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Postpartum Depression: Prevention Strategies in South East Asia and its Possibility of Replication in Nepal

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ABSTRACT

Aims: To identify existing interventions in South East Asian countries implemented to prevent postpartum depression (PPD) and explore the possibility of replication of such interventions in Nepal to reduce it.

Methods: The paper reviewed the risk factors and preventive strategies implemented in South East Asian countries to prevent PPD.

Results: Enough actions have not been taken to address PPD despite of high prevalence in the reviewed countries (Bangladesh, India, Pakistan, Srilanka and Nepal). However, some of the interventions used such as cognitive behavior therapy, education for girls, poverty alleviation program, participatory approach for empowerment and involvement of community health workers have shown positive impact on reducing PPD.

Conclusions: The interventions used in South East Asian countries were simple in design intervention and mostly conducted through community health workers; it showed a possibility of replication in Nepal as it already has sufficient community workforces working in maternal and child health.

Keywords: interventions, maternal depression, maternal mental health, post–partum depression, prevention, south asia, strategies

INTRODUCTION

Postpartum depression (PPD) is a difficult and complex disorder that affects not only the mother but, can have adverse consequences on families as well.[1,2] It is a considerable public health problem where nearly 10-15% of women are affected after childbirth globally and are more common and highly prevalent in low and middle-income countries (LMICs).[3,4] It generates feelings of insignificance, agitation, anxiety or stress, the hopelessness that ultimately affects a woman's ability to bond with her child and care for her baby.[3]

Reports suggest that the prevalence of PPD has increased in South East Asian Countries (SEAC) over the period where Pakistan has the highest rate of PPD prevalence ranging between 28- 63.3%.[3,5] There is very little work done in addressing PPD especially in South East Asian Countries (SEAC). Thus, the paper reviewed the risk factors and preventive strategies implemented in SEAC to prevent PPD and understand the possibility of replication of such preventive intervention in Nepal to alleviate PPD.

METHODS

The study is a review of different paper that analyzed different available literature and data resources. Data for this paper were extracted from official reports, websites and peer reviewed articles. Major data were taken from Scopus, Google scholar, science direct, Medline, PubMed by using the following search terms: Depression, maternal depression,Post–partum depression, Post-natal depression, Strategies, Interventions, Prevention, South Asia published in English from the literature available from 1985 [Fig-1]. The terms were then used with country specific name as per the requirement. Initially, a total of 96 articles and reports were reviewed, out of which only 62 were selected. After a detailed review, only 51 articles met the review criteria and were used for preparing this paper. At first, the title and abstract of the study were screened based on the developed search

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strategy. Decisions of inclusion were made on the relevance and then articles were reviewed for valid method and results. This paper includes both qualitative and quantitative studies to have a broader understanding of PPD and effectiveness of interventions to address it. However, this study does not include clinical interventions used to address PPD. Therefore, no interventions on use of drugs (pharmacotherapy) have been included in the study.

