Global Women's Health (GWH)
© All rights are reserved by Ramesha Ali.

Applis Publishers

Review Article Open access

Postpartum Depression in Pakistan: Current State and Future Direction

Ramesha Ali

Department of Applied Health Sciences, Brock University, Canada

Introduction

Postpartum depression (PPD) is a multifaceted condition of both physical and emotional manifestations [1]. The prevalence of PPD is inconsistent among developing and developed countries and the large variations make a global value unreflective of its true burden [2, 3]. The overall prevalence of PPD, derived from many studies, is reported to be 13% [4, 5]. However, it is important to compare PPD among various countries to help identify risk factors. In Western Countries, PPD affects approximately 10-15% of women but this rate increases to between 28% - 63% in Pakistani women [6, 7]. The wide range is often presented to account for underreporting due to accessibility, culture, awareness, stigma, and self-shame [8]. These factors are continuously reported by Pakistani women when discussing PPD [8]. Inter-country variation in prevalence may be due to cross-cultural and diversified socio-economic situations, making it difficult to obtain a standard prevalence rate for a country [9]. This is further worsened by a lack of reliable screening tools leading to under diagnoses [10]. Prevalence can vary among regions based on factors such as availability of social support, socio economic status, education level, and child care services. However, when compared with other countries, the severe state of PPD in Pakistan is evident regardless of vague prevalence values [11]. During a comparison among Asian countries, it was reported that Pakistan's PPD prevalence amounted to 63% while Malaysia had a prevalence of only 3.5% [12]. When PPD rates between Asian and North American countries are compared, it is evident that Asian women have higher rates of PPD during and after pregnancy [10, 11]. Of the Asian countries, Pakistan has one of the highest PPD prevalence, second to Taiwan [12].

The primary classification scheme used to diagnose postpartum depression is currently the Diagnostic and Statistical Manual of Mental Disorders (DSM)-V [13]. It should be noted that Postpartum depression is not distinguished as its own diagnostic category but rather as a "major depressive disorder with peripartum onset" [13]. The inclusion of peripartum onset specifies a depressive episode as one that can occur during pregnancy as well as the four week period following delivery [14]. Patients must express five of the nine symptoms of a major depressive disorder within a two-week period to be diagnosed with depression; if onset occurs during the peripartum period, diagnoses can be narrowed to postpartum depression [13].

Symptoms of PPD can occur from one month to one year following childbirth. Although PPD affects both mothers and fathers, it is far more prevalent in new mothers [1]. PPD can partly be explained by the sudden and steep hormonal shift which occurs in conjunction to childbirth [1]. However, many factors influence its onset and biological evidence is only one small component. A defining characteristic of PPD is its interference with the mother's ability to care for the baby as well as its prolonged prevalence [1]. The general symptoms defining PPD include mood swings, feelings of sadness, anxiety, irritability, and restlessness. These symptoms are also synonymous with those occurring with "baby blues" which is a common condition that new mothers may experience the first one or two weeks following birth [7]. Symptoms unique to PPD include sadness, restlessness, guilt, unexplained weight changes, insomnia, frequent crying, irrational fears, irritability, decreased energy and motivation, and lessened feelings of self-worth [7]. Often, the symptomatic differences between "baby blues" and PPD are responsible for impeding child and self-care in new mothers. Mothers with PPD may also lack confidence in their care, feel anxious about their parenting role, may be inattentive to their infant, or be at risk of abusing their infants. The impact of PPD is not limited to new mothers and often transcends to their infants as well [7, 11].

Children of mothers with PPD are reported to be underweight, at risk of growth stunting, and experience more episodes of diarrhea [7]. They experience delayed emotional development, social deregulation, low cognitive function, and are at a higher risk of developing psychiatric problems [15]. PPD in Pakistani mothers has been associated with adverse impacts on children's mental development [15]. Physical impacts on children include stunted growth, a higher risk of delayed language, and delayed gross motor development [15]. These effects make PPD's burden on healthcare two fold as barriers to optimal health in infants can transcend into their lifetime. Such health concerns in children can hinder optimal health status in later stages of life, posing both a health and financial burden on the healthcare system.

