**Full title**: PERCEPTIONS OF PRIMIPARAS ON A POSTNATAL PSYCHOEDUCATION PROGRAMME: THE PROCESS EVALUATION

**Running title:** Process evaluation of postnatal psychoeducation programme

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## Abstract

***Objective*:** To explore the perceptions of primiparas on the contents, delivery and personal impact of postnatal psychoeducation programme

***Design and settings*:** A descriptive qualitative study was conducted in a public tertiary hospital in Singapore in 2013.

***Participants*:** Eighteen primiparas who were able to read and speak English were recruited from the intervention group of a randomized controlled trial.

***Measurements:*** A semi-structured interview guide was used to interview participants' perceptions on a postnatal psychoeducation programme at participants' home, which was developed based on the principles of self-efficacy and social exchange theories, between 6 - 9 weeks postpartum. The programme comprised of a 90-minute home visit, three weekly telephone follow-up and an educational booklet.

***Findings*:** The qualitative interviews revealed that the participants faced many challenges such as negative emotions and difficulties in breastfeeding and support issues in the early postpartum period especially after the hospital discharge. However, all the participants in the intervention group perceived the postnatal psychoeducation programme to be helpful in increasing their confidence in newborn care, fostering help-seeking behavior, improving emotional well-being and increasing their knowledge in newborn and self-care as well as in breastfeeding. Suggestions for programme improvements included more home visits, more telephone follow-up and web-based psychoeducation as well as recommending postnatal psychoeducation programme to be offered as a routine care. Overall, there was a high satisfaction and acceptability with the programme.

***Conclusions*:** Our findings indicate that the programme is beneficial for maternal wellbeing and confidence in maternal roles and, therefore, is promising to be introduced to the multi-racial primiparas in Singapore.

***Implications for practice:*** The challenges mothers experience during the postnatal period suggest that it would be worthwhile to devote more resources in providing follow-up support to the mothers in the early postpartum period. Midwives could incorporate a self-efficacy enhancing intervention with a family-centered approach to enable women to have a smooth transition to motherhood.

***Keywords***: Depression, Maternal self-efficacy, Postnatal, Process evaluation, Psychoeducation, Social support

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## Introduction

The early postpartum period is a stressful transition period for new mothers especially the primiparas (first-time mothers) (Kapp, 1998; Leahy-Warren et al. 2011; Ong et al., 2013). The primiparas face numerous physical and emotional challenges in the early postpartum period (Leahy-Warren et al., 2011; Ong et al., 2013; Tarkka, 1999). Lack of support during this period could lead to mothers feeling depressed and low self-efficacy in looking after their newborns (Haslam et al., 2006; Leahy-Warren et al., 2011; Shorey et al., 2013). The support available for the mothers in the crucial early postpartum period is thus critical for the smooth transition to motherhood. However, Bick (2003) reported that there was a lack of recognition for postnatal care provided to mothers globally.

The main focus of maternity care remained pregnancy and childbirth. The postnatal support available internationally varies from a few home visits to no home visits (D'Amour et al., 2003; Fenwick et al., 2010; Morrell et al., 2000). The details on the types of educational interventions delivered to the new mothers at home and how successful they are, is inconclusive (McNaughton, 2004).

There are various unmet needs of mothers in the early postpartum period (Bick et al., 2008; Kapp, 1998). The primiparas tend to feel more stressed and lower self-efficacy in newborn care tasks as compared to the multiparas (Forster et al., 2008; Ngai et al., 2009; Tarkka et al., 2000). Many studies have explored mothers' experiences and the challenges they face during the postnatal period (Kanotra et al., 2007; Leahy-Warren, 2005; Lof et al., 2006; Martell, 2001; Ong et al., 2013). These studies confirmed that transition to motherhood is an overriding concern for new mothers, especially for their infants and the need to develop adequate skills and confidence in mothering abilities. The mothers reported that they were simultaneously

confronted with the demands of caring for their baby and the physical, emotional and social changes that ensue after delivery (Leahy-Warren, 2005). These mothers suggested the need to have follow-up support for mothers, especially after early hospital discharge (Lof et al., 2006). In Singapore, an exploratory qualitative study (Ong et al., 2013) on primiparas reported the need for more information from health care professionals, access to health care services and continuity of care in the form of home visits after their early discharge from the hospital.

