ABSTRACT
In order to examine hypnotherapy, the psycho-physiological science underpinning the practice is an important issue and is significant for the use of hypnotherapy by women in labour and birth. Contemporary literature regarding hypnotherapy and its' side effects and limitations focuses on the culture inherent in hypnotherapy ideology, whilst the pertinent ethical issues that arise and question its alignment with the contemporary midwifery perspective are an important factor within midwifery care. While it is possible for women to undertake hypnotherapy through self-taught measures, this paper will focus on women purchasing the CAM therapy, including the services of a supportive hypnotherapist who trains and partners with women antenatally and through their labour and birth.

Keywords: hypnotherapy, complementary, alternative, antenatal, labour, natural birth, pain

INTRODUCTION
The increasing popularity of complementary and alternative medicine (CAM) in labour and birth may be a sign that many women are rejecting the medicalisation of birth in developed nations (Sullivan & McGuiness, 2015). The objective obstetric outlook on women and their maternal care has resulted in high rates of invasive medical interventions such as caesarean sections and epidural analgesia, which persist today. These interventions are now recognised as interfering with the natural processes of labour and birth that can lead to a cascade of further interventions and hold potential for significant adverse effects upon the woman and baby. Women are now seeking more control over their labour and birth, and to choose alternative coping techniques for labour pains that are less invasive and exhibit a more naturalistic approach (Varner, 2015). Nearly half of the world’s women of reproductive age use CAM (Sullivan & McGuiness, 2015), with 37% of pregnant women and 28% of postpartum women in the United States of America (USA) using CAM within a period of 12 months (Birdee, Kemper, Rothman, & Gardiner, 2014). Of all the CAM therapies chosen by women for labour and birth within the literature, hypnotherapy is among "the most commonly cited CAM practices used for pain management in labour" (Sullivan & McGuiness, 2015, p. 10).

Hypnotherapy for labour and birth is based upon the premise that a woman’s fear and stress of labour and birth leads to muscle tension and ultimately increased pain which incites further fear and stress, continuing the cycle (Phillips-Moore, 2012). Using Hypnotherapy, a woman can be taught to work with her body’s natural processes in order to reduce feelings of fear, helplessness, tension and pain. This will reduce the need for invasive obstetric procedures and thus achieve a more positive experience in which she retains a greater level of control. Hypnotherapy does not promise to eradicate labour...
pains but only to reduce their dominance and associated negative consequences. Typically, hypnotherapy is taught to and practiced by the woman during the antenatal period with the assistance of a supportive advocate who follows the woman through labour and birth where they assist the inducing, deepening and sustaining of hypnosis (Beebe, 2014, p. 52). Alternatively, the therapy can be self-taught and practiced with the assistance of audio-recordings. The hypnosis itself is a state similar to meditation or trance where the woman's attention becomes focussed yet she is highly responsive to verbal therapeutic messages or suggestions (Guittier et al., 2013). Through these practiced techniques, the labouring woman can increase the satisfaction of her labour and birth experience (Madden, Middleton, Cyna, Matthewson, & Jones, 2016).

The Psycho-physiological Science of Hypnotherapy

There are two paradigms of labour pain which consist of the ‘pain relief paradigm’ and is associated with obstetric intervention that sees labour pains as unnecessary and barbaric, whereas the ‘working with pain paradigm’ is associated with an acceptance of labour pains as normal physiology and the idea that women can cope or minimise this pain through a naturalistic and holistic approach (Leap & Anderson, 2008, p. 4). Hypnotherapy is considered as part of this second paradigm, to help women cope with the pain of labour as opposed to pharmacological interventions that aim to relieve or remove the pain of labour (Jones, 2012).

Although women subjectively report their labour pains in differing severity and location, they can be empirically described as originating in the contractions and distensions of uterine and cervical tissues during the first stage of labour (Rich, 2016). These pains are transmitted along spinal nerves T10-L1 and referred to the abdomen, buttocks, thighs, and lumbosacral regions. The second stage of labour adds to this with cervical stretching, and vaginal and perineal distension pains that utilise the pudendal nerves that enter the spinal cord at S2-S4 (Jones, 2012). Traditionally, these bodily changes can be objectively mapped and recorded. Positron emission tomography is a neuro-imaging technology that has been used more recently to map the physiological changes in a woman’s brain when she uses hypnotherapy. The result was the discovery that suppression of neural activity "between the sensory cortex and the amygdala-limbic system [appeared] to inhibit the emotional interpretation of sensations being experienced as pain" (Jones, 2012, p. 5). This means that the physiological processes of labour pain are real and do occur; yet through hypnosis, while women are unable to eliminate their pain, they can control their specific perceptions of it. Significantly, women control their pain not through an invasive intervention done to them by obstetric or midwifery staff, but through a non-invasive intervention that they control and manipulate themselves.