Pakistan's disproportionate PPD prevalence rates demand a more focused approach. An array of factors which make PPD's study and magnitude difficult to adequately understand have hindered a thorough understanding and subsequent approach in reducing its burden and impact. A systematic approach to address PPD in Pakistan should be developed, however past attempts and current services have failed to effectively do this [7]. This paper will emphasize how the framework of future direction lies in Pakistan's distinct strengths and weaknesses as well as the multidimensional factors which influence it. This paper will also address each of these factors to propose a sustainable and inclusive proposal which capitalizes the country's strengths while minimizing weaknesses. The conclusions, suggestions, and key factors presented in this paper are the result of an extensive review of existing literature on Pakistan, postpartum depression, and successful initiatives implemented in other countries. A limitation encountered during this review was the

***Address for Correspondence:** Ramesha Ali, Brock University, St. Catharines, ON, L2S 3A1 Canada, E-Mail: ramesha.ali@outlook.com

Received: March 09, 2018; **Accepted:** April 25, 2018; **Published:** April 27, 2018

insufficient breadth of existing literature on PPD in Pakistan. The aim of this paper is to integrate the existing research to develop a framework for future direction.

Determinants of Postpartum Depression

The World Health Organization (WHO) broadly defines the determinants of health as social, economic and physical environments an individual resides in as well personal characteristics and behaviors. Factors such as education, sex and health services are also included among these determinants [16]. The study of PPD in Pakistan is not exempted from these determinants; previous research has consistently and extensively highlighted the influence of such factors on the risk and prevalence of PPD. Several of these reoccurring determinants will be explored further in relation to their respective importance and role in future direction.

Education

A decreased level of education among women has repeatedly been associated with increased risk of PPD. This association is particularly amplified in Pakistan as the literacy rate is severely low. The WHO reported the literacy rate to be only 54.2% overall and 45% for women alone [7]. The majority of women with prolonged postpartum depression in Pakistan are illiterate, only 10% have primary education, and 2% have a graduate education [8]. A substantially low literacy rate can also have secondary repercussions as education levels can influence accessibility and health seeking behaviors which may in turn influence PPD prevalence [6]. Furthermore, women with low education and income are less likely to take prenatal vitamins and many are not aware of any postpartum care available to them [17, 18]. Among several studies investigating PPD in Pakistan, most of the women lost to follow up had significantly less education than their counterparts that enrolled for the full duration of the study [17]. The large variation in PPD prevalence can partly be explained by the variation in education levels. Rural areas are associated with a decreased literacy rate and a higher rate of PPD while the opposite is true for urban areas [8]. The impact of education is not limited to new mothers, education level among fathers also influences maternal PPD. A decreased level of paternal education is associated with an increased risk of PPD in both the mother and father [19]. Lastly, an increased level of education is reported to increase social capital which may increase the capability of women to cope with their social environment [20].

It is evident that a lack of education impacts women's health in several ways, thus, a successful intervention requires a health awareness component. Although addressing an entire country's literacy rate is difficult when focusing on PPD, a small scale improvement in health knowledge can still impact behaviors such as taking prenatal vitamins and knowing where to access services and programs. Much of the lack of knowledge observed in new mothers is in regards to their condition, belief in alternative non-trained providers, and in some cases, attribution of symptoms to "magic" [21]. All of these factors highlight accessibility concerns based on the current knowledge of patients. Health literacy is very low, especially among women and a shift in population perception is required to ensure sustainable health seeking behaviors [18]. These are attainable factors if strategically incorporated into future initiatives as small scale educational programs can alleviate such localized misconceptions.

Culture

It is important to identify the role of culture as an important factor in both pregnancy and the postpartum period as it provides significant context to the conditions which may lead to PPD. Culture is defined as the shared context of human experiences, comprised of shared ideas, perspectives, cognitive styles and standards for emotional and behavioral responses [9]. This definition indicates that culture may be responsible for how women experience and express PPD, as well as how they ask for both physical and emotional support [9]. Thus, it is difficult to rely solely on standard diagnostic measurements as they may not be receptive to the role of culture. This can also partially explain the vast difference in reported prevalence among countries of the same continent [9]. For example, in some cultures, following delivery, attention and care of family is cast upon the baby rather than the mother who may feel neglected [22]. In other cultures, an emphasis is put on the mother and her physical and emotional needs and transition [22]. It was reported that in rural areas, the focus was more on the mother in comparison to urban areas [22]. This highlights the need to develop a culturally sensitive initiative as it can be more receptive to diagnosing, studying and addressing PPD in Pakistan's context.

