



Midwives' experiences using a peanut ball for women during labour: A qualitative study^{☆,☆☆}

Virginia Stulz^{a,*}, Anushka Dashputre^b, Heather Reilly^c

^a Centre for Nursing and Midwifery Research, Nepean Hospital, Western Sydney University & Nepean Blue Mountains Local Health District, Nepean Blue Mountains Local Health District, PO Box 63, Penrith, NSW 2751, Australia

^b Western Sydney University, PO Box 63, Penrith, NSW 2751, Australia

^c School of Nursing and Midwifery, Western Sydney University, NSW 2745, Australia

ARTICLE INFO

Keywords:

Peanut ball
Midwifery
Qualitative research
Labour
Positioning during labour

ABSTRACT

Objective: To gain insight into the benefits, shortcomings, and practical considerations when using the peanut ball for women during labour.

Design & setting: We used a descriptive qualitative approach using semi-structured, in-depth interviews to explore the experiences of eight midwives working in a tertiary hospital birth unit in New South Wales, Australia when using the peanut ball for women during labour.

Participants: Participants were recruited from the birthing unit of a tertiary hospital in New South Wales. The final sample included eight midwives working in the birth unit.

Findings: Three overarching themes were identified: 'Education and encouragement', 'benefits and disadvantages of peanut ball' and 'techniques'. The 'Education and encouragement' theme included three sub-themes: 'selling it to the woman', 'educating midwives' and 'becoming usual practice and improving confidence'. The 'Benefits and disadvantages of peanut ball' theme included two sub-themes: 'facilitates labour and birth' and 'discomfort'. The 'Techniques' theme included three sub-themes: 'positioning', 'sizing' and 'using alternative techniques'. Midwives are confident in their practice with the peanut ball and acknowledge the importance of educating midwives and women to promote its use. Midwives also discussed favoured techniques when using the ball, especially relating to size and maternal positioning.

Conclusion: Our study provides insight into midwives' experiences about using a peanut ball for women during labour. The midwives reported that the peanut ball encourages vaginal births and shortens labour times, whilst enabling women to participate actively in the birth. Education for midwives and women is vital for using peanut balls.

Implications for practice: Peanut balls are not usual practice in birthing units in Australia and they are a novel intervention to improve labour and birthing outcomes for women, especially when using an epidural.

Introduction

Peanut balls have been proposed as a novel intervention to improve labour and birth outcomes for women. While birthing balls have been used for many decades in active women to progress labour, peanut balls are an alternative that can be used in non-ambulatory women such as women labouring with epidurals. Peanut balls are large plastic balls that are shaped like a peanut, with a smaller diameter in the middle and a

larger diameter on the ends. The inflated, peanut-shaped ball is designed to fit between the knees and comes in various sizes to ensure a comfortable fit for the woman. For women with an epidural, there are four main positions in which the peanut ball can be used to best suit the foetal station and stage of labour (Stulz et al., 2018). It also has the added benefit of being non-invasive, re-usable and low-cost.

Epidural analgesia is a popular form of pain relief for labouring women but can adversely influence the course of labour and birth.

[☆] Ethical approval: obtained from the Nepean Blue Mountains Local Health District HREC on 4 June, 2020 as an amendment –2020/STE01971: and Reciprocal Approval from Western Sydney University HREC on 30 Aug, 2018 – H12871. ^{☆☆} Funding sources – This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

* Corresponding author.

E-mail address: V.stulz@westernsydney.edu.au (V. Stulz).

<https://doi.org/10.1016/j.midw.2023.103797>

Received 19 February 2023; Received in revised form 20 August 2023; Accepted 24 August 2023

Available online 26 August 2023

0266-6138/© 2023 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY-NC license (<http://creativecommons.org/licenses/by-nc/4.0/>).

