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Menstrual Issues And Its Effect On Mental Health Among Women Of Reproductive Age in Asian Countries: Systematic Review

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Abstract

Background: Menstruation is a natural phenomenon occurring in the life cycle of every woman. Many studies have shown that global women suffer from menstrual issues along with complex mental health issues associated with it. Menstruation issues not only pose physical discomfort to women, rather it hampers the mental health of a family society. The quality-of-life decreases cause low productivity and substantial economic losses to the country.

Objectives: The main objective of the study is to explore the menstrual issues and assess its effect on mental health among women of the reproductive age group in Asian Countries.

Method: A systematic literature search was carried out in four different databases using the keywords. Twelve articles were selected for the study which meets the inclusion criteria: (1) articles published between 2015 to 2020; (2) articles published in the English language; (3) meet the two outcomes of the study menstrual issues and mental health. The quantitative method of data collection was used.

Results: Among the various menstrual issues, Dysmenorrhea is the most common menstrual issue faced by young women. One or several menstrual issues are linked to numerous mental health conditions such as fatigue, depression, and anxiety in late teenage girls. Women having irregular menstruation were perceived to have high stress. 61.1% of the students with dysmenorrhoea showed depressive symptoms while only 38.9% of students without dysmenorrhoea showed depressive symptoms. Stress, social phobia, anxiety, and depression were strongly and statistically correlated with embarrassment developed from menstruation problems.

Conclusion: Building interdisciplinary triage/treatment pathways and holding educational sessions for providers and staff within a rural health resulted in an increase in screening for PPD by obstetric and family practice providers and a decrease in waiting time for evaluation and treatment of affected women.

Keywords: Menstrual issues; Menstrual problems; Dysmenorrhea; Amenorrhea; Irregular cycle; PMS; Mental health; Stress; Anxiety; Depression; Young women; Asia

Introduction

Menstrual issues in this study refer to all discomfort related to menstruation such as Polycystic Ovarian Syndrome (PCOS), dysmenorrhea, amenorrhea, menorrhagia, metrorrhagia, and premenstrual syndrome [1]. Menstrual discomfort results in the manifestation of various mental health problems including psychological distress, anxiety, stress, depression, insomnia, not able to work, and studies, alterations in behaviour, hallucinations, paranoia and many more [1].

Currently we found in our study that women are more likely to suffer from mental health issues (De Vogel and Nicholls, 2016). Mental disorder is higher in men while menstrual abnormalities are higher in women. However, there is no conclusive evidence of mental and menstrual issues. In one study, the prevalence of mood swings due to menstrual issues is 21.37%, the prevalence of depression is 17.05%, and similarly, the prevalence of restlessness is 10.52% and 10.55% anxiety [2]. Likewise, in another study, 19% of women with menstrual issues were significantly more likely to have repeated anxiety, depression, insomnia, excessive sleepiness, and pain in the last 12 months [1]. Some studies in contrast to this have opposite results stating excessive stress is the cause of menstrual abnormalities. (Eleanor and Gilbrech, 2020) similarly, another cross-sectional study had the same result that a high level of stress causes menstrual irregularity [3,1].

Therefore, it is imperative to find the concluding evidence. Furthermore, finding a consistent result regarding the physiological effect of menstrual problems will help policymakers, public health experts to outline policies, design programs, and make women-friendly places.

Objectives and rationale of study

To assess the effects of menstrual issues on mental health among women of age 15-49 in Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Brunei, Burma, Cambodia, China, East Timor, Georgia, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Laos, Lebanon, Malaysia, Mongolia, Nepal, North Korea, Oman, Pakistan, Papua New Guinea, Philippines, Qatar, Russia, Saudi Arabia, Singapore, South Korea, Solanki Syria, Taiwan, Tajikistan, Thailand, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Vietnam, Yemen.

The study will analyse the existing studies related to menstrual issues and its impact on mental health of women. The significance of our study is the study is based on Asian Countries among women of repro-

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ductive age group. To the best of our knowledge, this study will be the first study that is done among Asian countries to explore mental health issues and its effect on mental health. This study will further guide the research community to work on the most similar and common mental issues in women.

