

The Benefits of Traditional Postnatal Practices: A Narrative Review of Cultural Beliefs vs Scientific Findings



Siti Fatimah Ab Ghaffar , Irma Izani Mohamad Isa ,
Normaizatul Akma Saidi , Nurul Hafizah Mohd Yasin ,
and Hasif Rafidee Hasbollah 

Abstract This review attempts to explore the traditional postnatal practices based on cultural beliefs and evidence-based benefits. This narrative review involved published quantitative and qualitative studies, review papers and guidelines and review documents by the Ministry of Health Malaysia. A literature search was conducted by using these databases-Medline, Science Direct and Google Scholar. There are some evidences to support some of the postnatal practices in providing physical and psychological benefits to postpartum mothers. For example, postnatal body massage could reduce anxiety and postnatal depression. Breast massage caused a reduction in breast pain from breast engorgement and improved lactation. A hot compress could reduce breast pain and prevent postpartum weight retention. These findings are essential for healthcare providers to support or refute the traditional postnatal practices and allow better integration of traditional postnatal practices into modern medicine. More studies with good research design are needed to evaluate the effectiveness and safety of the traditional postnatal practices.

Keywords Postnatal · Evidence-based · Cultural belief · Benefit · Massage · Abdominal wrap

1 Introduction

The postnatal or postpartum period can be referred to as the period between immediately after delivery and six weeks when the mother's physical health reverts to the pre-pregnancy state (Mathai et al. 2010). This period is critical since most of the death of postpartum mothers and babies occurs during this time (World Health Organisation 2020). Women in their postpartum period also experience a few health issues ranging

S. F. Ab Ghaffar · N. A. Saidi · N. H. M. Yasin (✉) · H. R. Hasbollah
Faculty of Hospitality, Tourism and Wellness, University Malaysia Kelantan, Kota Bharu,
Malaysia
e-mail: hafizah.my@umk.edu.my

I. I. Mohamad Isa
Perdana University-Royal College of Surgeon Ireland School of Medicine, Perdana University,
Kuala Lumpur, Malaysia

from mild problems like exhaustion, weight gain, constipation, and sore breasts to severe problems like wound infection, thromboembolism, haemorrhage and postnatal depression (Mathai et al. 2010). In Asian, it is believed that postpartum women are weak, fragile and vulnerable to illnesses. Therefore, confinement is commonly being practised to restore the mother's physical health status (Withers et al. 2018).

Traditional postnatal practices are widely varied and their uses depend on the cultural beliefs and ethnic groups (Withers et al. 2018; Kim-Godwin 2003). The common postnatal practices across Asian countries are massage, traditional herbs use, beliefs related to hot–cold balance, taboo and superstition (Withers et al. 2018). In Malaysia, the three main races, namely Malays, Chinese and Indians, have unique postnatal practices that are mostly influenced by culture (Fadzil et al. 2016; Mohd Yusoff et al. 2018). However, these three ethnic groups also share certain similar principles such as confinement period length, postpartum diet and massage, and keeping body warmth (Fadzil et al. 2016; Mohd Yusoff et al. 2018).

The Malay traditional confinement practices are believed to provide physiological and psychological support to postpartum mothers and are vital in preventing health problems in later years (Fadzil et al. 2016; Mohd Azmi et al. 2019). The most common type of complementary and alternative medicine used among postpartum mothers to maintain their wellbeing was massage (76.6%), hot stone compress (67.3%), abdominal wrap (61.7%), and followed by herbal medicine (33.1%) (Nik Yusof Fuad et al. 2020). These practices are being passed down by older generations to restore the energy and normal function of reproductive organs and encourage wound recovery and weight loss (Hishamshah et al. 2012; Ministry of Health Malaysia 2020). Despite the various cultural beliefs on the benefit of traditional postnatal care, the scientific findings that evaluating the effectiveness of these traditional postnatal practices are still lacking (Fadzil et al. 2016). The main purpose of this review was to explore the scientific benefits of traditional postnatal practices and compare that with cultural beliefs. To our knowledge, this is the first study that attempts to tackle this objective. Furthermore, the provision of the traditional postnatal service by the government and private sectors was also briefly discussed.

