Chapter 5

Summary and Conclusion

Menstruation is a normative biological process marking reproductive maturation; however, its lived experience is profoundly shaped by psychological meanings and socio-cultural contexts, particularly during adolescence. For many adolescent girls, menstruation is not encountered as a neutral physiological event but as an experience embedded within silence, stigma and restrictive cultural narratives. These contextual influences often shape early interpretations of menstruation, giving rise to discomfort, embarrassment and emotional distress. As adolescence represents a formative period for identity development and health-related belief formation, menstrual experiences during this stage can exert a lasting influence on self-perception, emotional regulation and overall psychological adjustment (Chrisler & Johnston-Robledo, 2016).

Central to the menstrual experience is menstrual attitude, which reflects an individual's cognitive and affective orientation toward menstruation. Menstrual attitudes are not merely personal opinions; they represent internalised social meanings that influence how menstruation is anticipated, interpreted and managed. When menstruation is perceived as debilitating, bothersome, or shameful, it is more likely to be associated with heightened vigilance, avoidance behaviours and negative emotional responses. Conversely, viewing menstruation as a natural and manageable bodily process has been associated with healthier coping, reduced distress and greater body acceptance. Thus, menstrual attitude functions as a proximal psychological construct that shapes broader emotional and behavioural responses related to menstrual health (Marván & Vacio, 2018).

Perceived stress constitutes another critical dimension of adolescent menstrual experience. Rather than reflecting objective stressors alone, perceived stress captures the extent to which individuals appraise their life situations as overwhelming or uncontrollable (Cohen et al., 1983). During adolescence, the convergence of academic demands, bodily changes and social expectations can heighten stress vulnerability. Unfavourable menstrual attitudes may further intensify stress appraisals by amplifying anticipatory anxiety, somatic focus and feelings of loss of control during menstrual cycles. In this sense, stress is not only a parallel outcome but also an experiential consequence of how menstruation is cognitively framed and emotionally processed.

Psychological well-being provides a broader evaluative framework within which menstrual attitude and perceived stress are situated. Conceptualised as a multidimensional construct encompassing autonomy, environmental mastery, personal growth, positive relations, purpose in life, and self-acceptance, psychological well-being reflects optimal functioning rather than mere absence of distress (Ryff, 1989). Adolescents who possess adaptive menstrual attitudes and effective

stress regulation are more likely to experience a sense of agency, emotional balance and positive self-regard. Conversely, persistent menstrual stigma and stress may undermine key dimensions of well-being, particularly self-acceptance and environmental mastery. From this perspective, menstrual health, stress appraisal and psychological well-being are interlinked processes that together shape adolescents' developmental trajectories.

Menstruation serves as a recurring life event through which adolescents negotiate bodily awareness, emotional regulation and social meaning. Menstrual attitude operates as a foundational cognitive lens, perceived stress reflects the emotional appraisal of this experience, and psychological well-being captures the broader adaptive outcomes. The present study situates these constructs within a unified framework, recognising that meaningful improvements in adolescent menstrual health require interventions that address both cognitive interpretations and embodied stress regulation mechanisms. The research design, intervention structure and participant-related methodological details through which this framework was operationalised are presented in Chapter 3 (Methodology). The standardised instruments employed to assess menstrual attitude, perceived stress and psychological well-being are also described and justified in Chapter 3.

Key Findings

The statistical procedures employed to examine intervention effects across phases and groups are detailed in Chapter 4. The primary objective of the present study was to identify and compare the effectiveness of Yoga, Psychoeducation and a Combined Intervention in enhancing favourable menstrual attitudes among adolescent school girls across the before, after and follow-up phases. The findings provide clear evidence that all three intervention conditions contributed to positive changes in menstrual attitude; however, the magnitude and consistency of these changes varied across dimensions and intervention types.

Across phases, the Combined Intervention emerged as the most effective condition in reshaping maladaptive menstrual beliefs, particularly in reducing perceptions of menstruation as a debilitating event and in strengthening the view of menstruation as a natural physiological process. This pattern suggests that addressing menstrual attitudes requires both cognitive clarification and embodied experiential learning. While psychoeducation facilitated conceptual understanding and myth reduction, the inclusion of yoga practices appears to have reinforced these cognitive shifts by fostering bodily awareness and emotional regulation. The sustained improvement observed at follow-up indicates that the combined approach was not only effective in producing immediate change but also in supporting retention of positive attitudes over time.

Yoga and the Combined Intervention were found to be equally effective in reducing the perception of menstruation as a bothersome event, highlighting the role of somatic regulation in

alleviating experiential discomfort associated with menstruation. The physical and breath-based components of yoga may have enabled participants to reinterpret bodily sensations with less reactivity, thereby reducing irritation and distress even in the absence of explicit cognitive instruction. In contrast, psychoeducation alone demonstrated comparatively smaller effects on this dimension, underscoring the importance of embodied interventions when addressing symptom-linked attitudes.