Methodology

The purpose of this research is to propose a framework to examining the mental condition of women in periods. The proposed methodology is described as the Indexes of Sample Process Scope Ranking (SPSRI). It serves to assess mental health factors in women during menstrual age, as well as serving as a guide for investigators to evaluate the efficacy of these factors on mental health. The study questions presented in Figure 1 lead the whole work. The research process is divided into 4 key steps: (1) Systematic Literature Analysis, (2) Verification and Priority of Elements, (3) Suggested Approach: (SPSRI) to determine reliability, and (4) Evaluation.

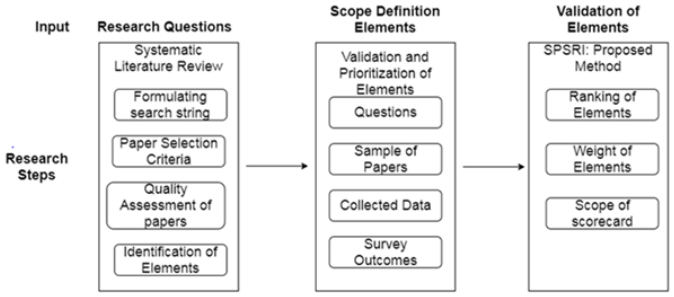

Figure 1: RQ1: What are the factors affecting the mental health condition of women in menstrual issues?

Analysis of systematic literature protocol, context elements

With respect to the RQ 1, a systematic research review on scope protection, scope classification and current factors affecting the mental health of women during the periods is carried out. The study resulted in the findings that identified factors of the range are found to calculate the reliability of meaning of the context. Consequently, by undertaking this analysis on the idea of the background of problems during women's cycles and their effect on mental health conditions. In the following analysis, we described the critical specification description factors. We examined the menstrual and mental health scope and methodology research to identify the factors.

Keywords adopted: Searching string parameters and paper classification from various sources have been used. The systematic literature search is based on the PICOS guideline. The combination of key search terms is outlined in Table 1. An example of the search strategy is also provided. Also, we will manually search the reference lists of the included studies or relevant articles to find further eligible studies.

Similar identification for study

There is lots of research done among western countries, rarely few are down to Asian Countries that has been performed on menstrual disorders and women's mental health issues. It is essential to identify problems during the menstrual cycle. Although, used different search words, IEEE Xplore, Science Direct, ACM, Springer and Google Scholar sources are extensively searched.

Table 1: Search keywords.

Number	Search Keywords
#1(Population)	"Women of reproductive age group" OR "women of childbearing age" OR "Adult women" OR Women OR "Middle-Aged Women" OR "young girls" OR "working women" OR "housewife" OR "women aged 15-49" OR "premenopausal women" OR "female medical students" OR "female college students" OR "female students".
#2(Exposure)	'Menstrual issues' OR 'Menstrual irregularities' OR 'Dysmenorrhea' OR 'menorrhagia' OR 'oligomenorrhea' OR 'irregular cycles' or 'missed cycles' or 'menstrual disorder' menstrual abnormalities, metrorrhagia, amenorrhea.
#3(Outcome)	'Mental health' OR 'Mental Wellbeing' OR 'Depression'
#4 setting	All Asian Countries (Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Brunei, Burma, Cambodia, China, East Timor, Georgia, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Laos, Lebanon, Malaysia, Mongolia, Nepal, North Korea, Oman, Pakistan, Papua New Guinea, Philippines, Qatar, Russia, Saudi Arabia, Singapore, South Korea, Sri Lanka, Syria, Taiwan, Tajikistan, Thailand, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Vietnam, Yemen).

Ranking elements

It is the best response to find the equal value of all 8 factors found. It is also very appropriate, therefore, to rank such factors on the basis of their significance in the description of the context. SPSRI's grading method is classified into 2 primary elements: rank of components and applying weight to each. As per ranking creates a rank of selection and therefore weights are allocated to achieve a relative magnitude depending on the rankings. The analysis outcome that provided the priority percentages of each factor depending on its significance percentage, were evaluated to rate the validated factors Table 2.

Table 2: Age range of women for study.