2 Method

This narrative review involved published papers, including quantitative and qualitative studies, review papers, and review and guidelines documents by the Ministry of Health Malaysia available until 2020. An electronic literature search was conducted by using Medline, Science Direct and Google Scholar. Articles that are not written in the English language were excluded. The keywords used for the literature search were postpartum, postnatal, traditional, culture, practice, benefit, effect, massage (or *urut*), hot compress (or *tungku*), abdominal wrap (or *bengkung*) and herbal bath. All papers that were found based on these keywords and in English were included; and not restricted to studies from Malaysia only; since some of those postnatal practices were also being implemented in certain countries, particularly Asian countries.

Reference lists of the previously found papers also provided some additional papers. Papers related to postnatal food or herb consumption were being excluded. Since this is a narrative review, there was no analysis conducted to assess the quality of the study.

3 Results

The findings on culturally perceived benefits vs scientific evidence of traditional postnatal practices were summarised in Table 1.

3.1 *Body and Breast Massage*

In Malay postnatal practice, body massage is usually performed by an experienced midwife for three sessions at the beginning of the confinement period within the first week and three sessions at the end of confinement period (on day 39, 40 and 41). Body massage after childbirth is believed to help realign body weight to the standard weight and toning over-stretched areas of the skin (Ministry of Health Malaysia 2009). Massage is also said to improve blood circulation, eliminate excess fluids, minimize swelling, and accelerate recovery (Ministry of Health Malaysia 2009). However, there are no experimental studies to support the cultural benefits of postnatal massage in improving blood circulation and reducing excess fluids and swelling. The benefit of therapeutic massage in improving blood flow had been reported in sports medicines (Gasibat and Suwehli 2017). However, there are some limitations in the studies, including lack of control group and the device used in measuring the blood flow (Gasibat and Suwehli 2017).

One of the purposes of practising traditional postnatal care is to prevent postnatal depression, also known as '*meroyan*' in Malay. In a cross-sectional study involving 421 postpartum women in Kelantan, the logistic regression model showed that postnatal massage is a protective factor of postnatal depression with an odds ratio of 0.2 (Azidah et al. 2006). The psychological benefits of postnatal massage had also showed in other Asian countries. In Japan, an aromatherapy massage had been proven effective in improving the mental status of postpartum mothers (Imura 2006). In a randomised controlled trial involving sixty Taiwanese postpartum women, back massage was also found to improve the sleep quality of postpartum mothers (Ko and Lee 2014). A recent longitudinal study conducted in a rural area in Pakistan had found *chila* or traditional postpartum practices as a protective factor of postnatal depression, mainly by providing psychological support to postpartum mothers (Lemasters et al. 2020).

Massage is also claimed to help breastfeeding mothers improve the flow and production of breast milk and relieve breast engorgement (Ministry of Health Malaysia 2009). In India, a quasi-experimental study had reported that back massage

Table 1 Summary of cultural beliefs vs evidence-based benefits of traditional postnatal practices