The follow-up support post delivery varies from home visits by the midwives and community health nurses to hospital visits by the mothers to see their consultants (McNaughton, 2004; Ong et al., 2013). There are limited psychoeducational programmes available globally during the postnatal period (Ip et al., 2009; Kapp, 1998; Ngai et al., 2009). Psychoeducational interventions mainly focus on providing knowledge relevant to a health condition and its treatment, in addition to promoting increased coping or behavioral adjustment (Lincoln et al., 2008). Two studies showed that psychoeducational interventions could enhance maternal psychosocial well-being during pregnancy and birth (Ip et al., 2009; Ngai et al., 2009); however, no study has examined the use of this intervention for postnatal mothers. Therefore, a home-based postnatal psychoeducation programme (PPP) was developed (Shorey et al., 2014a) based on self-efficacy theory (Bandura, 1997) and social exchange theory (Blau, 1964; Homans, 1961), A randomized controlled trial testing its effectiveness on enhancing maternal parental self-efficacy, social support and reducing postnatal depression symptoms was conducted with multiracial primiparas.

Bandura (1997) underlined four self-efficacy enhancement factors (mastery experience, verbal persuasion, vicarious experience and physical and affective states) in the theory. All these factors were incorporated in the PPP. For example, mothers

were provided with opportunities for hands on baby care tasks and to learn from their own experiences (mastery experience). In addition, based on social exchange theory (Blau, 1964; Homans, 1961) both formal support (from midwife) and informal support (from significant others) were provided to the primiparas. The PPP was designed based on the local needs of multiracial Singaporean mothers (Ong et al., 2013). The PPP fills the gap in the literature where the support, provided in the form of home visits, focuses mainly on instrumental support with baby care tasks or the screening of the baby by the varied support providers including midwives, community health nurses and non-health care professionals such as home care workers (D'Amour et al., 2003; Morrell et al., 2000). There is an inadequate description and analysis of the interventions being executed during these home visits.

McNaughton (2004) reported the need to evaluate the interventions delivered at home. The process evaluation of an educational intervention is one way of understanding why and how the intervention worked and how it could be improved further (Breitmayer et al., 1993). The aim of this study was to report the qualitative process evaluation of the PPP delivered to multi-racial primiparas in Singapore. The focus was to explore mothers' perceptions on the content, delivery methods, impact and suggestions for improvement of the intervention.

## Methods

### *Design*

A descriptive qualitative study was conducted.

### *Sampling*

Participants were recruited from a randomized controlled trial examining the effectiveness of a PPP on maternal outcomes including self-efficacy in newborn care, social support and postnatal depression. The study venue was the postnatal wards of a

public tertiary hospital in Singapore. The purposive sampling was used to select primiparas, able to read and speak English with different maternal self-efficacy scores at six weeks postpartum from the intervention group (n = 61). The modified Perceived Maternal Parental Self-Efficacy (PMP S-E) scale, a domain specific scale that was originally developed by Barnes and Adamson-Macedo (2007), was used to obtain the scores of maternal self-efficacy. The original PMP S-E scale contained 20 items. Based on the face and content validity evaluated by an expert panel, three items were removed due to repetition. The modified scale consisted of 17 items with each item rated on a 4-point likert scale: 1 = 'strongly disagree' to 4 = 'strongly agree', which gave a total score from 17 to 68. Higher scores (above median score of 42) represent higher self-efficacy in newborn care. The modified PMPS-E scale was valid and reliable as shown in a local study (Shorey et al., 2013). Originally, it was planned that participants with self-efficacy scores of higher and lower than median score of 42 would be recruited. However, the results showed that all participants in the intervention group had self-efficacy scores over 42; therefore, all participants from the intervention group were approached. Data saturation was achieved at the 15th participants. Three additional interviews were conducted and no additional information yielded (Schneider et al., 2007), giving a total sample of 18 mothers.

***Intervention***

The control group received routine care, which included educational support on newborn care including breastfeeding support when the mothers were in the hospital and follow-up hospital visit with their consultants. The intervention group received the PPP in addition to the routine care. The PPP was planned to provide follow-up care to the first-time mothers after the hospital discharge from as early as day five to two weeks post- delivery. The interactive educational programme was

based on literature (Fisher et al., 2010; Rowe & Fisher, 2010) and theories (Bandura, 1997; Blau, 1964; Homans, 1961).

PPP involved a postnatal home visit by a midwife who was experienced in parent craft teaching; three follow-up telephone calls on a weekly basis and an educational booklet. To ensure standardization and enhance internal validity, the same midwife researcher following a standardized intervention protocol delivered the PPP to all participants. An individualized single home visit of approximately 90 minutes duration was conducted between 5 to 14 days post-delivery. During the home visit educational and instrumental support were provided on self and newborn care. The focus was to enhance maternal self-efficacy and social support and to reduce postnatal depression. An educational booklet was provided as reinforcement to what was delivered during the home visits. Various topics including newborn care, self care and family dynamics after having a baby was covered in the booklet. Three telephone follow-up calls were made on a weekly basis and up to six weeks post delivery. The purpose of the telephone follow-up was to explore if there were new stressors and queries after the home visit and to answer the mother's queries according to their individual needs.