With respect to the dimensions of anticipation of onset and denial of menstrual effects, the findings indicated no significant differences between intervention groups across phases. This suggests that anticipatory beliefs and denial tendencies may be more deeply entrenched or socially reinforced, and therefore less responsive to short-term interventions. These dimensions may require longer exposure, family-level engagement or broader cultural interventions to achieve meaningful change.

The secondary objectives of the study focused on psychological well-being and perceived stress. Results demonstrated that all three interventions were associated with reductions in perceived stress and enhancements in psychological well-being across time, confirming the overall effectiveness of the intervention framework. Notably, the Combined Intervention again showed a comparative advantage in stress reduction, indicating that integrating cognitive understanding with physiological relaxation mechanisms produces more robust stress-modulating effects. This finding aligns with stress appraisal models, which posit that stress reduction is most effective when both interpretive and regulatory processes are addressed.

Improvements in psychological well-being were observed across all experimental groups, particularly in dimensions related to autonomy, environmental mastery, personal growth, and self-acceptance. While gains in autonomy were similar across groups, the Combined Intervention demonstrated broader improvements across multiple dimensions of well-being, suggesting that integrated interventions may facilitate more holistic psychological growth. These outcomes reinforce the view that menstrual health interventions can extend beyond symptom relief to support positive developmental outcomes during adolescence.

Taken together, the key findings indicate that menstrual attitude functions as a central, modifiable construct, with changes in attitude preceding and supporting improvements in stress and psychological well-being. The superiority of the Combined Intervention across multiple outcomes highlights the value of multidimensional approaches that simultaneously address cognition, emotion, and bodily experience.

Theoretical Contributions

The present study makes a meaningful theoretical contribution by extending the application of the Health Belief Model (HBM) to the domain of adolescent menstrual health, an area that has traditionally received limited attention within health behaviour frameworks. While the Health Belief Model has been widely employed to explain preventive health behaviours such as screening uptake, medication adherence, and lifestyle modification, its application to menstruation - particularly as a psychosocial and attitudinal phenomenon - has remained underexplored. By empirically examining menstrual attitude, perceived stress, and psychological well-being within an intervention framework grounded in Health Belief Model principles, the study advances the model's relevance beyond its conventional biomedical focus.

Within the Health Belief Model framework, menstrual attitude can be conceptualised as a composite cognitive structure encompassing perceived severity, perceived susceptibility, perceived benefits, and perceived barriers. Prior to intervention, unfavourable menstrual attitudes observed among adolescents - such as viewing menstruation as debilitating or bothersome - reflect heightened perceived severity and barriers, coupled with limited perception of benefits associated with adaptive coping. The significant post-intervention improvements in these attitudinal dimensions, particularly in the Combined Intervention group, indicate that targeted interventions can successfully recalibrate core constructs. This finding supports the theoretical proposition that health beliefs are not static, but modifiable through structured cognitive and experiential inputs.

Psychoeducation functioned primarily as a mechanism of cognitive reappraisal within the Health Belief Model, directly influencing perceived severity and perceived barriers by correcting misinformation, dispelling myths, and normalising menstruation as a natural biological process. By increasing menstrual literacy, psychoeducation enhanced perceived benefits of adaptive menstrual management and reduced psychological barriers such as shame and fear. These shifts align with the model's assumptions that accurate knowledge and belief restructuring are prerequisites for positive health-related attitudes and behaviours. However, the comparatively stronger outcomes observed when psychoeducation was combined with yoga suggest that cognitive change alone may be insufficient for sustained attitudinal transformation in adolescence.

Yoga, particularly in the form of simplified physical exercises, contributed to the framework by addressing cues to action and self-efficacy, two constructs often underemphasized in traditional applications of the model. Regular engagement in yoga practices provided repeated embodied cues that reinforced positive bodily awareness and emotional regulation. These practices likely enhanced self-efficacy by enabling participants to experience a sense of control over bodily sensations and stress responses associated with menstruation. The observed reductions in perceived stress and

improvements in well-being among yoga participants support the theoretical extension that behavioural and somatic experiences can strengthen belief-driven health outcomes by reinforcing confidence in one's ability to manage physiological processes.

The superior effectiveness of the Combined Intervention highlights an important theoretical refinement to the Health Belief Model: optimal health belief change occurs when cognitive, emotional, and embodied components are addressed simultaneously. The integration of psychoeducation and yoga created a synergistic pathway in which belief restructuring (perceived severity, benefits and barriers) was continuously reinforced through experiential validation (self-efficacy and cues to action). This integration helps explain why the Combined Intervention produced broader and more sustained improvements across menstrual attitude, perceived stress, and psychological well-being compared to single-modality interventions.