Box 1

Questions guiding the in-depth interviews conducted with midwives about their experiences using peanut balls

- (1) Can you tell me about your experience with the administration of the peanut ball for women involved in your care?
- (2) How do you think this peanut ball compares with other aids available for women in labour?
- (3) How do you introduce/discuss the peanut ball to/with women?
- (4) Have the women already heard about the peanut ball if you suggest using the peanut ball during their labour?
- (5) How confident do you feel in utilising the peanut ball for women who have had an epidural?
- (6) Have you ever personally used the peanut ball, during training or during labour? Did this influence you in recommending the peanut ball for other women?
- (7) What do you think is the most important aspect of the peanut ball?
- (8) Have you noticed that the peanut ball aids in speeding up the labour?
- (9) Have you noticed that women's normal vaginal birth rates have increased with using the peanut ball?
- (10) Is the peanut ball readily able to be seen visually in the birth unit and have any women actually asked what it was?
- (11) How often do you change the woman's position when using the peanut ball?
- (12) Have any women been uncomfortable using the peanut ball, and if so, what did you do or suggest?
- (13) If the women are uncomfortable using the peanut ball during labour, do they downsize to a smaller peanut ball?

Epidurals have been associated with higher interventions during labour, including a higher incidence of instrumental births and prolonged second stage of labour (Putri et al., 2021) especially in nulliparous women (MacArthur et al., 2001). Epidurals significantly increase the number of vacuum extractions (Djakovic et al., 2017).

Epidural anaesthesia also limits maternal movement, meaning that women do not experience benefits of maternal position changes such as enhanced maternal-foetal circulation, pain-relief, improved quality of uterine contractions, facilitation of foetal descent, and decreased length of labour (Zwelling, 2010). By encouraging more maternal movement, peanut balls may, in theory, have the potential to improve outcomes for women using epidural analgesia.

While peanut balls are increasing in popularity amongst midwives and birthing professionals, there is limited evidence supporting its use. The National Institute for Health and Excellence Guidelines has stated that there is no evidence pertaining to the use of a birth ball during labour (The National Institute for Health and Care Excellence Guidelines, 2017), and have made no specific reference to a peanut ball. Furthermore, there is no evidence in Australia for using a peanut ball specifically for women using epidurals during labour. Thus far, current literature regarding birth outcomes with use of a peanut ball is largely mixed. A 2019 systematic review reviewed data from four randomised controlled trials (RCTs) in the United States of America (USA) and found a slightly higher incidence of spontaneous vaginal births, decreased incidence of caesarean births, and a trend towards a reduction of the first and second stages of labour with a peanut ball intervention (Grenvik et al., 2019). However, this conflicts with a 2021 systematic review that obtained data from six RCTs and found no statistically significant difference in caesarean section rates or length of first stage of labour (Ahmadpour et al., 2021).

Midwives are in an optimal position to fill this knowledge gap by providing feedback on the use of the peanut ball in clinical practice. However, there have been no qualitative studies exploring the perspective of midwives using the peanut ball thus far. Australia utilises numerous midwifery-led models of care (Homer, 2016), giving midwives the autonomy to promote non-pharmacological or alternative therapies such as the peanut ball. Midwives working in one tertiary hospital are some of the first in Australia to integrate peanut balls into regular clinical practice. This study aimed to gain insight into the benefits, shortcomings, and practical considerations when using the peanut ball by interviewing midwives and it is hoped that such insight will guide further integration of the peanut ball across Australia and internationally.

Participants, ethics, and methods

A qualitative descriptive study was conducted through eight semi-structured interviews to describe midwives' perceptions about using a peanut ball for women during labour.

Participants and setting

Participants were recruited from the birthing unit of a tertiary hospital in New South Wales, Australia. Flyers were placed in the birth unit tearoom and provided directly to midwives during handover by the midwifery unit manager. Midwives were asked to indicate their interest in participating in the study via email to the researcher and provided their contact details. All midwives who expressed their interest were then contacted by a member of the research team over the phone to determine a convenient date and time and location for the in-depth interview to be conducted.