***Data Collection***

At the end of the intervention programme, that is, six weeks postpartum, mothers were contacted by the same midwife researcher who delivered the intervention via telephone to participate in the face-to-face interview for their perceptions on the content, delivery methods and impact of the intervention. Mothers were informed on the approximate duration of the interview: 30-60 minutes. They were also told that all interviews would be audio recorded and the consent was obtained. The mothers who declined the interviews to be audio-recorded were not

recruited for interview. The interviews took place at the mothers' home between six to nine weeks and they were reminded about the interview a day before via text message. The duration of the interviews ranged from 19 to 43 minutes. All the interviews were conducted in English as per the inclusion criteria. Field notes were also taken to record observations on non-verbal communications.

A semi-structured interview guide (Table 1) was prepared to assess maternal perceptions of PPP; the guide included 11 questions. The expert panel including two academics expert in psychoeducation and maternal and child health nursing and a clinical obstetrician reviewed the interview guide. They provided comments on clarity and contents of the interview guide. The wording and the number of questions were revised after their review.

Table 1 here

***Ethical Considerations***

Ethics approval was obtained from the Institutional Review Board of the participating hospital. Written informed consent was obtained from each mother after the information about the research and the nature of the mother's participation was clearly explained. Voluntary participation and confidentiality were maintained.

***Data Analysis***

Thematic analysis was used to analyse the data. Data were reviewed and coded independently by the first and second authors to ensure trustworthiness (Graneheim and Lundman, 2004). The related words, sentences or paragraphs representing an idea were identified and coded into a category for analysis of emerging themes. After independent coding, the authors compared the themes, looked for communalities and differences, and identified the overall themes. To ensure

consensus and accurate interpretation of the data, themes and categories were compared through constant meetings between the authors. This in turn enhances the credibility and dependability of the findings.

## Findings

### *Sample Characteristics*

The mean age of the participants was 29.39 years (SD = 3.7, range = 23-39). As shown in Table 2, all mothers were married and majority of them were Chinese (44.4%), followed by Indian (27.8%), Malay (16.7%) and other ethnicities (11.1%). About two-thirds of the participants (61%) were university graduates and employed (66.7%). Three-fourths of them had monthly household incomes of S$ 3000 and above (US$2500 and above) (77.8%) and did not attend the antenatal classes (77.8%). More than half (55.6%) of the participants had caesarean section as the type of birth.

Table 2 here

Four themes emerged from the thematic analysis: (1) Challenges in the postnatal period; (2) Benefits of participating in postnatal psychoeducation programme (PPP); (3) Strengths of PPP; and (4) Future directions. All themes and sub-themes are summarized in Table 3.

Table 3 here

### *Theme 1: Challenges in the postnatal period*

The participants highlighted a variety of challenges they faced in the early postnatal period. These were generally associated with negative emotions, difficulties in breastfeeding and lack of knowledge in newborn care, support issues and differences on confinement practices.

*Sub-theme 1 Negative emotions.* Most of the participants' experienced negative emotions especially the feeling of being lost, fear and stress in the early

postnatal period. Being first-time mothers and with lack of prior experience looking after their newborns added further to their distress. As the following quote illustrates:

> I had no idea having a baby was a stressful life event. There were a lot of things that I did not know. (Informant 7)

*Sub-theme 2 Difficulties in breastfeeding***.** Many mothers were facing challenges in breastfeeding from not having sufficient milk to ignorance about the different positions in breastfeeding. Breastfeeding was regarded as a demanding task and presented several challenges to the mother during the postnatal period:

> I was not comfortable in feeding the baby in different positions. Specially, I was not sure if I can lie down or I can turn. Always worried if the baby or I will be comfortable. (Informant 6)

*Sub-theme 3 Lack of knowledge in newborn care.* Most of the mothers highlighted that being first-time mothers, they lacked the knowledge on various newborn care tasks such as handling the crying baby, baby's sleeping patterns, feeding schedule to holding the baby. They highlighted that they were not well informed and prepared for these tasks and that caused them stress:

> I have low confidence. I do not know how to change the diapers. I even don't know how to hug the baby. The worst thing is when the baby is crying. I feel so bad, but I don't know how to handle it, and I often get stressed…my mood was very low. (Informant 8)