The findings illuminate the relationship between the model's constructs and broader psychological outcomes. Perceived stress emerged as a downstream consequence of maladaptive health beliefs, supporting the view that stress appraisal is shaped by how health-related experiences are cognitively framed. As menstrual attitudes became more favourable, stress perceptions diminished, indicating that belief modification can indirectly regulate emotional responses. Psychological well-being, conceptualised as an outcome of sustained adaptive functioning, reflected the cumulative impact of improved beliefs, reduced stress, and enhanced self-regulatory capacity. This positions psychological well-being as a distal outcome within an expanded Health Belief Model framework, extending the model beyond behaviour prediction to encompass positive mental health indicators.

The study contributes to theory by demonstrating that the constructs of the model is particularly well-suited for adolescent populations, where health beliefs are still forming and are highly responsive to intervention. Adolescence represents a critical period for internalising health-related meanings and menstrual experiences during this stage can shape lifelong attitudes toward the body and health. By empirically validating the responsiveness of HBM constructs to school-based interventions, the study strengthens the model's developmental relevance.

The present research extends the Health Belief Model in three key ways: first, by applying it to menstrual health as a psychosocial experience rather than a purely biological event; second, by demonstrating the added theoretical value of integrating embodied practices to strengthen self-efficacy and cues to action; and third, by positioning psychological well-being as a meaningful distal outcome of health belief change.

Implications

The findings of the present study carry significant practical implications for school-based health promotion, adolescent mental health interventions and menstrual health education programmes. By demonstrating that yoga, psychoeducation and particularly their combination can positively influence menstrual attitudes, perceived stress, and psychological well-being, the study provides a strong empirical foundation for implementing structured, preventive interventions within educational settings.

One of the most salient practical implications lies in the integration of menstrual health interventions into the school curriculum. Schools represent a critical and accessible platform for shaping health beliefs during adolescence, a developmental period in which cognitive frameworks and coping patterns are still evolving. The study's findings suggest that menstrual health education should extend beyond the provision of biological information to include psychosocial and experiential components. Psychoeducation can effectively address misconceptions, stigma and maladaptive beliefs surrounding menstruation, while yoga-based practices can equip students with practical self-regulation skills. Such integration directly aligns with the Health Belief Model by reducing perceived barriers, enhancing perceived benefits and strengthening self-efficacy related to menstrual management.

From a mental health promotion perspective, the observed reductions in perceived stress highlight the value of incorporating mind–body practices as preventive mental health strategies for adolescents. Stress during adolescence is often multifactorial and menstrual-related stress can compound existing academic and social pressures. Simplified yoga practices offer a low-cost, non-invasive approach to stress regulation that can be delivered in group settings without specialised infrastructure. Regular inclusion of these practices within school schedules may foster emotional regulation, resilience, and improved coping, thereby contributing to broader mental health outcomes.

The study also has important implications for teacher training and school health personnel. Educators and counsellors play a pivotal role in shaping students' health beliefs and responses to menstruation. Training teachers to deliver basic psychoeducational content and facilitate simple yoga practices can ensure sustainability and scalability of interventions. This approach reduces reliance on external professionals and enhances programme feasibility, particularly in resource-constrained settings.

At a community and policy level, the findings support the strengthening of existing adolescent health initiatives in India, such as the Rashtriya Kishor Swasthya Karyakram and the Menstrual Hygiene Scheme. While these programmes primarily focus on access to menstrual

hygiene products and awareness, the present study underscores the need to incorporate structured psychosocial and stress-regulation components. By addressing health beliefs and emotional experiences associated with menstruation, Well-being such programmes can move beyond awareness creation toward sustained behavioural and attitudinal change.

Furthermore, the study's alignment with the United Nations Sustainable Development Goal 3 (Good Health and) reinforces its global relevance. Menstrual health is increasingly recognized as a critical determinant of adolescent well-being, educational participation and gender equity. Interventions that promote favourable menstrual attitudes and psychological resilience contribute not only to individual health outcomes but also to broader social and developmental goals.

Finally, the practical implications extend to mental health practitioners and counsellors working with adolescents. The findings provide evidence for the effectiveness of combining psychoeducation with embodied practices in addressing stress and well-being, even in non-clinical populations. Practitioners can adapt simplified yoga exercises and menstrual psychoeducation modules as part of school counselling, community outreach or preventive mental health programmes, thereby expanding the scope of psychosocial interventions for adolescent girls.