Data collection

Data were collected by one-on-one in-depth interviews conducted via phone, Zoom or face-to-face at the participants' choice. Interviews were conducted between July to December 2020 and each lasted between 20 to 30 minutes. Interviews were transcribed verbatim and each transcript was initially coded and all transcripts were de-identified. Data saturation occurred following the eighth interview. The first author (PhD) only interviewed two of the midwives and worked in a conjoint research position between a university and a local health district and had no working relationship with them. The second author was in the final year of a Bachelor of Medicine and did not collect any of the data. The final author (Masters) interviewed the other six midwives and worked as a research assistant and had no working relationship with them. The midwives were asked about their experiences using the peanut ball, how it compared with other options of pain relief, if they felt confident using the peanut ball, if they perceived that normal vaginal birth rates had increased, and whether using the peanut ball had sped up labour. The following questions were used to guide the in-depth interviews and as such were not piloted prior to the interviews (see Box 1). Midwives were provided with the opportunity to review the theming of the transcripts of their in-depth interviews and make any revisions, but we received no changes from any of the midwives.

Data analysis

The qualitative data from audio recorded interviews (approximately

Table 1
Participant Description and demographics.

Gender	Females $n = 8$ Males $n = 0$
Clinical experience in years	1 - 31
Age range in years	32 - 61
Mode of midwifery qualification	Bachelor of Midwifery (direct entry) = 1 Post Graduate Degree = 4 Certificate of midwifery = 3

Table 2
Themes identified from interviews.

Themes	Sub-themes
Education and encouragement	Selling it to the woman Educating midwives Becoming usual practice and improving confidence
Benefits and disadvantages of peanut ball	Facilitates birth and labour Discomfort
Techniques	Positioning Sizing Using alternative techniques

30 mins) with the midwives were transcribed verbatim and analysed using thematic analysis based on the Braun and Clarke (2013) framework. Thematic analysis is an iterative, rigorous and inductive process which involved the researchers listening to the recorded data, reading transcripts of data multiple times, identifying and labelling codes in the data, and developing themes and subthemes. VS and AD discussed and refined the themes and the sub-themes by using word documents and tables with quotes from the interviews. To increase rigour of this research, the researchers reflexively questioned their inherent biases and preconceptions to find out how they may have influenced the themes and sub-themes that were developed. It is noted that the first author could have been biased due to her background as a midwife, however this was reduced by the second author who was a medical student. The first and second author discussed the themes and sub-themes and this process helped to clarify them. These actions reduced the risk that their preconceptions and biases influenced the themes, therefore increasing the rigour of this study.

Ethical considerations

Ethics approval was obtained. Informed consent was obtained from participants prior to conducting the interview and could be withdrawn at any time. Participants were provided adequate time to consider their participation in the study before the interview, responding to an email for organisation of the interview any time between one day and five months. Interview recordings, transcripts, and personally identifying information was stored on password protected devices.

Results

Fourteen midwives agreed to be interviewed, and the final sample included eight midwives working in the birth unit (see Table 1). One midwife was sent a reminder email, one was sent phone messages and the other four did not respond after being consented.

The three main themes and the nine sub-themes that emerged from the study are included in Table 2.

Education and encouragement

Midwives described the role of education and encouragement in integrating the peanut ball into their practice. This included effective communication methods to introduce the peanut ball to pregnant women, education and training sessions for midwives, self-rated

confidence amongst midwives using the ball, and recognition of the peanut ball becoming usual practice.

Selling it to the woman

The midwives described that they would sell the peanut ball to women by outlining the rationale for its use, specifically its ability to open up the pelvis and encourage descent of the foetal head:

I explain to them why we're using the peanut ball, and it's to open up the pelvis to allow the baby to descend through the pelvis. (M1)

Midwives spoke about introducing the peanut ball to women early on such as on during a tour of the birthing suite, in antenatal clinic appointments, or on admission:

If women come and do the tour, they are actually talked about. [...]. They'll take them into a room and they will discuss everything in the room. (M4)

So as soon as women come in, I start talking to them about the peanut ball and options for them before they even made decisions about epidurals or anything like that or before we even know how the labour's going to unfold. (M6)

I'm finding, more and more women are aware of the peanut ball. I know that Megan (pseudonym) has started talking to them about the peanut ball in her antenatal classes. (M6)

Educating midwives

Most midwives had been trained in using the peanut ball during in-services:

Our midwife that was doing the in-services showed us how to position the woman in labour and I was actually one of the test subjects. (M2)

I had an in-service which told you how to use them. (M4)

Some midwives spoke about informal education through observing others using the peanut ball during labour; 'can I have a look, can I come in, to see how you use it? (M5)