*Sub-theme 4 Support issues.* The foreign mothers felt the limited social support available for them due to a lack of family support. The sources of support available for the local mothers were mainly from their own mothers, husbands and the mothers-in law. Several mothers highlighted the confusion and stress they had to face due to the conflicting advice received. Specifically, the support they receive from their husbands was either limited due to their work commitments or insensitive:

> I remembered in the first one or two week I cried twice. I felt stressed and bothered because my husband was saying this…my mother-in law was saying that and my mom say like no! This way…I was quit puzzled and felt very stressed (Informant 9)

*Sub-theme 5 Differences in confinement practices.* Overall, the mothers who were interviewed had to follow certain confinement practices as imposed by their families including not going out of the house and following a certain diet. However, differences were seen in following practices as most of the mothers acknowledged their benefits but found it impractical to follow some:

> By right it was like can't go out of the house due to confinement but for my case it wasn't like that because we had to take her to the polyclinic for the first check up and all. For me sitting down at home was not possible. (Informant 17)

***Theme 2: Benefits of participating in Postnatal Psychoeducation Programme***

Mothers reaped many benefits by participating in PPP. These benefits were categorized into four sub-themes including enhanced knowledge on newborn care,

self-care and breastfeeding, enhanced confidence level, enhanced help-seeking behavior and enhanced emotional well-being.

*Sub-theme 1 Enhanced knowledge on newborn care, self-care and breastfeeding.* Most of the mothers mentioned that their knowledge on various newborn care tasks such as breastfeeding and soothing the crying baby as well as their knowledge on self-care had improved tremendously after participating in the PPP:

> Midwife came and helped to provide the home visit that was very great experience...because she gave me like knowledge of how to do the baby sleeping then bathing then eating and give me the booklet which could boost up my confidence. (Informant 3)

*Sub-theme 2 Enhanced confidence level***.** Mothers said that their confidence levels were increased tremendously as they had someone to answer to their queries and receive timely feedbacks. Mothers felt safe and confident especially when they heard from the professionals that they were doing well with baby care:

> It really made me more confident because I felt I am providing safe care to my baby as the midwife had constantly corrected me during bathing my baby. (Informant 9)
>
> It actually improved my confidence in a way quite obviously because I could even actually teach my mom and my husband how to give the care to my baby (Mother laughed). (Informant 11)

*Sub-theme 3 Improved help-seeking behavior***.** Most of the mothers said that the programme had enabled them to understand the importance of engaging in an open communication and being able to seek help from others. Several mothers mentioned that even though they had a quiet disposition and were initially apprehensive in sharing their feelings with others, but, after having gone through this programme, they had learned to be more open and more willing to clarify their doubts:

> I started opening up to other people so that I could cope with postnatal stress. I started to ask my mom if she really experienced the same kind of feeling when she had me. I asked my friends that I experienced this and experienced that… They gave me encouragement and support. (Informant 5)

*Sub-theme 4 Enhanced emotional well-being***.** Most of the mothers mentioned that their mood was enhanced as their queries regarding newborn care were answered. They were more accustomed to the realities of newborn care as their myths about baby care had been corrected. Predominantly, they felt less stressed knowing that they were providing best care to their babies and they had professional help available to support their needs. Several mothers said that the added knowledge about postnatal depression and blues made them more vigilant about their emotional wellbeing, resulting which, they felt much better:

> It really prepared me that I might be experiencing postnatal blue. After attending the programme, I knew that it was very normal to undergo those kinds of feelings after giving birth…so I felt much better. (Informant 5)

***Theme 3: Strengths of postnatal psychoeducation programme***

Mothers said many strengths of the PPP including it being convenient and helpful that enabled them to have a trusting relationship with their midwife, it had a comprehensive educational booklet and overall, there were cost savings and it was fair with no discrimination.

*Sub-theme 1 Convenient and helpful.* The majority of the mothers said that one of the biggest strengths of the programme was that, it was convenient and the assistance was provided to them, which they needed. Mothers were not required to go out of their home environments as they were receiving care at their home. This was especially helpful for the mothers who found it tiring and difficult to go out of the house within the first one month postpartum due to the restrictions imposed due to the confinement practices:

> It is very convenient for new moms because a midwife came to your home and gave you advice and help on the spot, rather than you go out and asking for help with your baby. At home you feel comfortable and you can also ask them more questions and if you are outside you may hurry to come back home so it's very convenient. (Informant 14):

> I felt rested as the midwife came to my house at my convenience to provide me with important information. It was less tiring and very convenient to receive information at your doorstep (mother laughed). (Informant 12)

