness techniques can effectively improve psychological well-being and stress management in diverse populations. The study highlights the potential benefits of integrating psychoeducation into mindfulness based approaches to enhance overall mental health.

. Singh et al. (2018) examined the impact of psychoeducation on Menstrual Attitudes and Health Literacy among School Girls. The study focused on improving menstrual attitudes and health literacy in adolescent girls and used a pre test, post test design with 200 school girls, aged 12–15 years and they were administered by Menstrual Attitude Questionnaire and Health Literacy Scale. The school girls were administered by series of psychoeducational workshops covering menstrual biology, self-care and societal attitudes.

Chi-square tests for categorical data and paired sample t-tests were used. The study improved menstrual literacy and reduced stigmatizing attitudes and significant increase in knowledge. Psychoeducation promotes informed, positive menstrual attitudes, countering cultural stigma.

Kreitzer et al. (2019) assessed the effectiveness of psychoeducational interventions in improving mental health outcomes. A Comprehensive meta-analysis of clinical trials of adults with various mental health conditions was analyzed. Mental health outcome measures including The Beck Depression Inventory and the Anxiety and Depression Scale were used and Psychoeducational groups, individual therapy sessions, and online psychoeducation platforms were conducted. Random effects model for meta analysis found significant improvements in psychological symptoms were noted post intervention. Psychoeducation serves as an effective adjunct to traditional therapies for improving mental health.

Rentala et al. (2019) evaluated the effectiveness of a holistic intervention in reducing educational stress, anxiety, and depression among adolescent girls. A randomized controlled design was adopted, and the study was conducted in selected colleges in Dharwad city, India. Sixty adolescent girls were randomly assigned to either the experimental or control group. All subjects were initially assessed for educational stress, depression and anxiety using standardized scales. The experimental group received eight sessions of a holistic intervention, while the control group did not receive any intervention. Post intervention assessments were conducted at the end of the first, second and third months. The results indicated that the experimental group subjects showed a statistically significant decrease in educational stress, depression, and anxiety over the three month follow-up compared to the control group subjects. The study concluded that the holistic group health promotion programme was effective in reducing educational stress, anxiety and depression among adolescent girls.

Asgari et al. (2020) designed a randomized controlled trial to evaluate a psychoeducational intervention based on a self-regulation model for reducing menstrual distress in adolescent girls. The study, involving 120 participants from Qazvin, Iran, used tools like the Visual Analog Scale, Moos Menstrual Distress Questionnaire and Illness Perception Questionnaire. The intervention consisted of three 60 - 90 minute sessions focused on menstrual health and self-management. While the protocol anticipates positive effects on menstrual distress and self-regulation, results are not yet reported.

Chu et al. (2020) assessed the impact of psychoeducational sessions on adolescents' understanding and attitudes toward menstrual health. A quasi experimental study with 150 adolescent girls aged 13–16 years participated and attended 8 psychoeducation sessions. Menstrual Knowledge Questionnaire, The Menstrual Attitude Scale was used to gather data. Psychoeducational sessions focused on menstrual physiology, health practices and dispelling myths. Paired t tests and ANOVA were used to assess changes in knowledge and attitude. The results showed that significant improvement in menstrual health knowledge and a reduction in negative attitudes towards menstruation. Psychoeducation can effectively address misinformation, improving menstrual health and attitudes.

Gupta and Arora (2020) explored the impact of psychoeducation on adolescent attitudes toward menstruation through an experimental design with a sample of 120 adolescents (60 in the experimental group and 60 in the control group). The study, conducted in high schools in Delhi, India, used the Menstrual Attitude Questionnaire to assess changes. The intervention involved psychoeducational sessions on menstrual health. Descriptive statistics, paired t test, and ANOVA were applied to analyze the data. The findings showed significant improvement in menstrual attitudes in the experimental group compared to the control group following the psychoeducational intervention.

Ho et al. (2020) investigated how psychoeducational interventions affect psychological well-being in various populations. The Systematic Review of qualitative and quantitative studies included studies across different demographics, including adolescents and adults. Tools such as Quality of life assessments and psychological well-being inventories (e.g., WHO-5 Well-Being Index) were used. Psychoeducational workshops, seminars and online training sessions were held. Descriptive statistics and thematic analysis for qualitative data were conducted. Psychoeducation was associated with improved emotional regulation and coping strategies, leading to enhanced psychological well-being. Tailored psychoeducational approaches can significantly contribute to individual psychological resilience.