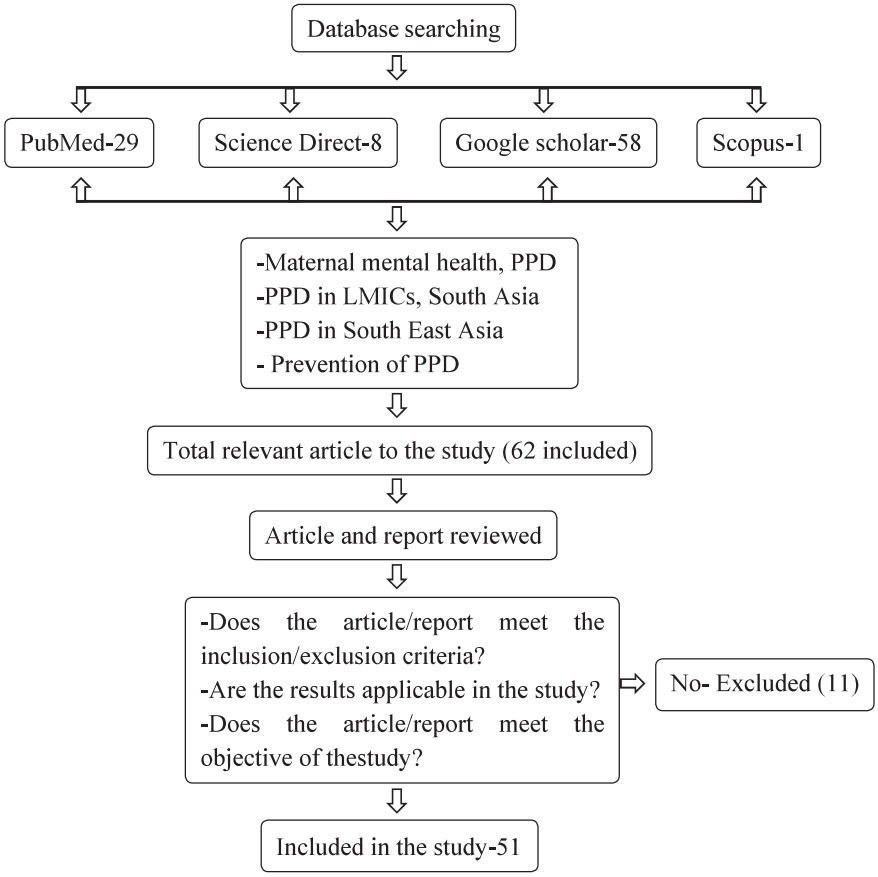

Fig-1: Flowchart for the selection of relevant articles

RESULTS

It is commonly acknowledged that mental health is a challenging subject as it is multifaceted and is highly influenced by the socio-cultural setting making it difficult to address.[3] This issue is even more serious and much neglected in LMICs where the prevalence of the mental disorder is 2-3 times higher than the higher income countries (HICs).[4] The most common form of maternal mental health issues one suffers in LMICs is depression and anxiety.[6] As depression is linked with significantly reduced quality of life, resources available and the functional capacity of a woman, the women in LMICs become more vulnerable.[7] The situation is no different in South Asia where the cultural stereotype about mental health and especially PPD in itself has resulted in under-diagnoses.[6-8]

Risk Factors:

The major risk factors identified to be associated with the onset of PPD in South Asia are low income, the birth of a daughter when a son was desired; relationship difficulties with mother-in-law and parents, adverse life events during pregnancy and lack of support.[9-11] Furthermore, a study in Nepal found prevailing risk factors on PPD as the custom of polygamy and the husband's alcoholism, stressful life events in the previous years, depression during pregnancy, multi-parity and smoking.[12-14] Similarly, a recent study conducted in Kathmandu valley presented the current age of mother, educational status of mother and father and pregnancy-induced health issues as risk factors for PPD.[12]

Similarly, cultural environment, gender bias, extended family, intimate partner violence, illiteracy, child care, low-socioeconomic status marital difficulties, immigration, and societal displacement were associated with PPD.[15] Evidence providing information on preventive interventions in SEAC was very limited. Data on PPD in countries like Afghanistan and Bhutan was scarce. However, some effort has been made to address PPD in Bangladesh, India and Pakistan. The paper discusses the different level of interventions/ preventive strategies practiced in these countries, and then it presents how these strategies can be used to address PPD in Nepal.

Prevention:

Primary Prevention:

This aims to preventing the development of depression through educating children at school regarding the realities of childbearing, parenting in media, and training for health professionals specific to maternal mental health, providing education to the couples regarding the required emotional support and possible vulnerable factors in the development of PPD.[5-7] Further, it stresses, pre-conceptual counseling for couples and advising them about the symptoms and prompt actions are the ideal method for primary prevention of PPD. aware of the symptoms developed during PPD and the required action to be taken.[16-18]

The evidence to show the usefulness of primary prevention in SEAC is very weak, as limited research has been done at this level in these countries (Bangladesh, India and Pakistan).