When studying the effect of culture on PPD, it is also important to note differences between collectivistic and individualistic cultures as they influence relationship dynamics which can be pertinent to new mothers [23]. Pakistan is largely considered a collectivist country with increased emphasis in rural areas [23]. Values such as emphasized familial goals over individual motives or needs are included in this culture [23]. The key role played by family is one of the most significant manifestations of Pakistan's collectivism [23]. Even with the varying extent of collectivism, noted by increased emphasis in rural areas, the central place of family and its importance is constant [23]. In regards to PPD, collectivism offers a protective role [12]. The presence of female relatives or community members is repeatedly addressed as a source of support, comfort and reliability for new mothers [12]. Community support apart from direct family relatives has also been indicated to help women cope with the postpartum period [12]. It is also noted that many biological influencers of PPD are rooted in cultural practices; many cultural foods are high in riboflavin, omega-3 fatty acid docosahexaenoic acid (DHA) and have a high glycemic index [12]. Such supplementation is associated with a decreased risk of PPD as it provides sustainable energy, helps in growth and healing, and thus improve a women's overall well-being during the postpartum period [12].

In contrast, many women also indicate that culture is one of the factors which discourages them from preventative accessing care, as well as conservative values and family traditions [18]. In many women's experiences, they were encouraged to rely on traditional home remedies in comparison to their husbands who availed medical care more often [18]. The most prominent and well mentioned cultural practice in regards to childbirth is currently the chila [7]. This practice involves the first 40 days following birth and encourages new mothers to rest and avoid housework. The primary intent is for the new mother to rest, heal and be free of household burden [7]. However, women often indicate that they feel restricted from this practice and their limited roles within the house which further exacerbates stress and depression [7]. Furthermore, if a custom or tradition is considered culturally appropriate and thought to support and protect the new mother, women who do not feel comfortable with it may be reluctant to challenge it [11]. Cultural practices also influence treatment and care plans as some women may be recommended to rely on traditional remedies and treatment before professional medical care [9]. Cultural practices often involve the women taking part in custom, being accompanied by other female relatives, or strictly resting [7]. In many instances, women feel pressured to confo-

rm to these practices and subsequently feel overwhelmed.

The diverse and rich presence of culture in Pakistan makes it a valuable target for developing future intervention. The presence of community support and comfort can be utilized to present a program which new mothers are comfortable with and more likely to engage with. A basic understanding of Pakistani women's cultural beliefs, values, and practices will enable a holistic and receptive package which restores functionality by utilizing coping mechanisms within a community-based culture (community support), available services, cultural and political-security, as well as available human resources [16].

Family Dynamics

Family dynamics include relationships with in-laws, spousal interaction, as well as family involvement and behavior towards the new mother [7]. The influence of family dynamics occurs at several tiers. Pakistan largely practices a join-family system where women live with their husband's family after marriage. With some exceptions, this system is generally reported to be a mediating factor against PPD [7]. Women report comfort in this system as they have physical help as well as emotional and social support [7]. Prominent protective factors include relationships that provide social support in the form of emotional, informational, and material/tangible assistance [5]. This includes both proximal (e.g., father of baby, family, friends) and distal sources of support (e.g., community-based services) [24]. These factors can alter the developmental trajectory of depression by buffering against stress [25]. Furthermore, in more than one study, nuclear families, as those solely comprised of the mother, father, and their children, were regarded as risk factors of PPD due to limited social support [7, 24]. Studies have also reported that nuclear families contribute to PPD due to feelings of isolation experienced by the mother [7].

In terms of spousal relationships, marital dissatisfaction and women unaccompanied by their husbands are at a higher risk of PPD [24]. Unaccompanied women include those whose husbands are employed away from home or whose husbands have more than one wife [8]. A positive correlation is reported between paternal involvement and maternal well-being after the birth of a child. The mere presence of the father is not a protective factor, but rather it his is involvement in child care which is strongly associated with maternal well-being. This is further strengthened by the fact that depressed mothers report less spousal support [26]. Although poor social relationships with both husband and in-laws are strongly related to depression, spousal relationship is a stronger indicator. Factors which strain spousal relationships include extramarital affairs, physical and verbal abuse, not spending enough time with the family and putting unnecessary restriction on women [24, 20].

Negative influencers related to family and the father's role include the mother's reluctance to share her problems with family due to stigmatization of depression as well as feelings of unhappiness with the birth of a child. Many families prefer the birth of at least one male child to carry on the family and provide support [27]. Many women report the presence of gender bias during the delivery of a female baby and become stressed when the family is not as content [27]. The risk of PPD is further increased with every subsequent birth of a female child [27]. Women have reported that the burden of a female child increases due to family involvement and feelings/ remarks of relatives [8]. However, these findings are sparse in comparison to those that emphasize the protective and supportive

Due to the close presence of families, an invaluable source of support can be utilized in future initiatives. New mothers experience increased support from the family when the well-being of the baby is involved [19]. Families often unite and encourage interventions when tangible outcomes of infant health are involved. Therefore, for successful interventions it is important that treatment or intervention be conceptualized using shared goals that family members can support, such as tangible measures of child health (i.e. birth weight) [19]. By encouraging other caregivers and family members to participate in the intervention, maternal accessibility and adaptability to the intervention can be increased. Many interventions targeting the mother-infant dyad can be delivered in a manner which engages other members of the family or community towards a shared goal (i.e. infant health) [28, 29]. This can also improve paternal involvement and indirectly prioritize maternal well-being in regards to PPD.