One midwife also described how she encourages the use of the peanut ball when she is team leader:

If I'm the team leader and I go into a room and I see that they're not using it, I encourage them to use it. (M1)

Two midwives who had not had formal training in using the peanut ball believed more education for midwives would benefit their practice. They acknowledged that their lack of training, especially regarding sizing, hygiene, and positions, limited their ability to use the peanut ball effectively:

More knowledge about the sizing and how to measure about the peanut ball... different ways of using it because I know you are able to use it in different ways but I am actually not aware of it. That's just for me personally, that will help my practice in using it. (M5)

So they've been shown how to do it quickly by another midwife, but they haven't actually had the proper in-service of the peanut ball. And I think that needs to be implemented in both units so that everybody is doing the same way, from cleaning the ball, to wrapping the ball in a towel and sticky taping the towel and putting a bluey over the towel. (M8)

Becoming usual practice and gaining confidence

Midwives described how the peanut ball was now part of their usual practice: "it's a routine thing" (M1) and "I really feel it's a bit more mainstream. Like over the last year we've been using it more" (M5).

It's become standard practice in the birth unit as soon as a woman has an epidural. It's very unusual now to take over care of a woman that's got an epidural on board that doesn't have a peanut ball. (M8)

Almost all midwives expressed high self-rated confidence levels when using the peanut ball in their practice: *“Very confident, I’m the peanut ball queen”*. (M6)

However, midwives also spoke about poor availability of the peanut balls, especially for the most popular size:

I tried to downsize if they were uncomfortable, but there was no availability of resources. (M2)

Sometimes they’re all taken. We need more peanut balls. (M8)

Benefits and disadvantages of peanut ball

Midwives identified a number of benefits and disadvantages to using the peanut ball with labouring women. The key benefit of the peanut ball was its ability to facilitate birth and labour, which was observed through an increase in vaginal birth rates and shortened labour times. Midwives also recognised that the peanut ball improved women’s birthing experience as many find it comfortable and it encouraged an active role in labour, despite use of an epidural. Conversely, midwives also reported some women experiencing discomfort when using the peanut ball due to the exposing position (Fig. 1).

Facilitates birth and labour

Midwives described that the peanut ball has led to an increase in vaginal birth rates:

I’ve seen more vaginal births as opposed to them going for a Caesar. (M2)

Yes, particularly with primigravida in comparison to a multigravida I have noticed that women’s normal vaginal births have increased. (M3)

Particularly those women that have an epidural, I think normal vaginal birth rates have increased. (M4)

Midwives also identified that the peanut ball shortened labour times for women:

I’ve found that I think it does shorten the labour. (M1)

In the ones where the babies are in the right position, I notice the labour speeds up. (M4)

Midwives commonly linked increased vaginal birth rates and shortened labour times to the peanut ball’s ability to facilitate rotation and descent of the foetal head:

“It’s very effective in facilitating rotation and descent”. (M8)

I think it allows for greater descent of the baby’s head. So, you’re more likely to result in a normal birth. (M1)

I think that does make that difference in opening up the pelvis just enough or changing the shape of the pelvis so that the baby can turn around or come down a little bit. (M7)

Midwives identified that the peanut ball encourages an active role for labouring women who have had an epidural, improving their birthing experience and reducing birth-related trauma:

They feel like they’re doing something to assist I suppose, because if you think about it, there’s not much you can do once you get an epidural in is there? And I think for the mother too, you would think that it would, get them involved and make them feel like that they’re helping with it all. (M1)

They love it. They’re like, I don’t just lie here. So it’s getting women off their backs with an epidural. That’s what it’s achieving. And we know that if women are off their backs, they’re going to have a much better birth experience and reduce trauma. (M8)

Midwives also described increased comfort for women as a benefit of the peanut ball.

Discomfort

Midwives identified discomfort as a key disadvantage of the peanut ball. Midwives described how discomfort was often linked to feeling exposed in the positions created by the peanut ball:

I’ve only had a couple of women that really didn’t like it, at all, they felt uncomfortable or maybe they felt a bit exposed, even though you pop a drawsheet over them and try and maintain their privacy, their dignity so that they’re well covered up. (M1)

They don’t feel comfortable having their legs splayed that far apart. (M2)

Techniques

When asked about their use of the peanut ball, midwives were able to identify techniques they considered favourable or important to their practice. This included positioning of the woman and correct sizing of the peanut ball. Midwives also compared the peanut ball to existing alternatives such as pillows, towels, and birthing stools.