*Sub-theme 2 Establish trusting relationship with the midwife.* Many mothers felt that, due to the home visit component of the PPP, they were able to have a face-

to-face interaction with the midwife that allowed them to establish a trusting relationship with the midwife. Several mothers also found that the friendly and helpful disposition of the midwife who conducted the programme enabled them to have a trusting relationship with her:

> It was very comfortable with the midwife because she was very friendly and approachable. She really wanted to help the mothers so we also felt comfortable talking to her and asking advise from her. (Informant 10)

*Sub-theme 3 Comprehensive educational booklet.* All the mothers said that the booklet was easy to understand. The other strengths of the booklet were, its simple layout explained in point form and being filled with colorful pictures. They also valued having the content page, reading list and more importantly, the important contacts provided to them in the booklet in case of an emergency. Several mothers said that they liked the contents of the booklet as it had covered information considering local multiracial society. The majority of the mothers also liked the size of the booklet as they felt it was easy to handle and that they could manage to read it even when they were breastfeeding:

> The book has everything...the information about taking care of the baby...even about giving milk, breastfeeding, why the babies cry, what we should do. We can just read it as a storybook to have more knowledge about the baby and self. Any doubt, we could take out the book anytime…if I really need the answer to the question the book answers everything. (Informant 11)

*Sub-theme 4 Cost saving*. Several mothers said that one of the vital strengths of PPP was that, there were no costs incurred from participating in this programme. As the midwife answered many of the mothers' queries, cost savings were realized by not having to go to the doctors. They also felt that having a midwife visiting them at their homes saved them from their cost in travelling by bring their baby out of the comfort of their homes. As elaborated by these mothers:

> It really helps! As compared to going to the clinic and seeing the doctor where one needs to pay, asking midwife is more convenient and cost saving. (Informant 15)

*Sub-theme 5 Fair and no discrimination service***.** Majority of the mothers said that they felt lucky to participate in this programme as there was a fair way of choosing them by drawing on number slips. Foreign (non Singaporeans) mothers such as Filipinos and Indians especially felt not being discriminated as they were given an equal chance to participate:

> I am glad that this programme is offered to not only to Singaporeans but also to the foreigners like myself. Because some programmes I saw only included local Singaporean. (Informant 2)

***Theme 4: Future Directions***

Most of the mothers were satisfied with the original design of the PPP and advocated it to be a routine programme. As such, they preferred the home visit followed by the telephone calls and the educational booklet provided. However, some

mothers suggested having more such home visits and telephone follow-up. Some mothers also suggested having more information to be included in the educational booklet. Few mothers recommended incorporating web-based learning for future programmes.

*Sub-theme 1 PPP as routine care.* Most of the mothers were very satisfied with the PPP. They said that as the programme was very beneficial for them, the programme should reach out to many more mothers by making it to be a part of routine care. They felt that it could help those mothers who most needed the support such as the foreigners, locals living alone without their families in Singapore, first-time mothers, mothers having low monthly-household incomes and those mothers who could be depressed:

> Especially the first mothers like me, those who are living alone without their parents staying with them and those couples who do not like to mix with the rest. This programme is a great help for them you know…It helped to build their confidence like mine and provided opportunities to release their stress…instead of like you know no help…nobody cares. (Informant 8)

*Sub-theme 2 More home visits***.** Very few mothers suggested having more than one home visit in the postpartum period rationalizing that as the baby grows they would face newer challenges. However, most of those who suggested also understood the practical limitations of having more home visits as shared by these mothers:

> I think will be good to have one visit in the first two weeks which you already have, and one more visit within next two months because first week is very

> stressful especially when we are new to the baby, the second time is because at that time the baby is changing a lot…she has different behaviors almost everyday…has different things. (Informant 8)

*Sub-theme 3 More telephone follow-ups.* Some mothers felt that the telephone follow-up should be extended as they might need more help as the baby grows and especially during specific milestones such as during the introduction of solid food. They also understood the challenges that a midwife had in trying to call the mothers and the mothers then suggested that they could be provided with the option of initiating the telephone call. The suggestions for telephone follow-up with the mothers, varied from as early as three months to up to two years postpartum:

> I hope the phone calls follow up can be extended lah… because this is to maybe we can keep in a long time contact with the midwife and then because baby has different stages… but of course not very frequently like maybe first 6 months, 8 months, a few months interval. (Informant 18)

*Sub-theme 4 More information in the educational booklet.* Some mothers suggested that there should be more information in the educational booklet. Their suggestions varied from a general feedback on updates of information in the booklet to adding specific topics such as gastric issues with the baby including frequent regurgitation and practical tips on putting the baby to sleep:

> Can we add some information for mummies about how to appraise the sleep changes and how can we get baby fall into sleep very quickly and also the

contents of the booklet should have practical tips on sleeping behaviors or put the baby to sleep. (Informant 17)

*Sub-theme 5 Web-based learning.* Some mothers suggested introducing web-based learning to this programme. They recommended having an online chat, forum or a Facebook page created for them so that they could pose their queries at any time of the day. Mothers felt that web-based learning would be effective, as it would provide the possibility of a longer-term support system:

> Having a forum for the moms would be good as they can pose their questions anytime. Especially, some questions may be very common as one mom has already asked and midwife had already answered and you are posing the same question then rather than midwife repeating you can actually find the answer...that could be very good and practical way. (Informant 6)

Despite these suggestions, all the participants expressed that they would recommend the PPP to the other mothers especially the first-time mothers as they had benefitted most from this programme.

**Discussion**

The purpose of this study was to evaluate the PPP from the perspectives of a group of primiparas who undertook the intervention in the early postpartum period The data generated from the process evaluation helped the researcher understand the strengths and weaknesses of the programme. The findings of this study supported the

view that the programme was useful and appropriate. The participants recommended the programme to be incorporated as a routine childbirth education.

Most of the participants in this study highlighted that they experienced negative emotions especially the feeling of being lost, fearful and stressful in the early postnatal period. They felt unprepared to take up the challenges of motherhood. These findings were similar to the findings of various previous studies (Kanotra et al., 2007; Leahy-Warren, 2005; Lof et al., 2006; Marttell, 2001; Ong et al., 2013), where new mothers felt overwhelmed with the challenges of early postnatal period. Our findings indicate the importance to provide more psychological support to first-time mothers.

Some foreign mothers in this study experienced a lack of support, as there were no family members to depend on in the early postnatal period. These findings are similar to previous studies (Davey et al., 2011; Nahas et al., 1999; Ward, 2003; Yeoun, 2003), which found that being an immigrant in a country; the mothers missed the close support of family networks. In contrast, the local mothers received adequate support especially from their mothers however they suffered from receiving conflicting advice from their significant others. This is similar to findings from previous studies (Martell, 2001; Ngai et al., 2011) where conflicting advice from various sources such as mothers, husbands, friends and mothers-in law were the reasons for the added stress for new mothers.

The participants in this study expressed that they felt confident when they received knowledge from the midwife on self and newborn care, feedback on their skills performance and their queries were answered. Receiving support during the home visits enhanced their satisfaction and prepared them better both physically and emotionally to cope with the challenges in early postnatal period. These findings are congruent with the quantitative findings of this study (Shorey et. al., 2014b) which

showed that PPP was useful in enhancing maternal self-efficacy, social support and reducing postnatal depression symptoms.

These findings could be explained by Bandura's self-efficacy theory (1997) whereby factors such as mastery experience, verbal persuasion, vicarious experience and knowledge about physical and emotional well-being are important in building maternal self-efficacy for successful parenting. It is possible that the PPP developed could have given primiparas the necessary support; education and opportunities to learn newborn care skills to enhance their self-efficacy and emotional well-being. It was also found in previous literature (Haslam et al., 2006; Leahy-Warren, 2005; Leahy-Warren et al., 2011; Tarkka and Paunonen, 1996; Tarkka, 2003) that support from both health care professionals and significant others were welcomed by new mothers. Hence, the professional support by midwives and the education on the importance of seeking help from others could be reasons for the success of the PPP.

Previous literature (Boyce and Hickey, 2005; Howell et al., 2009; Davey et al., 2011) suggested that among many other factors, such as biological and environmental, psychosocial factors such as social support and maternal self-efficacy have a greater impact on maternal psychological well-being. The focus on maternal self-efficacy and social support needs of first-time mothers in the PPP might have contributed to their enhanced emotional well-being.

Specific to this study, the focus was to enhance the holistic psychosocial wellbeing of new mothers. Family members were involved and interventions focused on providing coping strategies to the mothers in enhancing their self-efficacy and emotional well-being. Hence, the support provided was more than just the instrumental support for the new mothers (Kapp, 1998, McNaughton, 2004).