Economic Stability

Decreased economic stability is consistently associated with an increased risk of PPD [30]. A limited family income directly impedes access to adequate care. This is further exacerbated by Pakistan's healthcare system which is currently divided into a private and public sector [17]. The private sector involves direct payment for the health services and programs offered. In contrast, the public sector is funded by the government and often utilized by individuals financially restricted or those living below the poverty line. Apart from the monetary values associated with care, both systems encompass significant differences in the quality of care provided [17]. Public hospitals are often understaffed, overcrowded and associated with a decreased level of care [17]. Infection control is limited in relation to private hospitals and access to specialized care is riddled with long wait times and inaccessibility. New mothers with financial limitations often engage with the public healthcare system and do not receive the highest attainable care. Furthermore, many rural areas, which are also associated with a higher prevalence of PPD, do not have easily accessible services, and the cost of transportation further worsens the burden of healthcare [18].

As mentioned previously, women are often referred towards traditional home remedies and care may be provided by females in their community [18]. In relation to this, the cost of private healthcare is often steep and unattainable for many women. The often intangible nature of PPD further leads many families to disregard the need for professional care, making it hard to justify health expenses. Lastly, as much of Pakistan's population lives below the poverty line, necessities such as rent, food, and child care often take priority over maternal health.

The presence of community women involved in maternal health, as well as the financial hardships and dependence suffered by women, offer two driving factors to be incorporated into future direction. The comfort new mothers find in familiar community women as well the availability of these women gives them a key role in any initiative targeting PPD. Furthermore, the association between income and PPD care highlights the need to make future programs financially sustainable and accessible [31]. Women's empowerment should also be a focus of new interventions or policies as it can lead to increased education and financial independence [21]. This may help in instances where household violence and lack of decision-making power contribute to postpartum depression [30]. PPD is higher in low-income populations and especially among those with a lower literacy

rate. Both of these factors are further exacerbated when government resources and care is also limited within these populations [21]. This highlights the need for community-based training of non-physician individuals in order to develop a sustainable health initiative that can be implemented in both rural and urban areas.

Current Resources, Programs, and Services

Current Healthcare System

The burden of disease has been increasing in Pakistan but the limited resources allocated towards healthcare have not been able to adequately counter this (Mustafa et al., 2016). The inequities present between the public and private health sector have widened the health gap between those who are more educated and wealthy and those stricken by financial burden and illiteracy [31]. Due to the stark differences in care provided between these hospitals, there has been an inconsistent focus on prevention and education in regards to mental health.

In addition to the higher quality of care associated with paid services, the current problem also arises from imbalances between primary, secondary, tertiary and quaternary levels of care in Pakistan [31]. The primary care level is saturated with patients with secondary care level health problems. This prevents primary care physicians from focusing on delivering high-quality primary care; in such a state, a focus on disease prevention and health promotion is overlooked [31]. This is concerning as resources and personnel which can potentially help mental health patients are diverted towards more tangible conditions [31]. A holistic approach required to ensure delivery of high-quality healthcare is lacking. Financial resources are largely spent on hospital-based services which limit funds required to sustain primary care services in the country. This is detrimental to underserved rural areas [32]. Furthermore, research is mainly done at private hospitals and cannot be extrapolated or implemented in primary care settings or generalized to the local population as the patient pools are vastly different. The private healthcare system is largely unregulated but still associated with a better standard of care, however, it is not accessible to everyone due to its expenses [31]. The government has also decreased contribution to public healthcare services, thus increasing out of pocket expenses for the general public. The current healthcare system is a result of care disparity and variation, financial allocation, and limited generalizability of research. These are important aspects when evaluating services and care available for women dealing with depression [31].

The disparities present in monetary funds present in each health sector are detrimental to those already at risk of PPD, as these women are often below the poverty line, illiterate, and lack independence [17]. These women are further disadvantaged in light of overall government spending. Compared to the United States and Canada, the government allocated health expenditures in Pakistan are very low, and paired with high rates of maternal, neonatal, and infant mortality. Less than 0.5% of health expenditures are devoted to mental health, leading to scarce statistics of the true burden of PPD [7].