Osterman (2020) evaluated the effectiveness of psychoeducational approaches in reducing stress among adolescents. Systematic review and meta analysis of interventions aimed at stress reduction. The study focused on adolescents aged 13-19 across various

educational settings. The tools included various stress assessment tools like Academic Stress Scale and the Depression Anxiety Stress Scales. Programmes included workshops and online modules focusing on stress management. Meta analytic techniques to synthesize data from multiple sources. The review found a significant reduction in stress levels among adolescents who participated in psychoeducational interventions. Psychoeducational programmes are effective in providing adolescents with coping strategies, leading to lower stress levels.

Sharma et al. (2020) explored the influence of psychoeducation on psychological well-being across various populations. The systematic review of quantitative studies including various populations including college students, patients with chronic illnesses, and caregivers were focused. Psychological well-being scales, such as the Ryff Scales of Psychological well-being was used majorly. Psychoeducational seminars, group discussions and one on one session were provided to the participants and the data was analyzed by ANOVA and regression analysis was used to assess outcomes. Psychoeducational interventions led to improved psychological well-being and enhanced coping skills among participants. Psychoeducation is beneficial for fostering psychological resilience and well-being, emphasizing the need for its integration into mental health strategies.

Brown and Lent (2021) assessed the effectiveness of psychoeducation on stress reduction and coping skills. The quasi experimental study sampled 100 participants in a community programme involving eight psychoeducation sessions. Tools included pre- and post-intervention assessments using a stress inventory and coping scale. Paired t tests revealed significant reductions in stress and improved coping mechanisms among participants after the sessions.

Nabi (2021) determined the impact of psychoeducational interventions on stress management in adolescents by meta analysis. Studies included adolescent participants aged between 12-18 years. Tools included the State Trait Anxiety Inventory and other validated stress assessment measures. Psychoeducational programmes focusing on stress coping strategies were analyzed. Meta analytic techniques were used to aggregate data and assess effect sizes. The analysis indicated that psychoeducational interventions significantly lower stress levels in adolescents. Psychoeducation can be an effective method for improving psychological resilience among adolescents facing stress.

Patel (2021) explored the impact of psychoeducational programmes on menstrual health in rural settings of India. A community based intervention with 100 rural women aged 15-35 were included in the study. Structured interviews, focus group discussions, psychoeducation workshops focused on menstrual hygiene and health management were conducted. Chi-square tests for categorical data and descriptive statistics were utilized. Results showed significant improvements in knowledge and positive changes in menstrual practices. Psychoeducation effectively addresses knowledge gaps and promotes better menstrual health practices in rural communities.

McManus et al. (2021) assessed the effectiveness of interventions aimed at improving the psychological well-being of university students. The review synthesized evidence from multiple systematic reviews, focusing on psychoeducation and other mental health interventions. These interventions included psychoeducational workshops, peer support groups, and online resources. The effectiveness was analyzed using meta analysis and narrative synthesis. The review found that psychoeducational interventions significantly improved mental health literacy and reduced symptoms of anxiety and depression. It concluded that psychoeducation enhances coping strategies and resilience, highlighting its importance in university mental health programmes.

Rahman (2021) evaluated the effect of psychoeducational programmes on psychological well-being and menstrual health in rural adolescents. The study measured the impact of psychoeducation on psychological well-being and menstrual health knowledge. Cluster randomized study with 180 participants from rural schools, ages 13–17 years were assessed using The Menstrual Knowledge Scale, Ryff's Psychological Well-being Scale. A 6 week psychoeducation programmes covering mental and menstrual health education. Statistical analyses such as ANCOVA to control for baseline differences, Cohen's d for effect size were computed. Significant increases in psychological well-being, particularly self-acceptance and purpose in life dimensions were observed. Psychoeducation can enhance mental well-being and menstrual knowledge in underserved populations.

Tshomo et al. (2021) assessed the knowledge, attitudes, and practices related to menstrual hygiene among female students across all ten government colleges in Bhutan. A total of 1,010 participants completed a self administered questionnaire adapted from a previous study conducted with school students in Bhutan. The findings revealed that only 35.5% of participants had comprehensive knowledge of menstruation. Mothers were the

primary source of information for 50.3% of the students, and 35.1% agreed that women should not enter a shrine during menstruation. Approximately 55.1% reported that their daily activities were affected due to menstruation, and 24.2% missed college due to dysmenorrhea. Observations of college and hostel facilities indicated that 38.9% of college toilets lacked water and 77.8% were without soap for hand washing. The study concluded that there is a need for improved public health education, psychosocial support, and enhanced water, sanitation and hygiene (WASH) infrastructure to support effective menstrual hygiene management among female college students in Bhutan.