A randomized controlled trial in one of the parts of India found that counseling played an important role in preventing and addressing PND.[19,20] Furthermore studies from Nepal show, involvement of husbands during perinatal, especially during Ante-Natal Care(ANC) visits helps improve maternal health indicators and infant health outcome in general.[12]

Though no other interventions were found particularly on PPD, programs such as enrolment of girls in secondary school in Bangladesh and Pakistan are made rapid in subsidized amount and culturally appropriate design to sharply increase the number of females in education.[21-24] Likewise, micro-credit programs specially targeted for women in Bangladesh and Gujrat, India has shown to be effective in reducing mental illness.[25]

A randomized control trial participatory intervention in women's group to reduce postpartum psychological distress among mothers in rural eastern India significantly reduced distress among mothers.[22] However, in contrast to the findings of India, Clarke highlights the women's groups did not show any reduction in postpartum distress in rural Bangladeshi mothers.[23] The mother in the women's group identified and prioritized issues affecting the health of mothers and newborns and developed strategies to address the issues.[24] The above stated strategies can be remotely linked to the selective intervention as it targeted the one in the risk group, which were the pregnant women in this group.

Secondary Prevention:

The secondary prevention aims in reducing the duration, severity and frequency of depression.[16] This aims in detection of women who are more vulnerable to maternal mental health issues by screening for antennal and postpartum risk factors. It further discusses the approach of counseling as an appropriate preventive intervention to minimize the harmful effects of PPD such as, involving pregnant women in a midwifery group or community based general service which provides care and counseling during the whole pregnancy and afterwards period. Use of screening tools as Edinburgh Postnatal Depression System (EPDS), PHQ-9, SRQ-20 and morefor detection of depressive symptoms and referral to the practitioners for further action can be another example of secondary prevention.[10,25,26] Increasing general practice and community nursing intervention after delivery especially up to 6 months as monitoring support, information and referral can be considered as another approach of secondary level prevention.[16]

A community based cognitive behavior therapy (CBT) in Pakistan by primary health workers among pregnant women was found to be very effective in reducing the risk of PPD.[26] Furthermore, the article stated that the integration of cognitive behavior therapy-based intervention in a routine work of health workers was effective to half the rate of depression in prenatally depressed women. In addition to this, the women in the intervention not just received the symptomatic relief but also had less disability and better social functioning. The female health workers, who were trained to deliver preventive maternal mental health, worked as a community health worker in the

intervention. The mothers in the intervention group received the "Thinking healthy Programme" through the trained female health workers. The program was found to be effective in reducing women's low and moderate depressive illness to cope with mental health problem in Bangladesh.[27,28] The intervention cost under US$ 10 per woman per year, and had a recovery rate of 75% of every woman treated.[3]

The "Thinking Healthy Program" has been tried successfully in different parts of South Asia. In addition, WHO has adopted the intervention for global dissemination.[27]

However, there was no study found in these countries showing the use of screening tools as EPDS, PHQ-9 to identify women with PPD at early stages as an intervention despite of its significance in reducing the impact of PPD in one's life.[7,10]

Tertiary Prevention:

This level of prevention aims in early identification and treatment as soon as possible to minimize the level of the disability the condition can cause. This includes consistent ANC and PNC follow-up contact with women at high-risk of postnatal depression to provide support, information and effective treatment.[29-31]

The possible strategies can be the prophylactic medication, individual or couple psychotherapy, admission to inpatient facilities, parent-infant program, linking mother with supportive trained volunteers for regular home visit and involvement in self-help programs.[16]