An evaluation of the current healthcare system as well as the financial component associated with care emphasizes the need to address financial accessibility in new initiatives. The lack of funding towards mental health as well as systematic disadvantages make financial sustainability a pillar of new interventions. As health resources are sporadic between various developed and developing areas, local resources should be utilized to provide an economic, versatile, and easily transferable program. This can effectively alleviate the ignorance and disregard encountered by PPD in Pakistan's current system.

The Use of NGOs

In some areas of the country, non-governmental organizations (NGO) have been utilized by the government in attempts to improve access and quality of care [33]. To obtain maximum benefit and efficiency from limited funding allocated to maternal health, the government often distributes funding to NGOs who are then responsible for providing improved access, quality, and equity in care [33]. This is done so that care can be better adapted to individual regions and to alleviate burden on the government. Contracting out maternal, newborn, and child health (MNCH) access to non-governmental organizations (NGO) is becoming more prevalent in Pakistan [33]. Contracting out involves a formal agreement between the government, as the financer, and a private sector for a mutually agreed set of services, in a specified location and over a defined period of time. This is done to increase access to health services in remote areas where government capacity is not sufficient [33]. Although it is a government initiative in the right direction, NGO contracts can be improved to better address PPD care. NGO facilities have higher utilization of care compared to government-managed facilities as well as better quality of MNCH services [33]. However, although utilization at a national level has shown a positive increase, individuals accessing such services are not reflective of the overall population of Pakistan. NGO utilization is higher for individuals with increased socioeconomic status in terms of finances and education specifically [33]. MNCH services through NGO facilities are associated with higher out-of-pocket expenses, greater transportation costs, and charges for additional diagnostics [33]. This severely disadvantages women dealing with postpartum care, especially as their condition is worsened by poverty and low education level [34]. Accessibility concerns highlighted by patients include greater physical distances, inadequate transport, and low demand for facility-based care in non-emergency settings [33]. These barriers again impede access to adequate maternal care for uneducated women residing in rural areas, a subpopulation affected the most.

The benefit of NGOs should not be entirely diminished as they are associated with a higher focus on awareness of preventative health measures. Therefore, NGOs are beneficial but do not sufficiently help those who are already at a greater risk of neglected care. A distinguishing and positive quality associated with them is increased focus on primary care in terms of prevention. Beneficial aspects from NGOs can be utilized in government facilities and are also a sustainable option for areas which do not have government outreach [33]. The use of NGOs did alleviate PPD burden in underserved areas as well as in terms of dissemination of mental health knowledge and awareness [33]. As NGOs are local and better adapted to communities, new mothers may experience familiarities with the services and staff, further increasing the likelihood of positive health seeking behaviors through the NGO [35].

Current Services

The Thinking Healthy Program is an evidence-based approach which enables community health workers to reduce PPD through evidence-based cognitive-behavioral techniques. It is currently implemented in several locations in Pakistan and aims to reduce both maternal depression and its negative impact on child development in resource-poor settings [16]. It is one of the most sustainable and well-

developed initiatives targeting PPD in Pakistan. The program provides a thorough framework to build upon to further enhance cultural receptiveness and meet the needs of women in Pakistan [16]. The most prominent characteristics of the Thinking Healthy Program include its use of both the new mother's husband and family as support. The intervention is also delivered by local community health workers who are both influential and resourceful in the community and can help women and their families mobilize community resources [16].

Through an agenda of effective child-rearing, the intervention also gently challenges gender stereotype and encourages fathers to play an active role in supporting the mother in child care and interaction [16]. This is paramount as paternal involvement is associated with increased maternal health [26]. The program has also resulted in improved infant health in addition to maternal health. These benefits are compatible with cultural norms as the intervention utilizes the child as the center of the intervention with the mother and father working together with the 'lady health workers' (LHW) [36]. The Thinking Healthy Program defines lady health workers as community health workers who are trained to deliver the intervention [37].

Improvement in depression is reported to be the greatest for women with household debt prior to taking part in the Thinking Healthy Program, through the lady health workers support, many of these women are able to improve their circumstances. This is a crucial component to the Thinking Healthy program as it encourages financial independence and support. It is important to target financial aspects such as household debt and a lack of financial empowerment as they are associated with a higher rate of postpartum depression [35]. The intervention given to women is extremely important as it empowers them to seek current resources in the community. It also makes them knowledgeable of the support available to them, making them more likely to access it [36].

Mothers who are part of the program also have improved knowledge of social support available to them as introduced by the lady health workers. By involving the mother's family, husband, and lady health workers, effective agents of change are established which enable the intervention to provide mental healthcare at the doorstep to an increased proportion of women [28]. The Thinking Healthy program encompasses many of the strengths present in Pakistan's culture and maternal population. The use of lady health workers, family dynamics, increase in financial empowerment, as well as a focus on child health have made it an effective intervention that is now being adopted by the World Health Organization for global dissemination [28]. These factors should consistently be incorporated in future interventions targeted at alleviating PPD in Pakistan.