Traditional postnatal practices	Benefits	
	Cultural beliefs	Scientific evidence
Massage	<ul style="list-style-type: none"> • Realigning body weight to the normal weight and toning over-stretched areas of the skin, improves blood circulation that assists the elimination of excess fluids, minimises swelling, accelerates the recovery process (Ministry of Health Malaysia 2009) • Help breastfeeding mothers in improving the flow and production of breast milk, relieving breast engorgement (Ministry of Health Malaysia 2009) 	<ul style="list-style-type: none"> • Improved blood flow in sport medicine although limited evidence (Gasibat and Suwehli 2017) • Reduced breast pain by <i>oketani</i> breast massage and other types of breast massages (Anderson et al. 2019; Witt et al. 2016; Cho et al. 2012) • Improved lactation (Patel and Gedam 2013) • Reduced anxiety and depression among postpartum mother (Azidah et al. 2006; Imura 2006; Lemasters et al. 2020) • Improved the quality of sleep (Ko and Lee 2014) • Increased the secretion of serotonin and dopamine hormones that prevent depression and anxiety, respectively (Field et al. 2004)
Hot compress	<ul style="list-style-type: none"> • Dissolve residual blood clots in the uterus, help it contract, break down fat tissue, and help women’s bodies return to their pre-pregnancy state (Ministry of Health Malaysia 2009) • Massaged in a particular style, to “lift” the womb and prevent it from sagging in old age (Ministry of Health Malaysia 2020) 	<ul style="list-style-type: none"> • Prevent postpartum weight retention (Fadzil et al. 2018) • Decrease breast pain (Ketsuwan et al. 2018)
Abdominal wrap	<ul style="list-style-type: none"> • Provide lower abdominal support and helps realign the spine to its normal shape (Ministry of Health Malaysia 2009) • Restore and deflate the abdomen and regain the original body shape (Mohd Yusoff et al. 2018) 	<ul style="list-style-type: none"> • Increase abdominal muscles strength and decrease waist to hip ratio (El-Mekawy et al. 2013) • Reduce postoperative pain after caesarean delivery (Ghana et al. 2017; Gustafson et al. 2019) • Contrasting findings in preventing postpartum haemorrhage (Ghana et al. 2017; Gustafson et al. 2019)

(continued)

Table 1 (continued)

Traditional postnatal practices	Benefits	
	Cultural beliefs	Scientific evidence
Herbal bath	<ul style="list-style-type: none"> • Postpartum mothers are advised to avoid taking a bath in the early morning to prevent the ‘wind’ from entering the body (Mohd Yusoff et al. 2018) • Practised by the Indian to improved blood flow and reduce fatigue (Fadzil et al. 2016) 	<ul style="list-style-type: none"> • Provide a relaxing effect and help in the recovery of a postpartum woman by their antioxidation, antibacterial, analgesic and anti-inflammatory activities (Panyaphu et al. 2012)

was effective in improving lactation or milk supply, as manifested by increased weight gain of the babies (Patel and Gedam 2013). Different types of breast massage had been proven to help reduce immediate pain and resolve symptoms of blocked mammary duct (Anderson et al. 2019; Witt et al. 2016; Cho et al. 2012). Apart from reducing breast pain, a quasi-experimental study had also shown the effectiveness of *Oketani* breast massage in enhancing suckling conditions of babies (Cho et al. 2012).

3.2 Hot Compress

Hot compress, also known as ‘*bertungku*’ in Malay, can be defined as a point massage on specific body areas like the abdomen, chest, limbs, shoulder and neck (Ministry of Health Malaysia 2009). The ‘*tungku*’ uses an object like river stone or iron, which is heated and placed on some herbal leaves like *Alpinia galangal* (*lengkuas*), *Morinda citrifolia* (*mengkudu*) or *Piper betel* (*sirih*), before it is wrapped with a layer of cloth (Mohd Yusoff et al. 2018) (Fig. 1). Hot compression is believed to dissolve residual blood clots in the uterus and help it to contract (Ministry of Health Malaysia 2009). It is perceived to be suitable for “lifting” the womb and preventing it from sagging in old age (Ministry of Health Malaysia 2020). However, there was no retrievable evidence to support the traditional claims that hot compress can prevent uterine prolapse or stimulate uterine contraction or lochia production.

People also believe that hot compress helps break down fat tissue and help women’s body return to its pre-pregnancy state (Ministry of Health Malaysia 2009). In the regression model of a study, never using hot stone compression together with several other factors including, low physical activity, higher energy intake in the diet and not continuing breastfeeding six months postpartum explained 55.1% variation in weight retention two to six months after the postpartum period (Fadzil et al. 2018). Besides, in a randomized control study in Thailand, hot and herbal compresses also decreased breast pain among postpartum mothers who had breast engorgement (Ketsuwan et al. 2018).