Factors	Rank	Weight
Women of reproductive age group	22	4.6
women of childbearing age	21	3.4
Adult women	17	3.2
women aged 15-49	12	3.0
young girls	10	2.7

Relevance of the concept of range. Now, using such measurements, the rankings of the factors are determined, the higher the ranking value. The table also displays the rankings of the factors from 1(most significant) to 10 (least significant).

To check the validity of the factors and their effectiveness, we find the weight and ranks of these factors. The w_i is presenting weightage of the factor and x_i is presenting the ranking. The main objective of these values is to illustrate the issues with women during the menstrual cycle and mental health Table 3.

Table 3: Mostly the Factors Mention in the Study during Menstural Issues and mental health.

Factors	Rank	Weight
Menstrual irregularities	28	4.5
Dysmenorrhea	25	4.3
irregular cycles	22	4.2
Mental health	21	4.0
Depression	18	3.7
restlessness	16	3.2
Suicide	15	3.0

Methods

The study used a Systematic Review as a study design and PRISMA flow diagram as attached in Appendix 1. The guidelines as recommended by the Center of Research and Dissemination Guidelines will be used to develop the study design and methods.

Eligibility criteria

Eligibility criteria were developed using the PICOS guidelines for the study participants, i.e., we have conducted this survey with some criteria as follows:

Population: The population for the study is women aged 15 to 49 in Asian Countries.

Exposure: The exposure for the study is menstrual issues such as Polycystic Ovary Syndrome (PCOS), dysmenorrhea, amenorrhea, oligomenorrhea, menorrhagia, metrorrhagia, Premenstrual syndrome.

Outcome: The outcome is different mental health problems, e.g., stress, anxiety, schizophrenia, depression, mood disorder, suicidal ideation, suicide, hallucinations, insomnia, Paranoia, Obsessive-compulsive disorder, behavior disorder and restlessness.

Setting: The setting for the study is all the countries in Asia. (Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Brunei, Burma, Cambodia, China, East Timor, Georgia, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Laos, Lebanon, Malaysia, Mongolia, Nepal, North Korea, Oman, Pakistan, Papua New Guinea, Philippines, Qatar, Russia, Saudi Arabia, Singapore, South Korea, Sri Lanka, Syria, Taiwan, Tajikistan, Thailand, Turkey, Turkmenistan, United Arab Emirates, Uzbekistan, Vietnam, Yemen)

Study design

The inclusion criteria for the study are all observational studies and randomized controlled trials which include menstrual issues and its effects on mental health among women of the child-bearing age group in Asian Countries. Moreover, the study will use articles published between 2015 to 2020 published in the English language. The exclusion criteria for the study are those studies which are only focused on menstrual issues or mental health issues alone. Furthermore, the study will exclude letters to the editor, various protocols, and studies missing quantitative data.

Information sources

The literature search was conducted using PubMed, Science Direct, ProQuest for Public Health, EBSCO Host and Google Scholar databases.

Search strategy

The systematic literature search is based on the PICOS guideline. The combination of key search terms is outlined in Table 1. An example of the search strategy is also provided. Moreover, we will manually search the reference lists of the included studies or relevant articles to find further eligible studies.

Study record

Data management: The article, thus selected were stored, managed, and organized by the Mendeley Reference Manager.

Selection process

After all articles are searched using various databases, PRISMA flowchart 2009 was followed for the article selection process as described below:

Step 1: The first step is to remove duplicates and that was done with the help of Mendeley software.

Step 2: The two investigators AT a and SG screened the articles based on titles and abstracts using the eligibility criteria. Those articles that did not meet the eligibility criteria were excluded from the study for their specific reasons.

Step 3: The full text of the remaining eligible articles was assessed by two independent investigators, SG and HK. Any full-text article not following the eligibility criteria was excluded with the specific reason for exclusion. Any disagreement in the selection was discussed with the third author, DC for validation of the articles.