Positioning

Midwives identified a number of positions in which women could use the peanut ball. The most commonly used position was lateral lying.

One midwife emphasised the importance of maintaining a neutral pelvic tilt when applying the peanut ball in the lateral lying position:

When you’ve got a woman lying in the lateral position and when you use the peanut ball, which I would say is the most frequent use at the moment in birth unit, that it’s really important for the tilt of the pelvis to be straight. Because if it’s twisted, you know, you’re not getting the same anatomical relaxing of that pelvis and opening of that pelvis and so I find it’s really important to make sure that the bottom of the ball on the side where the woman’s back is, is propped with a rolled towel so that it’s straight. (M6)

Two midwives also used the peanut ball in an upright sitting position:

So we did the sitting, we did the side lying and then when they were sitting up, I was changing the bed to a chair so allowing for passive descent. (M2)

I make the bed into a chair, like a throne, and use the larger ball to pop their leg so their legs are up. (M6)

All midwives recognised the importance of frequent position changes for women with an epidural to optimise comfort and ensure equal distribution and effect of the anaesthetic:

I turn them 30 minutes on their side, 30 minutes onto the other side. (M1)

So if they’ve had an epidural then ideally you should be changing their position every two hours, but more frequently depending on maternal request, comfort levels. (M3)

One midwife also described the importance of frequent position changes to prevent pressure injuries from the peanut ball and encourage descent of the foetal head:

So you start to get pressure injuries. So I tend to try to rotate every half an hour. Or an hour depends on what’s going on and how busy you are. But often people will just get left on their left side. And then you’ll go in and roll them over. But for me, it’s all about rocking that baby down. So the more rotations the better. (M8)

Sizing

Midwives spoke about the importance of selecting an appropriately sized peanut ball for the woman. This was usually done by trial and error and by taking into account the height and weight of the mother.

You need to make sure that you use the right size for that woman as well. It’s a bit of trial and error. (M1)

I do take into comparison the weight and the height of the mother (M3)

Midwives noted that the most commonly selected size was the medium size.

Midwives also recognised difficulties with selecting a size due to no standardised colour coded sizing for peanut balls as reported by these midwives:

There's not a like a coding of matching colour to sizing. It's not universal the colour coding size, so that can be a bit confusing when you're educating people. (M3)

That's one of the problems that I have had with the peanut balls our supplier, the sizes, and the colours are inconsistent, so we've got four yellow balls, they're all different sizes. (M6)

Using alternative techniques

Midwives described alternative techniques that were used prior to the introduction of the peanut ball that would mimic the peanut ball's effects. This included aids such as pillows, blankets, and towels.

We were basically using whatever we could find in the birth unit, pillows, blankets, anything that could just keep that woman's pelvis open, it was basically anything I could grab, single pillows, I would roll up the old Egyptian cotton blankets. I'd actually stack them probably about you know single blanket height. (M2)

So I will just get six or eight towels and roll them up and then pack them between the legs. (M8)

Midwives also compared the peanut ball to existing aids such as birthing stools and pushing bars. Many noted that these aids, while similar, did not perform the same action as the peanut ball. One difference was the ability of the peanut ball to direct its efforts on the pelvic floor.

A pushing bar is more directing the maternal effort into a certain area. Where this is more focused on opening the pelvis where a lot of the other agents are more focused on relieving effort or gravity but they don't necessarily open the pelvis. I think if you compare to something like a birthing stool, you're feeling your hip on a birthing stool and you do the peanut ball, you can definitely feel more of an opening at the joint, the peanut ball in comparison to a birthing stool or a pushing bar, its more the efforts on the pelvic floor. (M3)

Other recognised differences related to the peanut ball's unique ability to be used in multiple maternal positions, including flat lying:

You can adopt different positions and not just a single position so with the birthing stool, with a pushing bar, that's a single position. (M3)