Fig. 1 Hot stone compress or '*tungku*'. A heated ball-like shaped river stone wrapped with herbal leaves for hot stone compression



3.3 Abdominal Wrap

The abdominal wrap is also known as '*bengkung*' or '*barut*' in Malay. The traditional body wrap is a long cloth used to cover the area, starting from just beneath the breastbone down to the thighs (Mohd Yusoff et al. 2018). Nowadays, '*bengkung*' has also been alternatively used as an abdominal binder, girdle and corset (Sajar et al. 2016). Usually, an herbal paste made from specific herbs and spices is smeared on the entire abdomen before the wrapping is done. '*Bengkung*' is tightly wrapped around the women's waist to provide lower abdominal support and help realign the spine to its normal shape (Ministry of Health Malaysia 2009). It is also believed to help in reducing body weight, deflating the abdomen and restoring the original body shape after delivery (Mohd Yusoff et al. 2018).

However, the effect of "*bengkung*" on body weight reduction after delivery was not proven before (Fadzil et al. 2018). Nonetheless, a quasi-experimental study involving thirty Egyptian postpartum women had found that the use of abdominal binder after vaginal delivery led to a 28% higher increment of abdominal muscles strength and 3.4% higher reduction in waist/hip ratio compared to abdominal exercise (El-Mekawy et al. 2013). Besides, based on the results of two randomised controlled

trials, elastic abdominal binder reduced postoperative pain after delivery (Ghana et al. 2017; Gustafson et al. 2019). However, these two studies had reported contrasting findings on the effect of abdominal binder in preventing postpartum haemorrhage (Ghana et al. 2017; Gustafson et al. 2019).

3.4 Herbal Bath

Specific bathing prohibitions or restriction in many cultures could be linked to the 'hot' and 'cold' beliefs (Dennis et al. 2007). The herbal bath provides an alternative to bathing restriction due to these beliefs and can expose the body of the postpartum mother to the heat (Kim-Godwin 2003). In Malay culture, warm bathing is allowed, although postpartum mothers are advised to avoid taking a bath in the early morning to prevent the 'wind' from entering the body (Mohd Yusoff et al. 2018; Dennis et al. 2007). The water used in the herbal bath needs to be warm or hot and is added with various herbs such as *Desmodium gangeticum* (*daun meringan*) (Mohd Yusoff et al. 2018).

Among the Indians, an herbal bath immersed with many different leaves is practised to improve blood flow and reduce fatigue (Fadzil et al. 2016). A study reported that the medicinal plants used in the preparation of herbal baths in a community in Northern Thailand contain phytochemicals that have antioxidation, antibacterial, analgesic and anti-inflammatory activities (Panyaphu et al. 2012). The phenolic compounds and flavonoids may help in the immunity and recovery of the postpartum woman by their antioxidation activities. Besides, the good-smelling volatile oils in hot water can increase blood circulation, clear airways and make one feel relaxed (Panyaphu et al. 2012).

4 Discussion

4.1 The Physical and Psychological Benefits of Postnatal Practices

From the modern medical perspective, certain traditional postpartum practices may positively affect health by providing good rest, nourishment, and appropriate hygiene (Dennis et al. 2007). In Malaysia, among all the traditional postpartum practices being studied, hot stone compression was the only practice found to have a role in weight loss at six months after childbirth (Fadzil et al. 2018). The hot stone compression is usually concentrated in the abdominal area, thus allowing more fat burning in this area. Besides, the support provided by an abdominal wrap or binder can lead to increased abdominal muscles strength (El-Mekawy et al. 2013). This effect seems to justify the benefit of abdominal wrap in supporting the spine and improving posture.