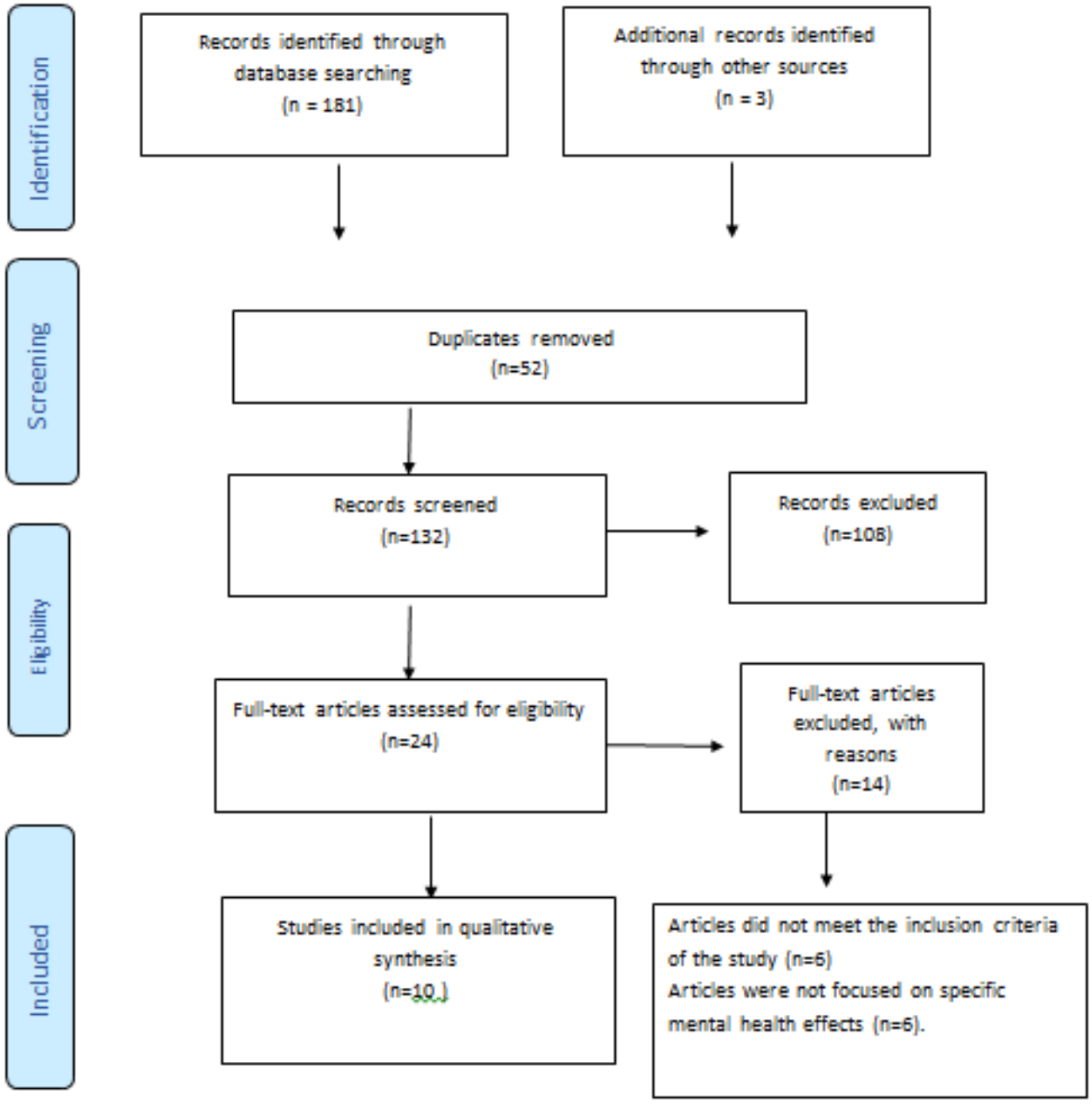

Figure 2: Prisma Flow Diagram

Step 4: The remaining articles were used for data extraction independently by two authors, AT and SG. Any disagreements were discussed with the third reviewer DC.

Data extraction sheet

A data extraction tool was developed in Microsoft Excel available version and used for data extraction.

Data items

The extracted sheet included author name, date of publication, setting, study design, sample size, and exposures such as oligomenorrhea, dysmenorrhea, menorrhagia, amenorrhea, metrorrhagia and outcomes such as anxiety, stress, depression, suicide, restlessness, hallucination, paranoia, insomnia.