Future Direction

As mentioned in the beginning, the framework of future direction lies in Pakistan's distinct strengths and weaknesses as well as the multidimensional factors which influence it. The goal is to capitalize Pakistan's strengths by developing initiatives that can work to alleviate the burden of postpartum depression while minimizing weaknesses. While the Thinking Healthy Program has been successful, advancements and additional components to the program can further strengthen a targeted approach. This can be done by developing a community-based program which utilizes lady health workers from the local community. NGO services can be utilized to organize lady health workers, train them, and equip them with evidence-based resources to continuously provide care in the community. Interventions can administer cognitive behavior therapy based on the infant-child dyad. The direct involvement of infant health within the intervention can lead to increased acceptance of the program within the community, thus increasing maternal involvement and healt. Due to tangible outcomes of infant health, a program targeting both infant and maternal health will result in greater acceptance and participation than a program solely targeting maternal health. It is therefore important to not isolate maternal health when aiming to improve postpartum depression among Pakistani women. The program can be provided in community centers, local mosques, or group areas where community members can gather and partake in the intervention together. The intervention should be directed at the mother and father collectively. This has a two-fold benefit as both paternal involvement and paternal education are improved to better address the care needs of the mother and child.

By establishing the intervention among community members, social support and inclusion are improved. Furthermore, participation in the intervention is normalized and the benefits of Pakistan's collectivist culture are capitalized. The mother-infant dyad also ensures that tangible outcomes are emphasized to raise acceptability among community and family members for the intervention. These outcomes can include preterm birth, decreased birth weight, and increased episodes of diarrhea, all factors increasingly prevalent in infants of women with PPD [19]. Furthermore, community sessions targeted at PPD can provide information and knowledge in regards to symptoms, health behaviors, accessibility, awareness, and tools to decrease isolated impacts of PPD. The community aspect directed at both mothers, fathers and their baby can potentially improve family dynamics by emphasizing a collective goal to work towards.

The use of community-based lady health workers provides significant benefit in regards to financial stability and sustainability as well as increased access to new mothers in rural areas. A sense of familiarity and reliability within the new mothers will increase their engagement with the lady health workers. Furthermore, lady health workers are also quicker to train, more economical in terms of employment and easily mobilized among different communities. However, this also presents an innate barrier in the approach as the lady health workers administering the intervention are also subjected to the same family and cultural roles and obligations. This can be countered by training an abundance of lady health workers so their role is not burdening and remains flexible.

Cultural continuation between the community workers and new mothers will ensure that programs and interventions do not conflict new mothers between their health needs and cultural norms as all interventions will be culturally sensitive. Integration of cultural knowledge and content into the delivery of programs includes interventions targeted at social and economic difficulties faced by mothers and families, cultural norms surrounding concepts of infancy and child-care practices. The inclusion of cultural norms surrounding the concepts of infancy and child care practices may sensitize mothers to their infant's individual capacities and needs in a manner congruent with their own cultural context and beliefs. The intervention administered in community areas can also utilize a problem-solving approach useful in addressing some of the socioeconomic risk factors, such as assisting women in obtaining small loans from the government.

The encouragement of financial independence through an intervention is especially pertinent as low income and poverty remain one of the greatest barriers to adequate health and health seeking behaviors [38]. In a socioeconomic setting similar to Pakistan, the use of microcredit programs has been very successful in promoting and

communicating health knowledge, increasing awareness, and teaching appropriate and responsible behaviors [38]. Microcredit programs offer small loans at low interest to low income individuals [39]. These loans help disadvantaged women invest in small-scale businesses to generate personal income. Through this approach, individuals have made improvements in their health and simultaneously bettered their economic situation, a key driver of enhanced health and wellbeing itself. Microcredit programs have been proven to alleviate financial burden among women, empower them, as well as increase their overall health status [38]. The benefits of these credit programs are again two-fold. In a multifaceted intervention targeted at alleviating the burden of PPD in Pakistan, NGOs can help in the promotion of microcredit programs among local communities to empower small groups of women to invest in small-scale businesses and generate personal income. This income is often associated with increased maternal and child nutrition, better access to healthcare, as well as a decreased rate of PPD overall [35]. Furthermore, women can be encouraged to implement a wide-spread community level savings mobilization program. This program enables and trains women and men to mobilize modest amounts of savings, over time, financial resources can be pooled to preserve capital for times of need. These resources can be invested back into the community to improve road access and healthcare at a community wide level. Awareness and skills required for microcredit programs can be incorporated into community initiatives targeting the mother-infant dyad this can collectively diminishes education and economic barriers to alleviate the burden of PPD.