There are numbers of institutions providing mental health services in all these three countries but there are relatively few health workers working in this area and almost no work has been done specific to early identification and treatment of PPD to minimize the level of disability the condition causes.[6] For instance, in Pakistan, out of all the patients treated in mental health facilities, 69% are females who are mostly diagnosed with neurotic, stress related and somatoform disorders (33%) and mood disorders as well (30%).[28] These figures however do not include PPD. The importance of regular follow-ups, patient counseling along with support groups at postnatal period in women is acknowledged in Pakistan. However, no attempts have been made to address it.[32,33] The condition is no different in India and Bangladesh. Bangladesh has only one mental hospital, which deals with mood disorders, and schizophrenia but there is no any specific services directed towards PPD.[34,35]

Author, year published	Title	Country	Study design and sample	Community/ hospital based	Types of prevention	Findings
Nigam et al., 2016	Postpartum depression in an Indian Community: more prevalent less addressed	India	Cross- sectional. Women of 2-6 weeks postpartum period n=100		Secondary Prevention	- It highlights the importance to screen all women for postpartum depression after child-birth in this area so as to improve maternal and child health. Furthermore, it identifies major contributing factors associated with PPD as life stress, child care stress, low social support and economic status
Gulamani et al., 2013	Postpartum Depression in Pakistan	Pakistan		Hospital based	Primary, Secondary and tertiary	- Community nurses play a vital role in promoting women's health and screening PPD. And also referring for treatment. - Patient counselling should be delivered in a cultural appropriate way.
Sidhaye and Giri, 2014	Maternal depression: a hidden burden in developing countries	South Asia	A review	Hospital and community based	Primary and Secondary	- Universal screening of mothers during pregnancy is ideal - Maternal and infant health policies, a priority in low-income countries, must integrate maternal depression as a disorder of public health significance. Interventions should target mothers in the antenatal period and incorporate a strong gender-based component - The approach must be multistranded, including research, education, community-based interventions, health service development, health system strengthening, and social policy formation

Azad et al., 2019	Prevalence and risk factors of postpartum depression within one year after nitth in urban slums of Dhaka, Bangladesh	Bangladesh	Cross-section study. The postpartum mothers with children under 1 years living in urban slums were recruited.	Community based	Primary and secondary	- The primary maternal health care staffs could be provided the basic PPD screening and its primary management training, so that they can refer the PPD cases for appropriate mental health services when needed
Yesmin et al., 2016	Community Based Psychosocial Intervention in Reducing Maternal Depression and Improving Infants Development in Bangladesh: A randomized control Trial	Bangladesh	Longitudinal RCT. Pregnant women in their last trimester were screened for depressive symptoms and were randomly assigned to either intervention or control groups.	Community based	Secondary prevention	- Psychosocial intervention is found effective in reducing women's low and moderate depressive illness to cope with mental health problem and improving development of young children in Bangladesh
Chowdhary et al., 2016	The Healthy Activity Program (HAP) lay counsellor delivered treatment for severe depression in India: systematic development and randomised evaluation	India	Randomized Controlled Trial (RCT) where participants aged 18-65 years scoring more than 14 on the Patient Health Questionnaire- 9 (PHQ 9) were recruited		Primary and secondary	- Counselling played an important role in preventing and addressing depression. - HAP was easily accepted by previously untreated population and was cost-effective. It can be used as a key strategy to reduce the treatment gap for depressive disorders, the leading mental health
Upadhyay et al., 2017	Postpartum depression in India: a systematic review and meta-analysis	India	A systematic review			- Reported risk factors for postpartum depression included financial difficulties, presence of domestic violence, past history of psychiatric illness in mother, marital conflict, lack of support from husband and birth of a female baby. - More resources need to be allocated for capacity building in maternal mental health care in India.
Thomas et al., 2017	Interventions for Mothers with Postpartum Depression: A systematic Review	America, Iran, Europe, India, Pakistan and China	Systematic review where socio-demographic characteristics, type and components of the intervention and recommendation were reviewed		Primary and secondary prevention	- Follow up practices, direct education to supporters of mothers and ensuring the availability of community resources and manpower