Phillips-Moore (2012) describes a pervasive fear of labour and birth for women, and especially the fear of pain itself as a cyclic and self-fulfilling order of events. This fear that may be related to a lack of knowledge and understanding, or from previously experienced pain, leading to natural activation of the body’s sympathetic nervous system and associated stress hormones. This in turn, gives resistance and tension to the muscles intended to relax in labour and birth; it constricts and shunts blood away from the uterus, vagina and perineum; all of which serve to increase further anxiety, pain, tension in a positive feedback response to the fear that started the cycle. Importantly, this also impacts upon the foetus who is affected by the redirected blood flow bringing nutrients and who also absorbs the woman’s stress hormones such as cortisol, which interferes with its normal growth and development (Phillips-Moore, 2012). The significance is that resulting complications such as low birth weight and foetal distress then impact upon the woman's chances of normal physiological birth and also feed directly back into this fear-cycle.

With hypnosis, the link between mind and body is encouraged by teaching women to enter into a meditative state where critical thinking and conscious states are suppressed allowing for suggestions to directly enter the subconscious mind to alter her body and physiological responses (Phillips-Moore, 2012). These suggestions are made by her or others and positively
reinforce the notion of working with her own birthing body through relaxation. The idea is for the woman to fully control her own birthing process at a level of comfort that she determines. There are also rhythmical breathing techniques that have been previously demonstrated to release natural opiates like oxytocin from the woman’s body, and the controlled breathing rhythm appears to give the woman control over their release (Steel, Frawley, Sibbritt, Broom, & Adams, 2016).

There are two further aspects of hypnotherapy which both include an antenatal focus and continuity of care. The first is the required antenatal education of the physiology of labour and birth in order to eliminate the woman’s fear of the unknown, and the second is the ongoing support of a hypnotherapist who assists the woman in practising the technique and providing suggestions in labour, whether it is in person or by virtual representation through audio recordings (Streibert, Reinhard, Yuan, Schiermeier, & Louwen, 2015).

Clearly hypnotherapy holds significance and is attractive for a woman in medicalised societies where a fear of childbirth and the ‘pain relief paradigm’ is dominant. This is because hypnotherapy claims to firstly hold an answer to why the woman’s body undergoes pain and discomfort during childbirth, secondly it promises to provide a means of empowerment for the woman where she at some level controls her mind, body and the birthing process, and lastly, it is a means of providing consistent and continuity of care. Prior research has repeatedly emphasised the importance of continuity of care for the woman in reducing the use of pharmacological pain relief and increasing the chances of births that require no invasive interventions (Mitchell, 2013).

**Policy Inclusion**

As a CAM therapy, hypnosis lacks any conclusive research evidence-base that would enable it as a stand-alone practice, in particular for pain management in labour and birth, as the contemporary literature on hypnotherapy as a whole questions its efficacy and disputes prior research. A Cochrane systematic review of seven trials randomising 1213 women discovered no significant differences between hypnotherapy groups and the control groups in labour and birth pain (Madden et al., 2016). It reported that there were no differences in additional drug use for analgesia; no differences in terms of births whether natural versus interventions used; no differences in women’s satisfaction with their method of pain relief; and importantly, no differences in satisfaction of birth experience. Another Cochrane overview of systematic reviews on pain management for women in labour found that while hypnosis may appear safe and non-invasive for women, there is still insufficient evidence for its efficacy especially when compared to invasive forms of pain management such as epidurals (Jones, 2012). Furthermore, additional studies found that hypnotherapy did not affect self-reported pain scores in labouring women; it did not reduce epidural analgesia use or other pharmacological analgesia use in general; there was no difference in modes of birth or augmentation of labour; and that it may be somewhat useful for generalised labour pain but not for heightened labour pain (Cyna et al., 2013; Flood & Leung, 2013; Marsh, 2013; Werner, Uldbjerg, Zachariae, Rosen, & Nohr, 2013).