Collectively, by molding the Thinking Healthy Program, establishing links with local NGOs as well as encouraging microcredit loans, the prevalence of PPD can be decreased through front-line efforts of lady health workers. By establishing an approach which respects and reflects Pakistan's culture and practices, increased engagement of new mothers in preventative measures is attainable.

References

1. PiotrowskiNP, & BensonAP. (2017). Postpartum depression. Magill'S Medical Guide (Online Edition). [Crossref]
2. Villegas L, McKay K, Dennis C and Ross LE. Postpartum Depression Among Rural Women From Developed and Developing Countries: A Systematic Review. J Rural Health. 2011; 27:278-288. [Crossref]
3. Özcan NK, Boyacıoğlu NE, and Dinç H. Postpartum Depression Prevalence and Risk Factors in Turkey: A Systematic Review and Meta-Analysis. Archives Of Psychiatric Nursing. 2017; 31:420-428. [Crossref]
4. O'Hara MW, & Swain AM. Rates and risk of postpartum depression--a meta-analysis. International Review Of Psychiatry. 1996; 8: 37. [Crossref]
5. RobertsonE, GraceS, Wallington T and Stewart, D. Antenatal risk factors for postpartum depression: a synthesis of recent literature. Gen Hosp Psychiatry. 2004; 26: 289-295. [Crossref]
6. HusainN, Beve I, Husain M, Chaudhry I. B, Atif N, Rahman A, et al. Prevalence and social correlates of postnatal depression in a low income country. Arch WomensMent Health. 2006; 9:197-202. [Crossref]
7. Gulamani S.S, Premji S.S, Kanji Z and Azam S. I. A review of postpartum depression, preterm birth, and culture. J Perinat Neonatal Nurs. 2013; 27: 52-59. [Crossref]
8. Irfan N and Badar A. Determinants and pattern of postpartum psychological disorders in Hazara division of Pakistan. J Ayub Med Coll Abbottabad. 2003; 15: 19-23. [Crossref]
9. Abdollahi F, Lye M, MdZain A, ShariffGhazali S and Zarghami, M. Postnatal depression and its associated factors in women from different cultures. Iranian Journal Of Psychiatry And Behavioral Sciences. 2011; 5: 5-11. [Crossref]
10. Gulamani SS, Shaikh K, and Chagani J. Postpartum depression in Pakistan: a neglected issue. NursWomens Health. 2013; 17: 147-152. [Crossref]
11. Shah SA, Bowen A, Afridi I, Nowshad G, and MuhajarineN.. Prevalence of antenatal depression: comparison between Pakistani and Canadian women. J Pak Med Assoc. 2011; 61:242-246. [Crossref]
12. KlaininP, and Arthur DG. Review: Postpartum depression in Asian cultures: A literature review. Int J Nurs Stud. 2009; 46: 1355-1373. [Crossref]
13. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders: DSM-5. Washington, DC: Author, 2013. [Crossref]
14. Figueiredo FP, Parada AP, AraujoLd, Silva Jr WA, and Del-Ben C. M. Review: The Influence of genetic factors on peripartum depression: A systematic review. J Affect Disord. 2015; 172: 265-273. [Crossref]
15. Ali NS, MahmudS, Khan A and Ali BS. Impact of postpartum anxiety and depression on child's mental development from two peri-urban communities of Karachi, Pakistan: a quasi-experimental study. BMC Psychiatry, 2013;13: 506-528. [Crossref]
16. RahmanA, SikanderS, MalikA, Ahmed I, Tomenson B, Creed F, et al. Effective treatment of perinatal depression for women in debt and lacking financial empowerment in a low-income country. Br J Psychiatry. 2012; 201: 451-457. [Crossref]
17. Husain N, Parveen A, Husain M,Saeed Q, JafriF, Rahman R, et al. Prevalence and psychosocial correlates of perinatal depression: a cohort study from urban Pakistan. Arch WomensMent Health. 2011; 14: 395-403. [Crossref]
18. Faiz S, Batool Z, Ejaz S, & Rashid, A. Maternity care services; accessibility among rural women in district faisalabad. Professional Medical Journal.2016; 23: 721-726. [Crossref]
19. Shaikh K, PremjiSS, Rose MS, Kazi A, Khowaja S, Tough S, et al. The association between parity, infant gender, higher level of paternal education and preterm birth in Pakistan: a cohort study. BMC Pregnancy Childbirth. 2011; 11: 88. [Crossref]