A lot of women are quite happy just to lay on the bed and have a rest with the peanut ball. So we're just even using it under them for a prop to help them if they're kneeling or whatever else they like, because it's a good shape. (M7)

One midwife spoke highly of the peanut ball and regarded it as innovative in the field:

I think it's just brilliant. I think it's one of the most innovative things that we've introduced into the birth unit to assist women, to try and achieve a normal vaginal birth. (M6)

Discussion

The aim of this study was to gain insight into the benefits, shortcomings, and practical considerations when using the peanut ball by interviewing midwives in a tertiary hospital. The findings show the peanut ball is well-received by midwives who recognise its ability to facilitate birth and labour to increase the chance of a vaginal birth. Midwives are confident in their practise with the peanut ball and

acknowledge the importance of educating midwives and women to promote its use. Midwives also discussed favoured techniques when using the ball, especially relating to size and maternal positioning.

The peanut ball is a relatively novel birthing tool, with many midwives in the study reporting that it was often unfamiliar to women. As such, building effective communication strategies with women is key to promoting the use of the peanut ball in clinical practice. Midwives would sell the peanut ball to women by describing the rationale for its use such as its ability to widen the pelvic outlet and encourage descent of the foetal head. By describing the purpose and benefits of the peanut ball, midwives ensure women are informed and encourage active participation in the birthing process, both of which positively impact the midwife-woman relationship (Fontein-Kuipers et al., 2018). Introducing the peanut ball early in a woman's care such as during the antenatal period, is also likely to improve awareness of the tool and promote feelings of choice and control over the woman's birth decisions (O'Brien et al., 2017). Midwives incorporating the peanut ball into antenatal classes would also ensure that the peanut ball's use is more acceptable and holistic for both women and midwives. This is especially true as women rely on the knowledge of trusted care providers such as midwives to make birth-related decisions during the planning phase before labour (O'Brien et al., 2017).

This study identified inconsistencies in knowledge about the peanut ball amongst midwives, which is consistent with existing literature (Honaker, 2021). Most midwives received education through in-services during which many had an opportunity to use the peanut ball for themselves, while others reported learning through observation of other midwives more experienced with using the peanut ball. Midwives with a lack of formal training expressed limitations in their ability to use the peanut ball effectively, especially for matters relating to size, hygiene, and positions, and believed they would benefit from formal education. This speaks to midwives' willingness to learn new techniques and incorporate safe practices. However, more formal education for midwives is required such as written education packages that describe the benefits of the peanut ball, the rationale for its' use, how it can be used detailing the four positions and the existing evidence about its' use. As there is no benefit from incorrect usage of the peanut ball, staff education is needed for positive outcomes (Grant and Clutter, 2014). There should also be an opportunity to incorporate an extra option of using a peanut ball as a technique within the E-Maternity database used in Australia so that midwives can add this easily into progress notes and this will enable better data collection of how many women are actually using this during their labour.

As the peanut ball has evolved to become usual practice at this hospital, midwives report high confidence levels in their ability and have shown strong inclination towards using the peanut ball, despite the limited evidence base that currently exists, especially in Australia. A key barrier to using the peanut ball was discomfort, often linked to feeling exposed by the open-legged positions created by the peanut ball. This has not been reported in any of the randomized control trials conducted in the United States.

According to midwives, peanut balls are a non-interventional, non-pharmacological tool that improves the chance of a vaginal birth for women using an epidural. Epidurals are widely used in labour as a form of anaesthesia, but are associated with an increased risk of instrumental births and emergency caesarean section (Djakovic, 2017; Putri et al., 2021). Midwives agreed that the peanut ball led to observed reductions in labour time and increased vaginal births, which is consistent with some reports in existing literature (Tussey et al., 2015; Evans & Cremering, 2016; Roth et al., 2016; Grenvik et al., 2019). It is also notable that midwives linked these observations to the peanut ball's ability to facilitate rotation and descent of the foetal head. Tussey et al. (2015) had also previously noted the peanut ball's ability to "facilitate the occipito-posterior rotation" and attributed it to spinal flexion leading to an increase in the uterospinal angle and thus increasing the pelvic diameter (Tussey et al., 2015). Further research is required to confirm

the accuracy of these observed outcomes.