Dørheim et al., 2007	Factors associated with depressive symptoms among postnatal women in Nepal	Nepal	Cross-sectional study where 426 postnatal women were recruited.			Analysis showed that depression (EPDS>12) was strongly associated with husband's alcoholism, polygamy and previous depression. Other significant factors were stressful life events, multiparity, smoking and depression during pregnancy. There was a non-significant trend of lower depressive scores among women living in arranged marriages, and among women practicing the tradition of staying in their maternal home after delivery.
Giri et al., 2015	Prevalence and factors associated with depressive symptoms among post-partum mothers in Nepal.	Nepal	Cross-sectional study among 346 postpartum mothers	Hospital based	Secondary prevention	- Screening of depressive symptoms should be included in routine antenatal and postnatal care services for early identification and prevention. - Pregnancy-induced health problems and subjective feelings of stress during the last six months were significantly associated with depressive symptoms. Stressful situations during pregnancy, such as the pain response to vaginal birth, have been reported to increase the chances of depressive symptoms among post-partum mothers
Villegas et al., 2010	Postpartum Depression among rural women from developed and developing countries: A systematic review	Bangladesh, India, Pakistan, Iran, Malawi, East Turkey, Lebanon, Australia, USA	Systematic review. Data extracted from 19 articles of which 17 provided data for metal-analysis.		Primary and Secondary	- PPD may be more prevalent among rural women from developing countries compared to rural women from developed countries - psychological interventions delivered by community based primary health workers have demonstrated effectiveness in resource poor communities - Public health programs directed at rural postpartum women should include prevention, detection, and treatment initiatives. Education about depressive symptoms can reduce stigma and increase treatment seeking. Training primary health care providers to screen perinatal women for depressive symptoms may reduce prevalence and severity by detecting symptoms early and offering adequate treatment options and referrals. In addition, a broad range of options should be available to rural perinatal women including self help materials, support groups, psychiatric interventions, and counseling services addressing social isolation, perceived stress and financial hardship.
Agampodi et al., 2011	Postpartum Depression- a problem that needs urgent attention.	Srilanka	Descriptive cross-sectional study where a total of 1492 women participated			- Prevalence of PPD among the study sample was 27.1% - Economic condition and number of children were strongly associated with PPD.
Shriraam et al., 2019	A community-based study of postpartum depression in rural Southern India	India	Cross-sectional study. A total of 365 postpartum women were interviewed for this study.	Community based		It highlighted the need for health policymakers to take necessary steps to include the component of mental health in reproductive and child health program. And also the need for health professionals and workers to be trained to raise awareness and treat depression was raised. postpartum women promptly.

Clarke et al., 2014	Impact of a Participatory Intervention with Women's Groups on Psychological Distress among Mothers in Rural Bangladesh: Secondary Analysis of a Cluster-Randomised Controlled Trial	Bangladesh	RCT with 18 clusters. Nine clusters received an intervention comprising monthly meetings during which women's groups worked through a participatory learning and action cycle to develop strategies for improving women's and children's health. There was one group for every 309 individuals in the population, 810 groups in total.	Community based	Primary prevention	Participatory women's groups focused on women's and children's health had no significant effect on postpartum psychological distress in rural Bangladesh. Therefore, the intervention should be designed as per the context.
WHO and UNFPA, 2008	Maternal mental health and child health and development in low and middle income countries. Geneva:		Report of WHO-UNFPA	Community based		- Since depression can be identified relatively easily, within the context of primary health care, it is an important marker for high-risk infants. - Early treatment of prenatal and postnatal mental health problems would benefit, not only the mother's mental health, but also the infant's physical health and development
Aliani and Khuwaja, 2017	Epidemiology of Postpartum Depression in Pakistan: A review of Literature. National Journal of Health Sciences	Pakistan	Literature review		Primary, secondary and tertiary	Results suggest that women do not proactively seek help when suffering from postpartum depression due to many factors, the root cause of which is lack of awareness especially in developing countries like Pakistan. Since this ignored illness can lead to serious complications, the issue should be addressed to promote public health. f primary prevention fails, screening for timely detection should be done, however, if the diseases progresses, antidepressant compliance and effective psychotherapy are beneficial along with recommended nutrition, adequate sleep and proper exercise.
Hossain N, 2004	Access to Education for the Poor and Girls: Educational Achievements in Bangladesh	Bangladesh				- Economic opportunity demands for education. - Increased demand for girlsí education came more gradually, reflecting the changing nature of patriarchal relations in the strained and crisis-struck economy and the challenge to traditional gender relations Level of education has impact on lower fertility rates, improved health outcomes