Pain reduction is another important outcome of these postnatal practices. Postpartum women suffer considerable pain during postpartum period from Caesarean operation, perineal tear, episiotomy wound, epidural injection site and breast engorgement. The use of an abdominal binder can help to alleviate the pain from Caesarean operation through circumferential compression to reduce stress on the surgical wound during movement and walking (Gustafson et al. 2019). Nonetheless, a review had mentioned the need for more studies to investigate its effect in managing pain and improving mothers' functional capacity during the postnatal period (Szkwara et al. 2019). Besides, breast massage and hot compresses help to relieve breast pain resulting from breast engorgement, plugged ducts and mastitis.

WHO recommendation had pointed out the importance of assessing both emotional wellbeing and social support of the postpartum mothers and families (Mathai et al. 2010). Postnatal depression is the most common psychological problem among postpartum mothers. In Malaysia, the prevalence of postnatal depression was ranging from 6.8% to 27.3% (Mohd Arifin et al. 2018). A review had reported that the lack of social support during the postpartum period could significantly contribute to postnatal depression (Norhayati et al. 2015). The good side of massage therapy is that it can prevent postnatal depression, anxiety and sleep problem among postpartum mothers. Massage produces these calming and relaxing effects by increasing serotonin and dopamine hormones and reducing cortisol levels in mothers with depression and anxiety (Field et al. 2004). In line with the WHO recommendation of exclusive breastfeeding for the first six months of a baby's life, breast massage helps to increase milk production through its relaxation effect (Patel and Gedam 2013).

The protective effect of massage in reducing postnatal depression risk could indirectly be due to social support gathered during massage sessions (Azidah et al. 2006). By having a postnatal massage or observing postnatal practices, postpartum mothers can have more access to social support, thus reducing the incidence of postnatal depression. Most importantly, massage during the postpartum period, is generally safe and a study had reported that there was no mother or child physical harm or adverse events that had occurred from that (Fogarty et al. 2019). However, some side effects that might occur post massage procedures include temporary pain, discomfort, bruising, swelling, and allergic reactions to massage oils (Ministry of Health Malaysia 2019).

4.2 Integration of Traditional Postnatal Care into Modern Medicine

Most women in Malaysia believe in the importance of observing traditional postnatal practices to avoid ill health in later life (Fadzil et al. 2016). Furthermore, studies in the local population had reported the high prevalence of utilisation of postnatal care practices (Nik Yusof Fuad et al. 2020; Hishamshah et al. 2012). The Ministry of Health Malaysia is keen to promote safe practices in Malay postpartum care

according to the WHO Traditional Medicine recommendation (Ministry of Health Malaysia 2020; WHO Traditional Medicine Strategy 2002-2005 2020). This stand had led to the setting-up of integrated Traditional and Complementary Medicine (T&CM) units in hospitals throughout Malaysia. This integration aimed to promote health in postpartum mothers and avoid harmful beliefs or practices that can badly affect postpartum mothers and babies (Ministry of Health Malaysia (2009).

The postnatal wellness massage and midwifery care services are offered in a few government hospital settings and are free of charge (Ministry of Health Malaysia 2009). The midwifery care service is similar to traditional postnatal care and consists of whole-body massage, hot compress and body wrap. However, the coverage and accessibility to the midwifery service under T&CM are limited since a few selected hospitals provide it and conducted only in hospital settings (Ministry of Health Malaysia 2020; Raja Ikram and Abd Ghani 2015). Moreover, there is a lack of integration between the T&CM and modern medicine where both systems are being treated in isolation (Raja Ikram and Abd Ghani 2015). An integrated service via electronic health records was proposed to standardize information exchange between modern and traditional medicine providers (Raja Ikram and Abd Ghani 2015). Apart from that, little is known about other factors, such as awareness, accessibility and resource, which could influence the utilisation of the midwifery care service provided by the government hospital.