Ahmad et al. (2022) evaluated the effectiveness of psychoeducational stress management interventions in reducing perceived stress among students, including adolescents. The review included studies focused on student populations, particularly adolescents. Various stress assessment tools were utilized, such as the Perceived Stress Scale. Stress management psychoeducational programmes were assessed. Statistical analyses involved meta analytic techniques to compare intervention outcomes. Psychoeducational interventions showed significant reductions in perceived stress among adolescents. Psychoeducation can effectively enhance coping mechanisms and reduce stress levels in adolescents.

Kumar (2022) analyzed how psychoeducational interventions impact menstrual health management in college students. A controlled study with 200 college students was included, the samples were in the age range of 18-25 years. Menstrual Attitude Questionnaire and self reported health logs were used to gather data. Interactive sessions on menstrual health and hygiene practices were provided to the students. ANOVA analysis was conducted to assess differences between groups. Increased knowledge and improved menstrual hygiene practices were reported. Psychoeducation enhances menstrual health management among college students, leading to better health outcomes.

Lopes (2022) identified the most effective psychoeducational interventions for reducing anxiety in adolescents. The study followed the Joanna Briggs Institute guidelines for systematic reviews. The review included both published and unpublished studies focusing on adolescents. Various databases were searched, including Cumulative Index to Nursing and Allied Health Literature Plus, PubMed, and Cochrane Central Register of Controlled Trials. Psychoeducational interventions targeting anxiety and stress were examined. Data synthesis methods included pooling studies using Joanna Briggs Institute

System for the Unified Management, Assessment and Review of Information, with quality assessments following the Grading of Recommendations Assessment, Development and Evaluation approach. Expected results will highlight effective psychoeducational strategies to mitigate anxiety and stress in adolescents. The findings will support future research and development of multi component psychoeducational interventions.

Bhardwaj and Arora (2023) investigated the impact of psychoeducation on menstrual health literacy among adolescents. Using a quasi-experimental design, the study involved 150 adolescents aged 12-18 years. The Menstrual Health Literacy Scale was used to assess knowledge before and after the intervention. The psychoeducation programme included workshops and group discussions on menstrual health. Paired t tests revealed a significant improvement in menstrual health literacy scores following the intervention. The study concluded that targeted psychoeducation significantly enhances adolescents understanding and attitudes toward menstrual health.

Block et al. (2023) assessed how interpersonal practical guidance and mediated practical guidance influence adolescent girls' knowledge, attitudes and practices regarding the procurement, use and disposal of menstrual products. The researchers analyzed questionnaire responses from 2,384 adolescent girls in Uttar Pradesh, India, utilizing chi-square analyses and multivariate logistic regression to examine associations between the forms of practical guidance and knowledge, attitudes and practices variables. The findings revealed that receiving both interpersonal practical guidance and mediated practical guidance significantly improved menstrual management knowledge, attitudes and practices, particularly in the correct use and disposal of menstrual hygiene products. The study concluded that combining interpersonal and mediated communication is an effective strategy for delivering practical guidance on menstrual management, suggesting that future interventions should implement and evaluate these approaches to better prepare adolescent girls to confidently manage their menstrual health

Khalilzadeh et al. (2023) evaluated the impact of an educational intervention based on the Health Belief Model on lifestyle changes and the reduction of premenstrual syndrome symptoms among first grade high school girls in Urmia, Iran. The study involved 80 participants divided into intervention and control groups. Data collection included questionnaires assessing premenstrual syndrome symptoms and Health Belief Model constructs. The intervention group received four 45 minutes educational sessions via

WhatsApp, focusing on premenstrual syndrome education and symptom reducing behaviours. Results demonstrated significant improvements in knowledge, health belief constructs and lifestyle behaviours among the intervention group, alongside a reduction in premenstrual syndrome severity. The study concluded that Health Belief Model based education is an effective, low cost approach for reducing premenstrual syndrome symptoms and recommended its integration into school health programmes.

Malhotra (2023) systematically reviewed the effects of psychoeducation on attitudes towards menstrual health. A Review of 15 studies involving diverse populations, including adolescents and young adults were analyzed. Psychoeducational sessions and materials were distributed to participants. Meta analysis was conducted to assess the pooled effect size. Results indicated a positive effect on attitudes toward menstruation and overall menstrual health management. Comprehensive psychoeducational programmes can transform negative attitudes toward menstruation into more positive perceptions.