The study offers actionable insights for educators, mental health professionals and policymakers by demonstrating that integrated, theory-driven interventions can be feasibly implemented within school systems to promote menstrual health, reduce stress and enhance psychological well-being. These implications underscore the value of translating theoretical models such as the Health Belief Model into practical, context-sensitive strategies that support adolescent development and well-being.

Limitations

Despite its contributions, the study has certain limitations that should be considered when interpreting the findings. The absence of a no-treatment control group limits causal attribution; however, the use of active comparator interventions was ethically and contextually appropriate for a school-based population. The sample was drawn from a single geographical location and included only English-literate adolescent girls, which may restrict the generalisability of the results. Additionally, the reliance on self-report measures and the exclusion of lifestyle-related variables such as diet, sleep and physical activity may have influenced outcome variability. Finally, although follow-up data indicated sustained effects, longer-term longitudinal assessment would be necessary to establish the durability of intervention outcomes across developmental stages.

Suggestions for Future Research

The findings of the present study open several achievable avenues for future research in the domain of adolescent menstrual health and psychosocial intervention. First, future studies may adopt **randomized controlled or quasi-experimental designs** incorporating either a waitlist control or matched comparison groups in contexts where ethical and institutional constraints permit. Such designs would strengthen causal inference while retaining the school-based feasibility demonstrated in the current study.

Second, extending the **duration of follow-up assessments** represents an important direction for future work. While the present study established sustained effects at follow-up, longer-term longitudinal designs spanning multiple academic years would help determine the stability of changes in menstrual attitude, perceived stress, and psychological well-being across critical developmental transitions in adolescence.

Third, future research may systematically examine the role of **sociodemographic and contextual variables**, such as socioeconomic status, parental education, urban–rural background and cultural beliefs, as moderators of intervention effectiveness. Incorporating these variables would allow for a more nuanced understanding of differential responsiveness to yoga and psychoeducation interventions across diverse adolescent populations.

Fourth, the intervention framework may be expanded to include **additional outcome indicators** such as school attendance, academic engagement, menstrual-related absenteeism and help-seeking behaviour. These outcomes would provide objective and educationally relevant markers of the broader impact of menstrual health interventions beyond psychological variables alone.

Fifth, future studies could explore **alternative and complementary intervention modalities**, such as mindfulness-based stress reduction, cognitive-behavioural strategies or peer-led psychoeducation programmes and compare their effectiveness with yoga-based and combined approaches. Such comparative research would further refine intervention selection based on feasibility, cost-effectiveness and developmental appropriateness.

Finally, given the increasing accessibility of digital platforms, future work may investigate the feasibility and effectiveness of **technology-assisted delivery models**, including mobile applications, online psychoeducation modules or blended formats combining in-person and digital sessions. These approaches hold particular promise for extending intervention reach to adolescents in remote or resource-limited settings while maintaining theoretical fidelity to health behaviour models such as the Health Belief Model.

These directions provide a structured roadmap for advancing research on adolescent menstrual health by building directly upon the methodological strengths and empirical insights of the present study.

Final Takeaway

The present study set out to examine whether theory-guided, school-based interventions could meaningfully improve menstrual attitudes, reduce perceived stress and enhance psychological well-being among adolescent school girls. The findings provide clear and consistent evidence that such interventions are not only feasible within educational settings but also effective in addressing the psychosocial dimensions of menstrual health. In particular, the integration of yoga and psychoeducation emerged as a robust approach for fostering favourable menstrual attitudes and supporting broader indicators of psychological adjustment.

By grounding the intervention framework in the Health Belief Model, the study demonstrates that menstrual attitudes are modifiable health beliefs rather than fixed cultural dispositions. The observed changes across attitudinal, emotional and well-being outcomes highlight the importance of addressing perceived barriers, enhancing perceived benefits and strengthening self-efficacy through both cognitive and embodied pathways. The findings reinforce the view that adolescent menstrual health must be understood as a multidimensional experience shaped by belief systems, stress appraisal and self-regulatory capacity.

The study moves beyond symptom-focused perspectives and positions menstrual health as an integral component of adolescent psychological well-being. The results underscore the value of preventive, promotive interventions that are sensitive to developmental needs and socio-cultural contexts. By demonstrating the comparative advantage of integrated approaches, the study offers a theoretically grounded and practically relevant model for future school-based health programmes.

This research contributes to the growing recognition that empowering adolescent girls with accurate knowledge, adaptive beliefs and self-regulation skills can yield meaningful improvements in menstrual experiences and psychological health. The study affirms that when menstrual health interventions are conceptually grounded, developmentally appropriate, and contextually feasible, they hold the potential to support not only individual well-being but also broader educational and public health goals.