Mullany et al., 2007	The impact of including husbands in antenatal health education services on maternal health practices in urban Nepal: Results from a randomized controlled trial.	Nepal	RCT. Currently married women attending their firs ANC visit at gestational age 16-28 weeks whose husbands were present at the hospital were the part of study. A total of 442 women were recruited.	Hospital based	Primary prevention	Women who received education with husbands were more likely to attend a post-partum visit than women who received education alone [or no education]. Furthermore, involvement of husbands during perinatal, especially during Ante-Natal Care (ANC) visits helps improve maternal health indicators and infant health outcome in general.
World Bank, 2018	Project performance assessment report, Nepal: Education for all	Nepal	A report	Community based	Primary	- Education is important in reducing maternal mortality. - Level of education has impact on lower fertility rates, improved health outcomes
Patel et al., 2017	The Healthy Activity Program (HAP), a lay counsellor-delivered brief psychological treatment for severe depression, in primary care in India: a randomised controlled trial	India	RCT where participants aged 18-65 scoring above 14 in Patient Health Questionnaire (PHQ) were recruited.		Secondary prevention	HAP was readily accepted by this previously untreated population and was cost-effective in this setting. HAP could be a key strategy to reduce the treatment gap for depressive disorders, the leading mental health disorder worldwide.
Madhani et al., 2015	Participation in Micro-Finance Programmes and Women's Mental Health in South Asia: A Modified Systematic Review	South Asia	A systematic review to identify the association between participation in micro-finance programme and women;s mental health outcomes in South Asia. 20 studies were included in the study.		Primary Prevention	Micro-finance works to improve women's mental health outcomes with increased length of participation, combined with awareness building through skill training. These programmes may lead the change towards
Rahman et al., 2008	Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial	Pakistan	Cluster- RCT. Participants were woman aged 16-45 years married and in their third trimester.	Community based	Secondary prevention	- In a poor rural community with little access to mental health care, integration of a cognitive behaviour therapy-based intervention into the routine work of community health workers more than halved the rate of depression in prenatally depressed women compared with those receiving enhanced routine care. In addition to symptomatic relief, the women receiving the intervention had less disability and better overall and social functioning and these effects were sustained after 1 year. The CBT trial had a high response and follow –up rate.

Tripathy et al.,2010	Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: a cluster-randomised controlled trial	India	Cluster-RCT. The study population was an open cohort—i.e, women could enter the study at any time during the trial period (July 31 2005-July 30, 2008) if they had given birth.	Community based	Primary prevention	Group meetings strengthened problem-solving skills, a component of psychotherapeutic interventions that has been shown to affect depression in other settings. The intervention seemed to have no effect on severe depression, perhaps because it was more similar to primary prevention rather than treatment, or because severe depression is less amenable to psychotherapeutic interventions.