Our participants highlighted various strengths of the PPP such as the programme being convenient and helpful as it was delivered at their comfortable home environment. Previous studies (Bashour et al., 2008; Bennett and Tandy, 1998; Johansson et al., 2010; Lock and Gibb, 2003) reported similar findings in that mothers felt more secure and supported by midwives in their familiar home. The support by midwives at their home has provided them a sense of control, adequate rest, safety and confidence in looking after their newborns. Mothers were very satisfied with the good rapport with the same approachable midwife who met them in the hospital and followed them through home visits and telephone follow-ups during the postnatal period. Thus, maintaining the continuity of care from the hospital to the postnatal period could be an important component for a successful PPP. One of the major strengths of the PPP was the comprehensive educational booklet. This could be due to the fact that primiparas favored the use of written resources, as the material is available for review at any time (Berger and Cook, 1998; Renkert and Nutbeam, 2001).

Due to the strengths of the PPP, all participants recommended to incorporate the PPP into routine support in the early postpartum period. Some of the participants suggested having more than one home-visit and frequent telephone follow-ups. However, previous studies (Bashour et al., 2008; Dennis and Kingston, 2008; Lock and Gibb, 2003) have found that it is the content and not the frequency of the home-visit that matters and having one or more home visits and number of telephone calls will lead to similar outcomes. The success of the PPP in this study confirmed that the single home-visit and telephone follow-up were adequate in influencing maternal parental self-efficacy, social support and emotional well-being of new mothers facilitating the smooth transition to motherhood in the early postpartum period.

Some mothers even suggested relieving the burden of prolonged continuous support of additional home visits and telephone follow-ups using web-based learning. A web-based intervention study conducted in Finland showed that parents felt more satisfied and had enhanced self-efficacy in newborn care tasks (Salonen et al., 2009). Based on Singapore Internet Statistics 2013 (Search Guru, 2014), 82% of Singaporean families can access broadband at home. Hence, it is feasible to develop and provide web-based intervention to mothers.

**Limitations**

This study was limited to those who were willing to participate in the interviews and they might have higher motivation to share their experiences with the researcher. There might be bias of the findings as the majority of the participants were well educated, employed and belonged to higher income groups. Moreover, the process evaluation did not include the family members. Thus we could not evaluate the programme from the perspectives of the family. In addition, the same researcher who delivered the intervention carried out the interviews. Nevertheless, this approach was deemed appropriate given that the quality of the interview data depends on a great extent on participants' trust and rapport with the interviewer and the participants in this study requested to be interviewed by the same researcher who had established a trusting relationship with them. To minimise the potential desirable responses and to get a more genuine response of participants' experience of the interventions, the participants were reminded to express their honest and objective opinions as their feedbacks would enable further improvement of the programme. In addition, the interviews were audio-recorded which the second researcher listened to before confirming the themes and sub-themes derived from the transcripts. This was to avoid bias during the data analysis.

**Implications for future practice**

The study provides evidence on the benefits of PPP in enhancing maternal confidence and psychosocial well-being. Midwives can incorporate self-efficacy enhancing factors such as providing opportunities for skills practice (mastery experience), demonstrating skills for vicarious learning, providing verbal feedbacks (verbal persuasion) and educating on physical and emotional well-being to promote adaptation to motherhood as early as when the mothers are still in the hospital.

Midwives can also focus on encouraging family members including husbands and maternal mothers to support primiparas to promote maternal and newborn well-being. It is vital that maternal parental self-efficacy, social support and postnatal depression are assessed while mothers are still in the hospital so that those who are at risk could be identified and individualized care can be planned and provided to these mothers. Although this intervention programme was only conducted on primiparas, the programme could be used for multiparas to improve postnatal outcomes. Future studies could consider evaluating the programme on this group of mothers.

Seeing the benefits of the programme on mothers, this PPP could be incorporated into routine postnatal care for new mothers. Policy maker could consider placing more efforts on provision of more accessible postnatal care to mothers.

To provide long-term support to the new mothers, web-based psychoeducation programmes could be developed and its cost-effectiveness be tested as compared to the current PPP. Future studies could also test the quality and receptiveness of the programme especially the web-based PPP with different groups of mothers including mothers with lower education level, lower income level and multiparas.

## Conclusions

The present study reports the perceptions of primiparas on the delivery, content, and personal impact of the PPP. Early postpartum period is a stressful transition period for primiparas. The PPP seems to provide a valuable platform for primiparas to acquire knowledge and skills to be competent mothers and opportunities to learn for the entire family especially husbands and significant others in providing needed support to the mothers. Future studies could develop web-based psychoeducational intervention and evaluate its effectiveness and cost-effectiveness for new mothers from different socio-economic background.