Midwives in the study also described how the peanut ball encouraged active participation of women using an epidural. Epidurals can influence a woman's sense of control during labour (Jepsen & Keller, 2014), due to reduced sensation and limitations in the positions they can adopt. The peanut ball may ameliorate this feeling by offering a way to assist in the labour and thus reclaim a sense of power. Preserving a sense of control and active participation in labour is associated with better birth experiences (O'Brien et al., 2017) and reduced birth trauma (Hussein & Schmied, 2020).

The study explored the significance of maternal positioning and peanut ball sizing to optimise outcomes for women. A key benefit of the peanut ball is the potential for its use in multiple positions, with four main positions that are possible for women having an epidural (Stulz et al., 2018). These positions include two side lying positions and two semi-sitting positions. While lateral lying was the most common position used by midwives in the study, only two midwives reported using a sitting position with women. This may suggest the need for further education and training for midwives to maximise the potential of the peanut ball for women. Midwives also recognised the importance of frequent position changes, which are vital to facilitate foetal descent and rotation (Zwelling, 2010).

When compared to other birthing tools, peanut balls were regarded as unique in their action as they directly targeted the pelvic floor and could be utilised in multiple maternal positions. This is especially pertinent for women with an epidural as they are limited in the positions they can adopt. Midwives in our study identified the importance of frequent position changes when using the peanut ball. Similarly, Hickey and Savage (2019) found that frequent position changes using a peanut ball with an epidural was associated with reduced first and second stages of labour.

Correct peanut ball sizing was considered an important technical component by midwives. Peanut balls come in multiple sizes to ensure the best fit for each woman relative to their size (Roth et al., 2016), with medium being the most popular size. Midwives would use maternal height and weight as recommended by the manufacturer (Grant and Clutter, 2014), or a trial-and-error method to identify a suitable size for each woman. However, they were limited by a lack of universal sizing for peanut balls, resulting in inconsistencies in colour codes between manufacturers. To our knowledge, this is the first study to recognise this limitation and suggests a need for standardised sizing of peanut balls to improve ease of use.

Strengths and limitations

The current study offers the first evidence about midwives using peanut balls both in Australia and internationally. To our knowledge, only one qualitative study about the peanut ball has been conducted thus far, which explored the perceptions of women who had used the peanut ball in the USA (Payton and Carol, 2015). Midwives in Australia are in an optimal position to provide insight into the benefits, disadvantages, and practical considerations when using the peanut ball and may guide the direction of future research into the novel intervention. A limitation of the study is the small sample size of midwives from a tertiary hospital who participated in this qualitative study. Given the limited sample population, the findings from this study cannot be generalised to other settings.

Conclusion

This qualitative study is the first to examine the perspective of midwives who have incorporated the peanut ball into their usual practice. Midwives spoke highly of the peanut ball and have expressed high confidence levels in their ability to use the tool. According to midwives, the peanut ball encourages vaginal births and shortens labour times, whilst enabling women to participate actively in the birth despite using



Fig. 1. Peanut ball.

an epidural. Education for midwives and women is vital when introducing the peanut ball for the first time. Differences in knowledge between midwives should be addressed by implementing formal education and training sessions to learn how to use the peanut ball effectively. Formal written education packages for midwives on how to use the peanut ball and incorporating the peanut ball into antenatal classes as an option during labour would facilitate the peanut ball becoming usual practice for women. Including the peanut ball as an option in the E-maternity database in Australia would improve the documentation of its' use and facilitate better data collection of its' use by women during labour and birth. Perfecting the technique is important to optimise comfort and outcomes for women and should include maternal positioning and peanut ball sizing as essential technical components. Future research should focus on substantiating quantitative improvements to birth outcomes and explore the experiences of women using the peanut ball during labour.

CRediT authorship contribution statement

Virginia Stulz: Conceptualization, Formal analysis, Investigation, Project administration, Software, Supervision, Writing – original draft, Writing – review & editing. **Anushka Dashputre:** Conceptualization, Formal analysis, Investigation, Project administration, Software, Supervision, Writing – original draft, Writing – review & editing. **Heather Reilly:** Conceptualization, Formal analysis, Investigation, Project administration, Software, Supervision, Writing – original draft, Writing – review & editing.