20. Kazi A, Fatmi Z,Hatcher J, Kadir M, Niaz U, Wasserman G, et al. Social environment and depression among pregnant women in urban areas of Pakistan: Importance of social relations. SocSci Med. 2006; 63:1466-1476. [Crossref]
21. MirzaI, Mujtaba M, Chaudhry H, and Jenkins R. Primary mental health care in rural Punjab, Pakistan: Providers, and user perspectives of the effectiveness of treatments. SocSci Med. 2006; 63: 593-597. [Crossref]
22. Mustafa AB, ZahraR and Rana, MH. Postpartum Depression in Pakistan: Suffering in Silence. JPPS. 2016; 13: 6. [Crossref]
23. NasirI. Sifarish, Sycophants, Power and Collectivism: Administrative Culture in Pakistan. International Review Of Administrative Sciences, 2004;70: 311. [Crossref]
24. Beck C. Predictors of postpartum depression. Nursing Research. 2001; 50: 275-285. [Crossref]
25. Easterbrooks M.A, KotakeC,RaskinM and Bumgarner, E. Patterns of depression among adolescent mothers: resilience related to father support and home visiting program. Am J Orthopsychiatry. 2016; 86: 61-68. [Crossref]
26. N. Sejourne, V. Vaslot, M. Beaume, N. Goutaudier and H. Chabrol. The impact of paternity leave and paternal involvement in child care on maternal postpartum depression. J Reprod Infant Psychol 2012; 30:135-144. [Crossref]
27. Gul M, Bajwa S, Niaz S, Haroon M, Liaqat S, Ahmad, M, et al. Postnatal depression and its comparison with the gender of newborn in fourth pregnancy. International Journal Of Culture & Mental Health. 2013; 6: 16-28. [Crossref]
28. Dixon S and Dantas J.R. Best practice for community-based management of postnatal depression in developing countries: A systematic review. Health Care Women Int. 2017; 38: 118-143. [Crossref]
29. Khan TM, Hayati BN, Tahir H and Anwar M. Role of the husband's knowledge and behaviour in postnatal depression: a case study of an immigrant Pakistani woman. Ment Health Fam Med. 2009; 6: 195-201. [Crossref]
30. ZahidieA,&Jamali T. An overview of the predictors of depression among adult Pakistani women. J Coll Physicians Surg Pak. 2013; 23: 574-580. [Crossref]
31. Qidwai, W.. Delivering healthcare services in resource constraint countries like Pakistan: sustainable options. Journal Of The College Of Physicians And Surgeons Pakistan. 2015; 25: 393-394. [Crossref]
32. KanwalAslamS, Zaheer S, Qureshi, MS, AslamSN and Shafique, K.. Socio-Economic Disparities in Use of Family Planning Methods among Pakistani Women: Findings from Pakistan Demographic and Health Surveys. Plos One. 2016;11: e0153313. [Crossref]
33. Zaidi S, RiazA, Rabbani F, Azam SI, Imran S N, Pradhan NA, et al. Can contracted out health facilities improve access, equity, and quality of maternal and newborn health services? Evidence from Pakistan. Health Res Policy Syst. 2015; 1:54. [Crossref]
34. Barkin JL, McKeever A, Lian B and Wisniewski S.R. Correlates of Postpartum Maternal Functioning in a Low-Income Obstetric Population. J Am Psychiatr Nurses Assoc, 2017; 23: 149-158. [Crossref]
35. Howe III JP. Banking on Better Health. Harvard International Review, 2014; 35: 43-47.[Crossref]

36. RahmanA, MalikA, SikanderS, RobertsC, Creed F, SikanderS, et al. Cognitive behavior therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial. Lancet. 2008; 372: 902-909. [Crossref]

37. Maselko J, SikanderS, BhalotraS, BangashO, GangaN, MukherjeeS, et al. Effect of an early perinatal depression intervention on long-term child development outcomes: follow-up of the Thinking Healthy Programmerandomised controlled trial. The Lancet Psychiatry. 2015; 2: 609-617. [Crossref]

38. TiloStrobach and Manfred Zaumseil. An evaluation of a micro-credit system to promote health knowledge among poor women in Bangladesh.Health Promotion International. 2007; 22:129-136. [Crossref]

39. Hassan MS, and Ibrahim K. Sustaining Small Entrepreneurs Through a Microcredit Program in Penang, Malaysia: A Case Study. Journal Of Human Behavior In The Social Environment. 2015; 25: 182-191. [Crossref]