Fig 1: Table illustrating the finding and results

DISCUSSION:

A cross-sectional study conducted in a maternity hospital in Kathmandu found depressive symptom to be high among the postpartum mothers. Almost one third of the participants were reported to have the symptoms.[12] Other few studies that are conducted in Nepal on PPD are either limited in aboriginal group or had a small number of samples, which were limited to tertiary hospitals.The prevalence rate of PPD ranges from 9-13% in Nepal.[36] There is a need of further exploration of situation of PPD in Nepal to highlight the fact that the government itself has no any proper strategy to address PPD.[12] However, the strategies that were approached in India, Bangladesh and Pakistan show the possibility of replication in Nepal to address PPD.

Community-based approaches are the core strategies used to address PPD in SEAC. Nepal has a strong community-based health staffs where there are nearly 51416 female community health volunteers (FCHVs) working largely in maternal and child health. In addition, there are 3803 health posts (HPs) at the periphery level providing basic maternal and basic health services.[37] FCHVs and HPs are the first point of contact for most of the women especially living in rural areas which accounts for 80% of population of Nepal and they are responsible for tracking the number of pregnant and children for immunization and providing counseling for ANC andPNC.[30] So, counseling could be provided on PPD to the pregnant couples through community level health workers as couple counseling has proven to be very effective in Nepal itself.[38] This can be one of the many strategies that can be used to address PPD. The FCHVs and staffs from HPs mostly belong to the same community where the pregnant woman is from, so he/she can have a better understanding of how conception and childbirth is contextualized and structured in ones' community.

Similarly, CBT, one of the many recommended interventions to address depression and mental health issues by MhGAP (Mental Health Gap Action Programme), can also be used in the primary health care setting which was proven to be very effective to address PPD in Pakistan.[26,27] The program used the trained female health workers to address the issue of cultural norms and stigma around mental health to make it easier which can be adapted in the context of Nepal as it already has a huge human resource working specific in the field of maternal health. One of the challenges, the community health workers may encounter in a home setting during visits may be the resistance and paranoia of family members. Therefore, a shared goal should be developed where the entire family could be involved in health promotion activities.[39] This allows woman to gain the required support from the family members and prevent any form of complication of stigma associated with PPD at least within the family.[40] Routine antenatal and postnatal checkups is one of the most advocated strategies to address maternal health in Nepal.[25,38] Therefore, these health services should be taken as an opportunity for delicate and psychologically informed mental health care especially PPD.[8] Universal screening of mother during pregnancy can be one of the effective approaches provided the feasibility and adequate availability of staff as it helps identify the mothers at risk and provides the opportunity to

provide necessary support to the mothers. Targeting on some of the risk factors of PPD, efforts including improving economic status, enhancing education, combating gender discrimination has been found to be effective to combat maternal depression as PPD.[15]

Likewise incorporating PPD in school curriculum, focusing on enrollment of girls in school, which is already one of the priorities of government of Nepal, can be other possible strategies that can be adopted to address PPD in Nepal.[41] This intervention is found to be very effective to reduce mental disorders as depression and social inequity as it increases the female cognitive, emotional and intellectual competencies.[7,19,42] These approaches can be taken as a universal approach as it targets the general public but the school based interventions need to be more specific to PPD to yield better result.[41]

Maternal and child health are priority areas in many LMICsand it is no different in Nepal, Bangladesh, India, Pakistan and other South Asian countries.[43] It is a must to integrate maternal depression in general as a public health significance to combat PPD. The targeted interventions should focus on the antenatal period and consider the socio-cultural context as well as include gender-based component for effective results.[44]

Through the analysis of various published papers, this study has come up with the evidence on some of the effective strategies used to address PPD in the SEAC countries. This study has found that the involvement of community health workers especially female health workers in culture sensitive countries as in South Asia has an important role to play in addressing PPD. For example, a community-based CBT in Pakistan through primary health worker wasfound to be effective in reducing PPD.[26,27] And above it there is increasing evidence from LMICs as Zambia, South Africa and Peru that general mental disorder as PPD can be addressed through community health workers even from lay community service providers and community groups.[39]