Houghton (2024) evaluated the impact of psychoeducation sessions on menstrual health among individuals from marginalized backgrounds. A mixed method study involving 120 participants, including cisgender girls and women at various stages of their menstrual health. Surveys and interviews were used to assess menstrual health knowledge and attitudes. Psychoeducation sessions focused on trauma, sexual health and menstrual health, supplemented with community resources. The study employed descriptive statistics and thematic analysis. The intervention led to improvement knowledge of menstrual health and decreased stigma associated with menstruation. Psychoeducation can effectively address menstrual health disparities by equipping marginalized individuals with knowledge and coping strategies.

Simplified Physical Exercises

Manikandan et al. (2015) investigated the effects of Vethathiri Maharishi's Yoga Techniques, including Simplified Physical Exercises, on hematological variables in diabetic patients. Forty five diabetic individuals aged 35 to 45, from Vidyaa Vikas Educational Institutions, Tiruchengodu, Tamil Nadu, participated. They were divided into three groups: Kaya Kalpa Yoga with Meditation, Simplified Kundalini Yoga with Meditation, and a control group. Hematological variables such as RBC count, fasting plasma glucose, and postprandial plasma glucose were measured. The intervention lasted 12 weeks, with regular

yoga sessions. Analysis of Covariance was utilized for statistical analysis. Findings revealed significant improvements in hematological variables among the experimental groups compared to the control, indicating the potential benefits of these yoga practices for diabetic patients.

Prathap et al. (2016) studied the effectiveness of simplified kundalini yoga on academic performance and stress management among school children aged 12–16 years at Tamil Nadu, India. A quasi experimental design with pre test and post test evaluations was employed. The intervention included Simplified Kundalini Yoga practices such as physical exercises and meditation conducted over a 12 weeks period. Academic performance was measured using school records, while stress levels were assessed using a stress questionnaire. Statistical analysis involved descriptive statistics, paired t tests and correlation analysis. The findings revealed that Simplified Kundalini Yoga significantly improved academic performance and reduced stress levels, highlighting its dual benefits for cognitive and emotional well-being in school children.

Selvam et al. (2017) investigated the effects of Simplified Kundalini Yoga on aggression and anxiety among adolescents aged 14–18 years. The study utilized an experimental research design with a control group. The intervention consisted of a 10 weeks Simplified Kundalini Yoga programme that included meditation and relaxation techniques. The Buss-Perry Aggression Questionnaire and Beck Anxiety Inventory were used to measure aggression and anxiety levels, respectively. Paired t-tests and MANOVA were employed for statistical analysis. The results demonstrated significant reductions in both aggression and anxiety levels among the experimental group compared to the control group, showcasing SKY potential for emotional regulation in adolescents.

Annapoorani et al. (2018) evaluated the impact of SKY on physical fitness and stress levels in college students aged 18–22 years in Tamil Nadu, India. The research followed pre test and post test experimental design. The intervention comprised SKY practices such as physical exercises, meditation, and relaxation conducted over an eight weeks period. Physical fitness levels were assessed using a standardized fitness test, while stress was measured using the Perceived Stress Scale. Descriptive analysis and repeated measures ANOVA were used to analyze the data. The findings indicated significant improvements in physical fitness and substantial reductions in stress levels, demonstrating the holistic benefits of SKY for young adults.

Shanthi (2019) evaluated the impact of SKY Kaya Kalpa Yoga and Simplified Physical Exercises on women with polycystic ovarian syndrome and infertility. Thirty women with polycystic ovarian syndrome, aged 20 to 30, were randomly assigned to an experimental group undergoing the intervention and a control group. The study was conducted at the Department of Yoga for Human Excellence, Bharathiar University, Coimbatore, Tamil Nadu. Tools included physiological assessments variables (e.g., BMI, hemoglobin levels) and psychological variables (e.g., anxiety levels). The intervention spanned four months, comprising daily practices of kaya kalpa yoga and simplified physical exercises. Statistical analysis involved paired sample t tests, with significance (t p=0.05). Results demonstrated significant improvements in physiological parameters and reductions in anxiety levels among the experimental group, suggesting the efficacy of the intervention in managing polycystic ovarian syndrome and associated infertility.