Risk of bias in individual studies

Risk of bias in individual studies was assessed using a validated risk of bias assessment tool, e.g., Newcastle Ottawa scale for case-control and cohort studies. Hoy et al. Tools for cross-sectional studies and Cochrane risk of bias tool for randomized controlled trials. Furthermore, we used the JB risk of bias assessment tool for qualitative studies. Moreover, two review authors individually analyzed the quality of each study, and any disagreements were discussed and resolved with the third author.

Data synthesis

Data was selected based on the effects of menstrual issues on mental health. The results from the identified studies will be tabulated through a narrative synthesis of the findings based on the setting, exposure, and type of outcome. The inclusion of metanalysis is not planned since the difference in studies is expected due to varied population setting and various exposures. The results were reported in the context of overall quality.

Data dissemination

The data is going to be disseminated in presentations in national and international conferences and the manuscript of this study will be published in a scientific journal.

Results

One Hundred Eighty-one research articles were identified and screened from four different databases, namely, PubMed, Science Direct, ProQuest, Public Health, and EbscoHost. Additionally, three research articles were identified through different sources. And Then Fifty-Two articles were removed as a duplicate with the help of Mendeley Software. One Hundred Eight articles were excluded from the study after assessing the full-text articles. Fourteen articles were removed from the study with specific reasons as depicted in Figure 2 and ten articles met the inclusion criteria for the study.

Menstrual issues and mental health

All articles that we have selected showed there is some relation between menstrual issues and mental health, but the cause and effect relationship is not clear. However, based on the selected articles, we can conclude that menstrual issues are linked to numerous mental health conditions [4,5]. In this paper, a study about the menstrual problems of girls has been conducted in Maharashtra, India. They have conducted a survey study on the 605 sample size of girls. They have conducted the study for a year between 2013-2014 and have designed a questionnaire sample of 742. The study classified the respondents as well for the grading of the study and outcomes. A significant proportion of respondents were 18 years of age, i.e., 520 (75.7%) and the remainder was 20 years of age. The study findings concluded that one or several menstrual issues are linked with numerous mental health conditions such as fatigue, depression, and anxiety in late teenage girls [4].

Moreover, in the cross-sectional study the correlations of anxiety, depression, and somatisation with menstrual problems among 132 North Korean Women Defectors (NKWD) in South Korea the mean and range for anxiety were 44.56 in which the positive rate of anxiety was 31.0% [5]. The mean and range for depression were 19.94. The positive rate of depression was 40.0%. The mean and range for somatization were 24.93. The positive rate of somatisation was 66.7%. This shows that the psychological and reproductive health conditions of NKWD in South Korea were associated with somatization, depression, and menstrual problems.

Association of menstrual Irregularity with psychological stress

There are many articles concerning the occurrence and correlation of menstrual issues with psychological stress, however, several recent findings have explained the relationship between psychological stress and menstrual issues.

To analyse the effect on the experimentally measured regularity and duration of menstruation on depression symptoms, psychological anxiety, and psychotropic drug usage, we have found that menstrual irregularity does occur when stress. However, a varies individually. The main study involved women who did at least once follow-up survey from 2013 to 2018 (n=3,346). In secondary studies, 5,439 females have participated in using baseline data only. The usage of psychotropic medication is not substantially related to menstrual characteristics with reported depression and/or anxiety after checking the history. Signs of depression, perceived tension, and the usage of psychotropic medications revealed no correlation with the duration of the menstrual cycle [6].

In the study cited by Nazish et al., 2018 shows that menstrual problems are associated with psychological effects. The women having highly perceived stress were having high irregularity of menstruation and some with high amenorrhoea. Socio-demographic and medical features of the respondents in the analysis as per the existence of anomalies in the menstrual cycle. 14.4 per cent of respondents with menstrual irregularities were from the total respondents (n = 558). Effectiveness of irregularity of the menstrual cycle as per mental existence using just a chi-square measure, health issues, and sleeping period was compared. To assess the correlation of mental health features and sleep period with menstruation irregularity, they conducted a structural multivariable logistic regression and measured the odds ratio of 95 per cent [5].