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Table 1. Process evaluation semi-structured interview guide

| No. | Probing questions |
|---|---|
| 1. | How did you feel participating in this programme? |
| 2. | What were your main stressors in the early postpartum period?<br>*Probe: How were your first few days with the baby? Did you have any support?* |
| 3. | Did you find the Postnatal Psychoeducation Programme provided to you beneficial especially in enhancing your confidence in newborn care?<br>*Probe: If so how? If not- why not?* |
| 4. | Did you find the Postnatal Psychoeducation Programme provided to you useful in improving your help-seeking behavior?<br>*Probe: If so how? If not- why not?* |
| 5. | Did you find the Postnatal Psychoeducation provided to you useful in improving your mood and decreasing your negative feelings?<br>*Probe: If so how? If not- why not?* |
| 6. | Did you find the Postnatal Psychoeducation provided to you useful in improving the knowledge about newborn care post delivery?<br>*Probe: If so how? If not- why not?* |
| 7. | Did you find the midwife home visit and delivering education at your home environment beneficial?<br>*Probe: If so how? If not- why not?* |
| 8. | Do you think it is worthwhile to spend extra time on receiving this Postnatal Psychoeducation<br>*Probe: Any suggestions for improvement?* |
| 9. | Which aspect of the PPP such as home visit, follow-up phone calls or educational booklet was beneficial for you? |
| 10. | What were the main strengths or weaknesses of the postnatal psychoeducation programme? |
| 11. | How can this programme be improved further and do you think this programme be continued? |

Table 2. Description of participants for the process evaluation (n=18)

| Participant | Age | Ethnicity | Marital Status | Highest Education level | Employment | Monthly Household Income | Antenatal Class Attendance | Type of Birth NVD*/Assisted/LSCS** |
|---|---|---|---|---|---|---|---|---|
| 1 | 32 | Chinese | Married | Degree | No | >S$5000 | No | LSCS |
| 2 | 39 | Chinese | Married | Degree | No | S$3000-S$5000 | No | NVD |
| 3 | 29 | Chinese | Married | Degree | Yes | S$3000-S$5000 | No | NVD |
| 4 | 30 | Indian | Married | Degree | No | S$3000-S$5000 | Yes | NVD |
| 5 | 29 | Filipino | Married | Degree | Yes | S$3000-S$5000 | No | NVD |
| 6 | 32 | Indian | Married | Degree | No | S$3000-S$5000 | Yes | LSCS |
| 7 | 33 | Malay | Married | Secondary Level | No | S$1000-S$3000 | No | NVD |
| 8 | 27 | Chinese | Married | Degree | Yes | >S$5000 | No | LSCS |
| 9 | 26 | Malay | Married | Secondary Level | Yes | S$1000-S$3000 | No | LSCS |
| 10 | 32 | Indian | Married | Degree | No | S$3000-S$5000 | Yes | LSCS |
| 11 | 31 | Chinese | Married | Degree | Yes | S$3000-S$5000 | Yes | LSCS |
| 12 | 27 | Indian | Married | Diploma | Yes | S$1000-S$3000 | No | LSCS |
| 13 | 29 | Chinese | Married | Degree | Yes | >S$5000 | No | NVD |
| 14 | 31 | Malay | Married | Diploma | Yes | S$3000-S$5000 | No | NVD |
| 15 | 28 | Filipino | Married | Degree | Yes | S$3000-S$5000 | No | LSCS |
| 16 | 24 | Chinese | Married | Diploma | Yes | S$3000-S$5000 | No | LSCS |
| 17 | 27 | Indian | Married | Diploma | Yes | S$3000-S$5000 | No | NVD |
| 18 | 23 | Chinese | Married | Diploma | No | S$1000-S$3000 | No | LSCS |

*NVD= Normal Vaginal Delivery **LSCS=Lower Segment Caesarean Section

Table 3. Themes and sub-themes of the findings

| Themes | Sub-themes |
|---|---|
| Challenges in the postnatal period | • Negative emotions<br>• Difficulties in breastfeeding<br>• Lack of knowledge in newborn care<br>• Support Issues<br>• Differences on confinement practices |
| Benefits of participating in PPP* | • Enhanced knowledge on newborn care, self-care & breastfeeding<br>• Enhanced confidence level<br>• Improved help seeking behavior<br>• Enhanced emotional well-being |
| Strengths of PPP* | • Convenient & helpful<br>• Establish trusting relationship with the midwife<br>• Comprehensive educational booklet<br>• Cost saving<br>• Fair and no discrimination service |
| Future Directions | • PPP as routine care<br>• More home-visits<br>• More phone follow-ups<br>• More information in educational booklet<br>• Web-based learning |

Note: *PPP= Postnatal Psychoeducation Programme