Valliammal et al. (2019) assessed the effectiveness of vethathiri's simplified physical exercises in alleviating posture related issues among working women. A sample of 80 female employees, aged 30 to 50, from Coimbatore, Tamil Nadu, was randomly selected. Participants were divided into two groups: an experimental group practicing vethathiri's simplified physical exercises and a control group. Data collection involved general health questionnaires and physical tests. The intervention consisted of daily vethathiri's simplified physical exercises sessions over ten months. Statistical analysis was performed using dependent means, standard deviation, and t tests, with significance set at p = 0.05. Findings indicated that regular practice of vethathiri's simplified physical exercises led to significant improvements in posture, reducing issues such as back pain and improper sitting habits among the experimental group compared to the control group.

Venkatesan and Ilavarasu (2022) investigated the impact of Simplified Kundalini Yoga meditation on the brain waves of engineering students. The study was conducted at an engineering college in South India, involving 86 participants aged 18 to 19 years. Participants were divided into two groups: the yoga group (43 participants) and the sports group (43 participants). Electroencephalogram data were collected using the Neurosky Mindwave device. During pre data collection, students in both groups sat with closed eyes for 20 minutes. In the post data collection phase, the sports group continued the same practice, while the yoga group performed Thuriya meditation for 20 minutes. Statistical analyses revealed significant differences within sessions in EEG meditation state and low

alpha state in both groups. Notably, after the intervention, the sports group showed significant differences at the end of the session, whereas the yoga group exhibited significant changes at the beginning. Additionally, baseline comparisons indicated significant differences between groups in the high gamma state and within sessions in the mid gamma state. The study concluded that SKY meditation can influence specific EEG bands, suggesting that both meditation and sports activities may promote positive health among technical students.

Priya and Sundaramoorthi (2024) evaluated the effectiveness of Simplified Kundalini Yoga on stress reduction among adolescent girls. The sample included adolescent girls aged 13–17 years, and the research followed an experimental design with a pre test and post test control group structure. The intervention consisted of Simplified Kundalini Yoga practices, including physical exercises, meditation, and introspection techniques, conducted over an eight weeks period. The Perceived Stress Scale was used to measure stress levels, and the data were analyzed using paired t tests and ANOVA for within and between group comparisons. The results showed a significant reduction in stress levels among participants practicing Simplified Kundalini Yoga compared to the control group, indicating the efficacy of Simplified Kundalini Yoga in managing adolescent stress.

Need for the enhancing Adolescent Health and Well-being

World Health Organization (1996) released a report titled Programme for Adolescent Health and Development as part of the WHO Technical Report Series No. 886. The aim of the report was to provide a comprehensive framework for addressing the health and development needs of adolescents globally. As a technical report, it synthesizes data and insights from multiple regions and studies worldwide. Tools used include a review of existing literature, programme evaluations, and epidemiological data on adolescent health. The report emphasizes interventions in areas such as reproductive health, mental health, substance use prevention and violence reduction, with a focus on creating supportive environments and policies for adolescents. The findings underline the importance of integrating health promotion, education and community based strategies to address the unique challenges faced by adolescents. The report serves as a foundational guideline for policymakers and health practitioners to develop targeted programmes for adolescent health and development.

The Centre for Development and Population Activities (2001) assessed the impact of initiatives on education, health and life skills development among adolescent girls. The study involved a sample of adolescent girls participating in Centre for Development and Population Activities programmes across various regions in India. Data collection included surveys, interviews, and programme evaluations. Tools used encompassed both qualitative and quantitative approaches to capture educational attainment, reproductive health awareness and life skills. Statistical analyses included descriptive statistics and impact comparisons. The findings indicated significant improvements in educational enrollment, reproductive health knowledge and decision making skills among participants. The study emphasized the importance of integrated programmes in fostering empowerment and improving long term outcomes for adolescent girls.

Dasgupta and Sarkar (2008) evaluated menstrual hygiene practices among adolescent girls in rural areas of India. The study involved a sample of 160 school going girls aged 12–18 years, conducted in a rural area of West Bengal, India. Data collection was performed using pretested, structured questionnaires. Statistical analyses included descriptive statistics and Chi-square tests to explore associations between hygiene practices and demographic factors. The findings revealed that 43.75% of girls used sanitary pads, while the rest relied on cloth, often without proper hygiene. Many girls lacked awareness about menstruation prior to menarche, and socioeconomic status significantly influenced menstrual hygiene practices. The study concluded that comprehensive educational initiatives and improved access to menstrual hygiene products are crucial for promoting better health and well-being among adolescent girls in rural areas.