Association of dysmenorrhea and depression, anxiety and stress

There are a plethora of articles which have described the relationship between dysmenorrhea, anxiety, and stress. Many of the articles reflect dysmenorrhea was the most common menstrual problem which has resulted in various mental health problems like anxiety, social phobia, and depression (Nilfer et al., 2018) [7-9].

It was determined that deep depression and stress rates were stronger, and the quality of life was reduced in youth with dysmenorrhea in comparison to stable monitors. Furthermore, depression and anxiety improved with the change in severity and with the rise in quality of life, psychosocial wellbeing decreased [10].

Similar results were evident in a case-control study done among university students in Eastern Turkey, the total participants in the study were 942, and 471 participants were divided into each group as cases and controls. 61.1% of the students with dysmenorrhoea showed depressive symptoms while only 38.9% of students without dysmenorrhoea showed depressive symptoms. Furthermore, the logistic regression analysis made it clear that depressive symptoms (OR: 1:87) and family history (OR:2.20) was higher among students who suffered from the most common menstrual problem which is dysmenorrhoea compared to students without dysmenorrhoea [7].

In a cross-sectional study among the Graduation College girls in India, out of 707 participants, 58.4% of girls suffered from menstrual problems in which dysmenorrhea was the most common menstrual problem. Embarrassment due to menstruation was statistically significant (Chi-square = 23.65, p = 0.000) with menstrual problems, which means participants who had menstruation problems were prone to develop Embarrassment. Stress, social phobia, anxiety, and depression were

strongly and statistically correlated with embarrassment developed from menstruation problems. This study also concluded that menstrual problems were strongly associated and correlated with mental health issues like stress, anxiety, and depression. The study also further suggests that embarrassment related with menstrual health problems leading to various mental health problems like anxiety, social phobia, and depression is the major burden which hinders girls to develop health-seeking behaviour [8]. Moreover, in a study by done among 60 adolescents with dysmenorrhea and 41 healthy adolescents found the higher the scores for dysmenorrhea, higher was the level of stress and anxiety, which means that dysmenorrhea itself affects the mental health of women [9]. The quality of life was lower leading to higher levels of stress and anxiety among the cases of dysmenorrhea compared to healthy control group.

Impact of vaginal bleeding on mental health

Among the selected articles, only two of the articles relate the relationship between vaginal bleeding with mental health. There is an elevated risk of mental development disorders in the youngest group, under the age of 24 and 75, per cent of mental disorders begin, and prodromal characteristics can begin much earlier. The preventive or early care of people aged 0 to 25 is the ideal opportunity to enhance the results of mental illnesses under a model system of clinical staging. Children and young people experience challenges to access to primary and secondary treatment, difficulties in accessing effective treatment, insufficient commitment, disparities in mental health care for children and adults, poor participation in the provision of mental health care, and absence of evidence-based medication [11]. The most technical/medical terms utilized in conjunction with the menstrual cycle were not common to any of the females. Usually, asked whether they knew about menstruation, they replied 'no, what's that? 'And' no, never'. When participants were questioned which term they will usually choose, the most frequent answer was 'period,' accompanied by 'your monthly'. This lack of awareness has also extended to menopause. Finally, the results are consistent with the rising recognition of the need to discuss sexuality, menstrual hygiene as a factor in all fields of study related to the mental health of women with intellectual disabilities Table 4 [12].