4.3 Private Postnatal Service

Since the postnatal care practice is still highly observed among Malaysian women, there is also a high demand for private postnatal services. This had led to the setting up of many private postnatal care centres in Malaysia nowadays. Postnatal care service is exceptionally well-received in the Chinese community (Mohd Yusoff et al. 2018). There is also a rapid expansion of the utilisation of private postnatal care services by the Malay community. One example of postnatal care service is MamaCare, a program by the National Population and Family Development Board, Malaysia. This program offers a holistic postnatal care service designed to optimize the wellness status of postpartum mothers and families. Additionally, MamaCare programme also gives postnatal care training for older women and single mothers from low-income families.

The postnatal service by private centres is delivered by a trained confinement lady taking care of both the mother and new-born baby. The confinement lady will accompany the mother during the day or stay together at the mother's house to attend to the mother's needs like bathing, preparing "confinement" meals and helping out with simple house chores like cleaning and laundry. For the Chinese community, most of the service operates at the postnatal centres, where the postpartum mother will receive such treatments. The services offered for Malay postnatal care, are body massage, herbal bath, hot compress and body wrap. For all these services, the charge can be very costly.

Although the factors contributing to using private postnatal care service are unknown, this could be influenced by demographic and economic factors (Mohd Yusoff et al. 2018). In Singapore, postpartum women in the urban setting particularly described their husbands as their main support source. They did not rely only on their mother or mother-in-law for support during the postnatal period (Naser et al. 2012). This also means that the husbands have a big responsibility in taking care of the baby. These women are also somewhat lenient in practising confinement. This trend may cause the mothers to feel a lack of support and isolated (Fadzil et al. 2016). These factors indicate a strong need for additional support and care for postpartum mothers, particularly those living in urban area. Therefore, the private postnatal service serves as an alternative option for this situation.

One of the limitations of this study lies on the heterogeneity of the research types and study design. For example, different research types were included, whether it is qualitative or quantitative. In term of study design, this review included both intervention study and cross-sectional study. Another limitation of this review is that it included studies that were conducted in different populations or settings. This is because there is possibility of discrepancies in the implementation of such postnatal practices in different populations. For example, postnatal massage would differ in term of the technique, duration and substances or massage oil used for the massage. Therefore, this factor could reduce the generalisability of the study findings. Future studies have to address these issues in order to produce more quality research in postnatal practices.

5 Conclusion

The present study reported scientific findings of traditional postnatal practices. This study found that the physical benefits provided by the traditional postpartum practices are mainly related to weight loss and pain reduction. Whereas, the importance of these traditional postnatal practices lies on their psychological impacts in reducing anxiety and postnatal depression among the postpartum mothers. Some of these benefits are parallel to the WHO recommendations pertaining to postnatal care that include exclusive breastfeeding and providing social support. However, there is limited or no retrievable evidence to support or refute some other traditionally claimed benefits of the practices.

This information will also help healthcare providers to support the traditional postnatal practices, thus allowing better integration of traditional postnatal practices into modern medicine. Since postnatal care practice is still highly observed among Malaysia women, integrating the two systems would enable individuals to have respectful, cost-effective and effective access to traditional medicine. More local studies of high quality are needed to evaluate such practices' effectiveness and safety. Future studies in this area can also evaluate the factors associated with the provision and utilisation of postnatal care by the government and private sectors.

Acknowledgements We acknowledge the continuous support granted by the Dean of Faculty of Hospitality, Tourism and Wellness, University Malaysia Kelantan to this study.