Anthony (2011) highlighted the challenges and opportunities facing adolescents globally and advocate for policies and programmes to support their development. The report provides a global overview using data and case studies from multiple regions. The report synthesizes recommendations and examples of best practices. Statistical data were used extensively to illustrate disparities in education, health and economic opportunities. The findings emphasized the critical need for investment in adolescence, focusing on education, health services and protection from violence and exploitation. The report concluded with policy recommendations to harness the potential of adolescents as agents of change and development.

Barath Lakshmi et al. (2014) assessed menstrual hygiene awareness and practices among adolescents. Four hundred school going girls in the age range of 10 to 19 years in rural area of Tamil Nadu, India, were administered by structured questionnaires. Statistical analyses included descriptive statistics and Chi-square tests to examine the association between menstrual hygiene practices and sociodemographic factors. The findings revealed that only 46% of participants used sanitary pads, while others relied on cloth. Additionally, many girls had inadequate knowledge about menstruation prior to menarche. Socioeconomic factors and maternal education significantly influenced menstrual hygiene practices. The study concluded that targeted educational interventions and improved access to menstrual products is essential to enhance hygiene practices and promote health among adolescent girls.

The Government of India (2015) published Menstrual Hygiene Management, National Guidelines to provide a framework for improving menstrual hygiene among adolescent girls in India. The aim was to address the challenges related to menstrual health, focusing on education, infrastructure and access to menstrual products. The report utilized data and best practices from across the country. It included policy recommendations, programmatic frameworks and stakeholder engagement strategies. The guidelines are aimed at guide implementation efforts. Statistical data from prior surveys highlighted disparities in menstrual hygiene awareness and access. The findings emphasized the importance of comprehensive menstrual hygiene education, availability of safe and affordable menstrual products, and improved sanitation infrastructure. The guidelines recommended collaboration across sectors to implement sustainable solutions, particularly in schools and rural areas.

Tamil Nadu Youth Info India (2019) analyzed the challenges and opportunities faced by the youth in Tamil Nadu and offer actionable insights for policymakers and stakeholders. The report utilizes secondary data from various surveys and databases, covering the state of Tamil Nadu in India. Tools used include statistical analysis of census data, government reports and survey findings. Statistical analysis highlights key trends, such as literacy rates, employment patterns, health outcomes and gender disparities among youth. The findings underscore significant achievements in education and health but point to challenges in employment, skill development, and gender equity. The report concludes with

recommendations for improving youth engagement in economic, social, and political domains to enhance their well-being and contributions to society.

World Health Organization (2019) highlighted critical health and developmental issues faced by adolescents worldwide and propose evidence based interventions to improve their well-being. The report draws on data from global and regional surveys and studies. Tools used include reviews of epidemiological data, health reports and programme evaluations. The article synthesizes existing evidence and offers guidance for policy and programme development. Statistical analyses are presented to illustrate trends in adolescents' mortality, morbidity, mental health, substance use and reproductive health. The findings emphasized the importance of addressing preventable health risks, improving access to health care, and fostering supportive environments for adolescents. The report concludes with recommendations for investing in adolescent health as a critical component of global health and development goals.

Lysaght (2021) emphasized the challenges faced by girls and women due to inadequate access to menstrual hygiene products and education and to advocate for policy and programmatic solutions. The article draws insights from global UNICEF initiatives and case studies. Tools used include qualitative assessments and field reports. The article reviews existing evidence and case examples. The findings underscore the critical impact of poor menstrual hygiene on education, health and gender equality, emphasizing the need for multisectoral collaboration to break taboos and improve access to menstrual products, sanitation and education.

Plesons et al. (2021) reviewed the state of menstrual health among adolescents in low and middle income countries (LMICs), identify challenges and propose actionable solutions and areas for further research. The authors collaborated with organizations such as United Nations Children's Fund, United Nations Population Fund, and other global health entities. The findings highlighted key challenges: lack of awareness and education about menstruation due to cultural taboos and misinformation; significant stigma and restrictive sociocultural norms affecting menstrual practices and well-being; and limited access to affordable menstrual products, clean water and sanitation facilities. Adolescents often face barriers in managing menstruation effectively, impacting their education, health and overall quality of life. The study suggested integrating comprehensive menstrual health education into school curricula, implementing community based interventions to reduce stigma,

improving access to menstrual products and hygiene facilities, and advocating for policies supporting menstrual health in Lower and Middle Income Countries. Future research is recommended to design and evaluate scalable interventions and address data gaps in menstrual health management globally.