Table 4: Overall Outcomes of Research Paper

Paper Title	Year	Concept	Findings
Are Menstrual Problems Associated with Mental Health? A Cross-Sectional Study among the Graduation College Girls	2015	To identify menstrual problems associated with mental health.	Menstrual issues help for the growth of the mental problem
Mental health, psychotropic medication use, and menstrual cycle characteristics.	2018	Are characteristics of menstruation affecting mental health	Menstrual irregularities are associated with high levels of depressive symptoms and stress
Associations of mental health and sleep duration with the menstrual cycle irregularity: a population-based study	2017	Is menstrual health affecting the sleeping pattern	The sleep disorder is associated with menstrual irregularity
Prevalence of menstrual problems and their association with psychological stress in young female students studying health sciences.	2018	Are menstrual problems among females studying health sciences will be associated with academic stress?	The most common menstrual problems among female students were strongly associated with stress
The association between mental health problems and menstrual cycle irregularity among adolescent Korean girls	2016	Menstrual irregularity can cause mental health problems.	A positive association was seen.
Association between nutritional level, menstrual-related symptoms, and mental health in female medical students	2020	women are at high risk of depression than the males	Menstrual issues are highly associated with mental health.
An analysis of dysmenorrhoea and depressive symptoms in university students: A case-control study	2017	Dysmenorrhoea affects the quality of life	Depressive symptoms are found among dysmenorrhoea students.
Menstrual Disorders from Puberty to Early Adult Age: A Cross-Sectional Survey	2017	Females suffer from various mental health problems which are stressing till post menarche.	Mental stress is caused due to menorrhagia.
Dysmenorrhea increased the risk of postpartum depression in Chinese Han parturients	2019	As dysmenorrhea is anxiety in women, the article tends to find a relation of dysmenorrhoea and postpartum depression.	Postpartum depression has higher dysmenorrhoea or is more sensitive to period pain.

Assessment of anxiety-depression levels and perceptions of quality of life in adolescents with dysmenorrhea	2018	Dysmenorrhea management for quality of life.	Dysmenorrhea is associated with anxiety, depression, and quality of life.

Discussion

The systematic review focused on evidence that can establish the relationship between various menstrual issues and mental health conditions among women in Asian Countries. There are plenty of studies that are done in developed countries and have already established the negative mental health consequences of menstrual irregularities. However, this review is based on the evidence that can establish a strong correlation between specific menstrual irregularities with specific mental health conditions among women.

Of the total ten studies included in the review, six articles were rated as good quality articles after the critical analysis was done for every article. After all interpretation of the results from various studies, menstrual issues cause serious mental health threats among women [13]. The frequent mood swings during the menstrual period are well explained by hormonal fluctuations in the body. Progesterone, which is anxiolysis and sedation, decreases during periods and thus causes anxiety, aggression, and irritability [14]. Similarly, this phenomenon is also explained in another article. The frequent rise and fall in female hormones during the menstrual cycle tend to affect the respiratory, cardiovascular, and nervous system, which impairs the daily functioning, activities, and mental health of a woman [15].

Furthermore, women from Asian Countries with different social beliefs and cultures pose a severe social stigma associated with menstruation and menstrual irregularities. Apart from physical pain, during the menstrual period, an Asian woman faces severe mental health outcomes arising from various social taboos and stigma associated with menstrual irregularities. In remote areas of India, women are likely to spend a night away from home in a place where livestock are kept (Das et al., 2020).

This ill practice is also common in Far-west part of Nepal, commonly known as Chauupadi [16]. Dealing with such social stigma is not easy during the emotionally unstable period, which adds an extra burden to the mental health of women [17]. Taking into consideration the findings of the review; menstrual hygiene is also taken as a major problem in developing Asian Countries. The statement is further supported by a systematic review done among 6000 participants from 35 countries, which found that girls were hesitant and scared to go to the public toilet as they might leave a bloodstain on a toilet seat while urinating. The girls expressed being very anxious, ashamed, and tensed about their condition [18].

In a study done among 4621 women aged 19 to 54 in Korea, it was found that the perceived body form was correlated with menstrual issues. The statistical relationship between BMI and menstrual cycles was established. Women with such a higher BMI were found to have a higher rate of frequent menstrual cycle [19]. Similarly, other articles found that mental stress is substantially correlated with menopausal symptoms. The study further highlights that depression and anxiety are correlated with menopausal symptoms [20].

From the meta-analysis done by Jang and Elfenbein from 32 journal papers with 3791 participants, it was found that cycle influences have 17% higher chances for suicidal attempts, 26% deaths related to suicide, and 20% higher chances for psychiatric admission during the menstrual phase.