Similarly, addressing the risk factors such as poverty, gender issues, education etc were associated in addressing PPD through community participation especially from women. But, participatory approach in Bangladesh did not bring about any positive changes in the depression level of women.[45,46] So, it is very essential for every country to take the local evidences and contexts into account and develop strategies that are cost effective and non-defaming interventions to address a sensitive issue as PPD. Unfortunately, very few work has been done in exploring PPD and the effective strategies that can be used in these settings. Hence, there is a need of cross-sectoral or multi-sectoral approach to combat the issue. There is a need of integration of mental health services in the primary health care centers but also actions are needed to decrease poverty and violence, micro-credit programs, equal participation in education and addressing gender in-equity along with research, community-based intervention, strengthening health system and service and social policies.[47-49] Furthermore, collaboration between the government and development partners to reduce poverty and increase access to education, likely can improve maternal mental health in these settings.[39]

Based on findings it is evident that the limited research and work on addressing PPD did not allow much of a chance to explore to understand if the approaches used to address PPD were socio-culturally appropriate. However, the used approaches as use of female health workers in Pakistan, encouraging female education in a culturally appropriate way through involvement of community people can be taken as the steps taken to address the socio-cultural issue.[45]

The literature used in the study strongly suggest that community health workers play a key role in addressing PPD.[46] Nepal has been working in maternal and child health for a long time now and has strong human resources working on it with more than 50,000 female community health volunteers (FCHVs) working on improvement of maternal and child health.[36] So, involving them as the first contact point and mediator for counseling on PPD can be expected to reduce PPD as they already provide counseling on antenatal care and postnatal care.[27,50]

The results identified indicate that a minimal approach has been taken to address PPD and almost no commitment shown by government to address the issue in these countries. However, the health policies and plans play the significant role in ensuring early identification of PPD (maternal depression) and management of the condition. They provide the opportunity to isolate the one at the highest risk through health care professionals to screen maternal depression via educating patients in maternity

programs and other management approaches.[7,51] These very simple forms of interventions help in preventing unnecessary complications and costs and have substantial effect on diagnosis of maternal depression.[7,48]

There are many other forms of prevention that has not been used in the study countries, which have proven to be effective in other setting that also needs to be taken into account. The prevention strategies practices in other countries are such as debriefing, breastfeeding consideration, hormone therapy, interpersonal therapy, peer and partner support, nondirective counseling, electroconvulsive therapy, bright light therapy, omega 3 fatty acids, acupuncture and massage and exercises.[7,27,31] The approaches such as antenatal- postnatal session, classes of parenthood, peer- support group, Continuity of care and early post-partum follow up are other methods used for prevention.[10]

CONCLUSIONS:

This study has shown that postpartum depression is a major public health problem globally but the magnitude of the problem is higher in LMICs. It is not just associated with the negative effects on the mother but also has physical, cognitive and emotional development effect on a child. Though the prevalence of PPD is high in the reviewed countries, enough actions have not been taken to address the issue. Simple interventions of early detection and prevention strategies can easily help reduce the risk of PPD. The approaches of prevention can be taken in all three levels. However, mostly the strategies focused on primary and secondary level of prevention tend to have gained more effectiveness.The strategies such as couple counseling, girl's education, CBT, and income generation program and women empowerment through the involvement of community have proven to be effective in SEAC countries (India, Pakistan and Bangladesh). Considering the number of health workers working in community and periphery level, replication of the strategies used in India, Bangladesh and Pakistan seems achievable in Nepal, as it has already been working in maternal health for long with the same health workforce. The health workforce needs to be trained to raise awareness, universal screening of mothers and treat PPD promptly. Moreover, countries with maternal and child health priorities must include maternal mental health as a public health significance. Interventions to raise awareness on mental health (PPD) should have strong gender-based component. The approach to this must be multi-sectoral involving education, community based interventions, health service development, strengthening of health system and social policy formation to address PPD. Nevertheless, strong political commitment and further research is required to understand the issue and provide local context based interventions.

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