Based on these results, there are no recommendations for hypnotherapy as a stand-alone therapy during labour and birth. The failure of hypnotherapy to hold up in the contemporary literature can be attributed to common flaws in the methodology of these studies. These flaws or limitations are consistently reported as the lack of standardising in different versions of hypnotherapy; these versions are usually insufficiently described; and the small, non-representable sample sizes combined with a lack of random assignments (Beebe, 2014; Werner et al., 2013). Furthermore, if reported pain is multidimensional and inconsistent across women, and if hypnotherapy is a subjective practice due to the differences in sub-conscious states, then it follows that the study and practice of hypnotherapy itself remains inherently inconsistent and to a large extent, unpredictable. This limitation has been commented on when observing studies that measure hypnotherapy, by the reduction of pain using objective, mostly quantitative research for something that is subjective and in need of
Nevertheless, while hypnotherapy does not appear to reduce interventions during labour and birth nor affect pain management, the research did consistently report a positive experience for women in general leading researchers to conclude that hypnotherapy does produce positive attitudes and resilience to stressful interventions or emergencies (Streibert et al., 2015; Werner et al., 2013). This results as an important compatibility between invasive interventions such as epidural analgesia and hypnotherapy. Therefore, hypnotherapy would be ideal to be used in conjunction with current midwifery and obstetric care during labour and birth but due to its questionable efficacy in the literature, not as a stand-alone therapy. There is no current agreed-upon recommendation for hypnotherapy in labour and birth, yet increasingly in the literature midwives are exhorted to provide avenues where women can access hypnotherapy and for its role within clinical policies and standards for maternal care. The literature suggests that pending further research to empirically prove its efficacy, hypnotherapy as a CAM has the opportunity to enhance the labouring and birthing process for women, and as the main professional care provider, midwives are in a position to facilitate its inclusion into care (Baker, 2013; Gavin-Jones & Handford, 2016; Graves, 2012; Ireland, 2015). Unfortunately, again due to the need for further research on hypnotherapy, there are no agreed upon policies or guidelines in the literature. There is concern described by Beebe (2014) that even with the promise for inclusion into policy, hypnotherapy would have to overcome several institutional barriers such as routine obstetric interventions and continuous electronic foetal monitoring, that would disrupt the therapy and reduce its’ effect.

**Side Effects and Limitations**

While no adverse events have been reported in the contemporary literature, there are minor side effects reported along with several limitations around hypnotherapy. These include brief headaches, anxiety and amnesia, and for those with prior mental illness, hypnotherapy holds a theoretical risk of exacerbating psychoses (Bebe, 2014). Madden et al. (2012) reported incidences of postnatal anxiety and compulsive behaviour in women who used hypnosis; and a study involving 1835 Australian women who used CAM, that were similar to hypnotherapy such as meditation and relaxation practices, found they were associated with an heightened risk of the women experiencing emotional distress with labour (Steel et al., 2016). This study reasons that women who are involved with CAM practices are more likely to view their pregnancy as controllable with a lower perception of risk and therefore, if complications arise or interventions are needed beyond what is expected, these women experience greater levels of anxiety and distress. Therefore, hypnotherapy holds a comparable risk due to the nature of its low risk focus and implied physiological birth when women purchase the therapy.

The reported limitations describe hypnotherapy being costly and time-consuming (Terry & Werner, 2013). The cost for the therapy can be significant depending on whether the woman chooses to employ a hypnotherapist to partner with her through the pregnancy, or if she attends antenatal classes. There are websites that sell an audio hypnotherapy and written materials as well, yet with no government or non-government subsidies this means that the therapy is not strictly equitable as those from lower socio-economic backgrounds may not be able to afford these costs. Additionally, the written and audio material is mostly in English limiting access from those of different languages and cultures, and there are no options for those with sensory deficits or poor literacy (Beebe, 2014). In terms of time, the literature reports a significant quantity of study materials to be practiced at home in addition to several antenatal preparation classes that can last several hours each visit (Terry & Werner, 2013).

A significant limitation was identified in examination of a popular brand of hypnotherapy called “HypnoBirthing”, where the classes women paid for does not include “discussion of the dangers in pregnancy, medication use, complications, or caesarean surgery” because this would induce fear of childbirth "instead of
accomplishing the intended goal of education” (Varner, 2015, p. 133). This critical omission could be the reason behind the distress in women whereby women are not prepared for, or aware of possible risks associated with the therapy or labour and birth itself (Steel et al., 2016). This also raises an important ethical dilemma where any process of informed consent in labour and birth, or in any hypnobirthing agreements and contracts could be severely undermined because women are unaware of the risks associated.