During menstruation, suicides, suicidal attempts, psychiatric admissions, and substance misuse occur at a higher rate than could be predicted through the menstrual period [21]. Our results find interprets that irregular menstrual cycles and PMS are correlated with the higher risk of severe mental health consequences counter to the assumptions that premenstrual depression will result in higher levels of negative health effects. The finding in our study is similar to the study of a population-based sample of 3518 women from Swiss health Survey Where, in women who reported positive for moderate Premenstrual Syndrome, the prevalence of major depression was 24.6% whereas, in women with Severe Premenstrual syndrome, the prevalence of depression was 24.6% [22].

After analysing various articles in the results section, it is evident that Dysmenorrhea has severe mental health consequences. This statement is further supported in another article by [23]. Daily activities, physical activity, education, sleep quality of a woman is greatly impacted when a woman is having painful menstruation resulting in various mental health issues such as depression, anxiety, mood disorder, stress, and anxiety [23]. Moreover, in a case-control study, the prevalence of anxiety was 44% among adolescents' girls with Primary Dysmenorrhea [24].

Women having irregular cycles were less than half as likely to suffer from anxiety disorder compared to those who reported regular cycles. Women with shorter cycles of less than 28 days have one and a half times to two times higher risk for lifetime affective disorder, lifetime substance abuse, dependence disorder, and lifetime anxiety disorder [25]. Moreover, women suffering from amenorrhea have higher levels of anxiety, depression and are less tolerant of stress when compared with women having normal menstruation [26].

Much research is lacking the appropriate evidence to link specific menstrual issues with specific mental health conditions. This systematic review was able to establish a correlation between Dysmenorrhea with anxiety, depression, stress, menstrual irregularity with psychological stress, premenstrual syndrome with depression, and suicidal ideation, PMS with major depression, amenorrhea with anxiety issues. However, one mental health condition leads to many other progressive stages of mental illness [27]. The major strength of the review is that it is focused on Asian countries, many research published earlier were either worldwide or based on Western Countries.

The social stigma arising from Asian Culture related to menstruation issues and its detrimental effect on mental health is also discussed [28]. The culture of stigma and silence is passing from generation to

generation where adolescents, girls, and women are not open enough to talk about their menstrual issues and seek medical help. This hidden public health issue puts excessive mental pressure on young adolescents to suffer silently and face various kinds of mental disorders. This research advocates banning such stigma through better education, health promotion programs, and awareness campaigns that can address menstrual hygiene and mental health problems. The health-seeking behaviour among women should be improved to modify risk factors and reduce preventable mental health conditions. When women better understand their bodies are not ashamed to speak out their conditions, the prevalence of mental health illness will significantly reduce arising from menstrual issues. The research is very insightful for the readers as it creates a positive awareness in the society and policymakers can make appropriate plans to better respond to the various kinds of mental disorders associated with menstrual issues [29].

The review is the analysis of recently published papers as the articles included in the results are derived from articles published between 2015 to 2020. However, there are some limitations in the paper, the articles that are published in the English language are included in the study, and important articles in other languages might have been missed. There is a likelihood of outcomes being subjected to reporting bias.

Conclusion

In conclusion, the finding of this research is to accumulate primary research which reflects the relationship between menstrual issues resulting from mental issues such as stress, anxiety, and depression. Besides, there is a significant association of menstrual irregularity, psychological stress, lack of awareness, and menstrual social stigma resulting in mental health problems. Significant research has been carried out into the wellbeing of women regarding menstrual issues and mental health, but the primary contribution on this issue is not focused, which reflects there is a need for further studies in future. Attention should be paid by the government to establish various counseling services in school, colleges, and universities regarding the wellbeing of female mental health. Indeed, asking about reproductive characteristics (age at menarche and menstrual irregular- clarity) needs to be an important section for any psychiatric assessment. The existence of depression, anxiety, and stress in patients with dysmenorrhea specifies the need for pieces of evidence for making and examining the efficacy of psychotherapy interventions for the cure of menstrual issues as possible ways. There is lots of evidence in the domain, but the evidence is not used in practice when intervening, which keeps the issues of mental health left and further shadows menstrual issues and its effect in mental. Menstrual health ultimately is related to mental health, it is important to first address women's menstrual health which is a major public health issues.

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