References

- Mathai, M., Von Xylander, S., Zupan, J., Mathai Matthews, Z.J., Zupan, J.: WHO technical consultation on postpartum and postnatal care. World Health Organisation, pp. 1–56 (2010) World Health Organisation. <https://doi.org/9789241506649>. Accessed 20 Nov 2020
- Withers, M., Kharazmi, N., Lim, E.: Traditional beliefs and practices in pregnancy, childbirth and postpartum: a review of the evidence from Asian countries. *Midwifery* **56**, 158–170 (2018)
- Kim-Godwin, Y.S.: Postpartum beliefs & practices among non-western cultures. *MCN Am. J. Matern. Nurs.* **28**, 74–78 (2003)
- Fadzil, K., Shamsuddin, F., Wan Puteh, S.E.: Traditional postpartum practices among Malaysian mothers: a review. *J. Altern. Complement. Med.* **22**, 503–508 (2016)
- Mohd Yusoff, Z., Amat, A., Naim, D., Othman, S.: Postnatal care practices among the Malays, Chinese and Indians: a comparison. In: SHS Web of Conferences, vol. 45, pp. 1–6 (2018)
- Mohd Azmi, N.A., Abdul Rahim, N.A., Omar, E.A.: Malay traditional practices surrounding the postpartum period: a qualitative case study. *Evid. Midwifery* **17**(2), 40–46 (2019)
- Nik Yusof Fuad, N.F., Ching, S.M., Awg Dzulkarnain, D.H., Cheong, A.T., Zakaria, Z.A.: Complementary alternative medicine use among postpartum mothers in a primary care setting: a cross-sectional study in Malaysia. *BMC Complement. Med. Ther.* **20**, 197 (2020)
- Hishamshah, M., et al.: Belief and practices of traditional post partum care among a rural community in Penang Malaysia. *Internet J. Third World Med.* **9**, 1–9 (2012)
- Ministry of Health Malaysia. www.moh.gov.my/index.php/database_stores/attach_download/348/267. Accessed 20 Nov 2020
- Ministry of Health Malaysia, Traditional and Complementary Medicine Practice Guideline on Malay Postnatal Care (2009)
- Gasibat, Q., Suwehli, W.: Determining the benefits of massage mechanisms: a review of literature. *Artic. J. Rehabil. Sci.* **2**, 58–67 (2017)
- Azidah, A.K., Shaiful, B.I., Rusli, N., Jamil, M.Y.: Postnatal depression and socio-cultural practices among postnatal mothers in Kota Bharu, Kelantan, Malaysia. *Med. J. Malaysia* **61**, 76–83 (2006)
- Imura, M.: The psychological effects of aromatherapy-massage in healthy postpartum mothers. *J. Midwifery Women's Heal.* **51**, 21–27 (2006)
- Ko, Y.L., Lee, H.J.: Randomised controlled trial of the effectiveness of using back massage to improve sleep quality among Taiwanese insomnia postpartumwomen. *Midwifery* **30**, 60–64 (2014)
- Lemasters, K., et al.: Maternal depression in rural Pakistan: the protective associations with cultural postpartum practices. *BMC Public Health* **20**, 1–13 (2020)
- Patel, U., Gedam, S.: Effect of back massage on lactation among postnatal mothers. *Int. J. Med. Res. Rev.* **1**, 5–11 (2013)
- Anderson, L., Kynoch, K., Kildea, S., Lee, N.: Effectiveness of breast massage for the treatment of women with breastfeeding problems: a systematic review. *JBHI Database Syst. Rev. Implement. Rep.* **17**, 1668–1694 (2019)
- Witt, A.M., Bolman, M., Kredit, S., Vanic, A.: Therapeutic breast massage in lactation for the management of engorgement, plugged ducts, and mastitis. *J. Hum. Lact.* **32**, 123–131 (2016)
- Cho, J., Ahn, H.Y., Ahn, S., Lee, M.S., Hur, M.-H.: Effects of oketani breast massage on breast pain, the breast milk pH of mothers, and the sucking speed of neonates. *Korean J. Women Heal. Nurs.* **18**, 149–155 (2012)
- Fadzil, F., et al.: Predictors of postpartum weight retention among urban Malaysian mothers: a prospective cohort study. *Obes. Res. Clin. Pract.* **12**, 493–499 (2018)