Another limitation is the midwife, and the risk of interference midwives pose to the focused attention of hypnosis by keeping women mindful of their labour and pain through regular examinations and monitoring of the woman and foetus. This disrupts the focussed meditative state of the woman and interferes with suggestions or images meant to relax her (Beebe, 2014). This theoretical risk of midwifery clinical care has produced a substantial number of studies describing and instructing midwives in how they can best support women who use hypnosis by being mindful of the practice themselves and minimising interruptions (Baker, 2013; Rose Wilson & Dillard, 2012; Tiran, 2014). The consistent description of midwifery care as interference and even as an “institutional barrier” by the hypnotherapy literature raises pertinent issues on how the culture surrounding hypnotherapy impacts on contemporary midwifery care (Beebe, 2014, p. 55).

Hypnotherapy Culture and Issues

The benefits of hypnotherapy range from antenatal preparation and education, empowerment of the woman through choice and control, and in many cases, provision of an advocate who supports the woman throughout labour and birth (Sullivan & McGuiness, 2015). All of these aspects are entrenched in the culture that surrounds hypnobirthing as a CAM therapy yet this raises pertinent issues for discussion.

The listed benefits of hypnotherapy includes the belief that pregnancy is a state that heightens the woman’s sensitivity and receptivity to hypnosis, and the suggestion that hypnotherapy could potentially become a ubiquitous practice across low-tech and high-tech environments (Beebe, 2014). The issue of concern is that these two factors highlight the risks of manipulation and abuse that women open themselves to that could occur at any stage of the labour and birth. Specifically, hypnotherapy has already been explained as suppressing the critical conscious mind of the woman and heightening the subconscious mind that is open to external suggestion, which can then directly impact the woman’s bodily response. Without the ostensible possession of conscious and critical function, and despite it being a voluntary state the woman entered into, any poorly guided, ill-trained, negligent or malevolent suggestions would theoretically hold significant consequences for the woman and her foetus. There is currently no research on this risk, nor is there any comment in the literature on a governance system that could mitigate this risk.

While hypnotherapy is championed as a reaction to the pain relief paradigm and more closely aligned to the working with pain paradigm, there is argument to say it feeds directly into both, presenting the ethical dilemma that the woman is presented with an escape from invasive pharmacological pain-relief interventions for a non-pharmacological pain-relief, at a monetary cost and without knowledge of true risks. There is a clear implication made by hypnotherapy that women can experience a significant “reduction in labour pain” through specific technique (Beebe, 2014, p. 53). Furthermore, hypnotherapists charge a fee for their services and if the particular brand of hypnotherapy the woman purchases does not include discussion of the potential risks and complications that labour and birth entail out of concern it will illicit childbirth-fear, then the unsuspecting woman is not truly empowered, not fully informed. In turn, these vulnerable women who are unaware of any associated risks, potentially compounded by limited medical or midwifery antenatal care, therefore expect a low-pain and controllable birth experience and could find themselves in severe distress and anxiety when complications do arise.

Research has added to the complexity of this ethical problem by suggesting that hypnotherapy is merely an effective placebo that coerces women into belief (Rose Wilson & Dillard, 2012). Despite the argument also aligning the placebo effect with a positive result for the
woman, ethically, all women intending to use hypnotherapy should be informed of such research before they commit to any monetary cost.

CONCLUSION

Hypnotherapy is a CAM therapy that is increasing in popularity with women and representing a shift in the paradigms of labour pain and the woman's body in working with it. While there is significant dispute in the contemporary literature as to the effectiveness of the therapy in terms of pain relief and birth satisfaction due to its subjective nature, there is acknowledgement that hypnobirthing does promote resilience and a positive attitude in labouring women. On this basis, there is opportunity for its inclusion as a conjunctive therapy. There are several ethical concerns surrounding the limitations of hypnotherapy, specifically around the cost, lack of equitable services, and reports of hypnotherapy not divulging all the available information to women who pay for the service. Further research is also recommended in the inclusion of hypnotherapy into clinical policies and governance, and the possible adverse outcomes, abuses or negligence that hypnotherapy or the women who use it may find themselves susceptible toward.

Conflict of interest statement

There are no conflicts of interest either financial or otherwise. There are no kinds of associations, such as consultancies, stock ownership, or other equity interests or patent-licensing arrangements by either authors.

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