- Ketsuwan, S., Baiya, N., Paritakul, P., Laosooksathit, W., Puapornpong, P.: Effect of herbal compresses for maternal breast engorgement at postpartum: a randomized controlled trial. *Breastfeed. Med.* **13**, 361–365 (2018)
- Sajar, N., Aziz, A.A., Aris, A.: Malay *Bengkung*: traditional to contemporary design. In: Anwar, R., Mahamood, M., Md. Zain, D., Abd Aziz, M., Hassan, O., Abidin, S. (eds.) *Proceedings of the Art and Design International Conference (AnDIC 2016)*, pp. 63–71. Springer, Singapore (2018). https://doi.org/10.1007/978-981-13-0487-3_8
- El-Mekawy, H., Eldeeb, A., El-Lythy, M., El-Begawy, A.: Effect of abdominal exercises versus abdominal supporting belt on post-partum abdominal efficiency and rectus separation. *Int. Sci. Index.* **7**, 44–48 (2013)
- Ghana, S., Hakimi, S., Mirghafourvand, M., Abbasalizadeh, F., Behnampour, N.: Randomized controlled trial of abdominal binders for postoperative pain, distress, and blood loss after cesarean delivery. *Int. J. Gynecol. Obstet.* **137**, 271–276 (2017)
- Gustafson, J.L., Dong, F., Duong, J., Kuhlmann, Z.C.: Elastic abdominal binders reduce cesarean pain postoperatively. *Kansas J. Med.* **11**, 48–53 (2019)
- Dennis, C.L., Fung, K., Grigoriadis, S., Robinson, G.E., Romans, S., Ross, L.: Traditional postpartum practices and rituals: a qualitative systematic review. *Women's Heal.* **3**, 487–502 (2007)
- Panyaphu, K., Sirisa-ard, P., Ubol, P.N., Nathakarnkitkul, S.: Phytochemical, antioxidant and antibacterial activities of medicinal plants in Thailand as post partum herbal bath. *Phytopharmacology* **2**, 92–105 (2012)
- Szkwara, J.M., Milne, N., Hing, W., Pope, R.: Effectiveness, feasibility, and acceptability of dynamic elastomeric fabric orthoses (DEFO) for managing pain, functional capacity, and quality of life during prenatal and postnatal care: a systematic review. *Int. J. Environ. Res. Public Health* **16** (2019)
- Mohd Arifin, S.R., Cheyne, H., Maxwell, M.: Review of the prevalence of postnatal depression across cultures. *AIMS Public Heal.* **5**, 260–295 (2018)
- Norhayati, M.N., Nik Hazlina, N.H., Asrenee, A.R., Wan Emilin, W.M.A.: Magnitude and risk factors for postpartum symptoms: a literature review. *J. Affect. Disord.* **175**, 34–52 (2015)
- Field, T., Diego, M.A., Hernandez-Reif, M., Schanberg, S., Kuhn, C.: Massage therapy effects on depressed pregnant women. *J. Psychosom. Obstet. Gynecol.* **25**, 115–122 (2004)
- Fogarty, S., McInerney, C., Stuart, C., Hay, P.: The side effects and mother or child related physical harm from massage during pregnancy and the postpartum period: an observational study. *Complement. Ther. Med.* **42**, 89–94 (2019)
- Ministry of Health Malaysia, *Traditional and Complementary Medicine Practice Guideline on Malay Massage* (2019). <http://tcm.moh.gov.my/v4/pdf/guideline/MALAYTRADITIONAL.pdf>
- WHO Traditional Medicine Strategy 2002–2005. <https://doi.org/WHO/EDM/TRM/2002.1>. Accessed 23 Nov 2020

- Raja Ikram, R.R., Abd Ghani, M.K.: A framework for integrated postnatal care services for traditional Malay medicine and modern medicine. *Int. J. Appl. Eng. Res.* **10**, 4939–4947 (2015)
- Naser, E., Mackey, S., Arthur, D., Klainin-Yobas, P., Chen, H., Creedy, D.K.: An exploratory study of traditional birthing practices of Chinese, Malay and Indian women in Singapore. *Midwifery* **28**, 865–871 (2012). <https://doi.org/10.1016/j.midw.2011.10.003>

Sustainable Finance, Innovation and Business Uncertain Situations