Declaration of Competing Interest

There are no competing interests to declare by both authors.

Acknowledgments

We would like to thank all the midwives who gave up their time to participate in the interviews and share their perspectives.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.midw.2023.103797](https://doi.org/10.1016/j.midw.2023.103797).

References

- Ahmadpour, P., Mohammad-Alizadeh-Charandabi, S., Doosti, R., Mirghafourvand, M., 2021. Use of the peanut ball during labour: A systematic review and meta-analysis. *Nurs. Open* 8 (5), 2345–2353.
- Braun, V., Clarke, V., 2013. *Successful Qualitative Research: A Practical Guide for Beginners*. Sage Publications Ltd, London.
- Djakovic, I., Rudman, S.S., Kosec, V., 2017. Effect of epidural analgesia on mode of delivery. *Wien. Med. Wochenschr.* 167, 390–394. <https://doi.org/10.1007/s10354-016-0511-9>.
- Evans, S.J., Cremering, M.M., 2016. Use of peanut labor ball for pelvic positioning for nulliparous women following epidural anesthesia. *J. Obstet. Gynecol. Neonatal Nurs.* 45 (3), S47–S47 [Poster presentation] Proceedings of the 2016 AWHONN Convention.
- Fontein-Kuipers, Y., de Groot, R., van Staa, A., 2018. Woman-centred care 2.0: Bringing the concept into focus. *European Journal of Midwifery* 2 (5). <https://doi.org/10.18332/ejm/91492>.
- Grant, C.B., Clutter, L.B., 2014. The Peanut Ball: A Remarkable Labor Support Tool. *International Doula* 22 (4), 12–15.
- Grenvik, J.M., Rosenthal, E., Saccone, G., Corte, L.D., Quist-Nelson, J., Gerkin, R.D., et al., 2019. Peanut ball for decreasing length of labor: a systematic review and meta-analysis of randomized controlled trials. *Eur. J. Obstet. Gynecol. Reprod. Biol.* 242, 159–165. <https://doi.org/10.1016/j.ejogrb.2019.09.018>.
- Hickey, L., Savage, J., 2019. Effect of peanut ball and position changes in women laboring with an epidural. *Clinical Evaluation & Improvement. Childbearing* 23 (3), 245–252. <https://doi.org/10.1016/j.nwh.2019.04.004>.
- Honaker, M.E., 2021. The Use of a Peanut Ball During Labor in Nulliparous Term Singleton Vertex Pregnancies to Decrease the Primary Cesarean Rate: An Evidence-Based Practice Improvement Project. Graduate Publications and Other Selected Works - Doctor of Nursing Practice (DNP). <https://trace.tennessee.edu/dnp/3>.
- Homer, C.S., 2016. Models of maternity care: evidence for midwifery continuity of care. *Med. J. Aust.* 205 (8), 370–374. <https://doi.org/10.5694/mja16.00844>.
- Hussein, S., Schmied, V., Dahlen, H., Kumar-Hazard, B., Schmied, V., 2020. Seeking control over birth in the Middle East. Eds. *Birthing Outside the System. The Canary in the Coal Mine*. Routledge, New York, pp. 171–188.
- Jepsen, I., Keller, K.D., 2014. The experience of giving birth with epidural analgesia. *Women Birth* 27 (2), 98–103. <https://doi.org/10.1016/j.wombi.2014.01.005>.
- MacArthur, C., Shennan, A., May, A., Whyte, J., Hickman, N., Cooper, G., et al., Comparative Obstetric Mobile Epidural Trial Study Group, 2001. Effect of low-dose mobile versus traditional epidural techniques on mode of delivery: a randomised controlled trial. *Lancet* 358 (9275), 19–23.
- O'Brien, D., Butler, M., Casey, M., 2017. A participatory action research study exploring women's understandings of the concept of informed choice during pregnancy and childbirth in Ireland. *Midwifery* 46, 1–7. <https://doi.org/10.1016/j.midw.2017.01.002>.
- Payton, Carol, L., 2015. Use of the Peanut Ball to Decrease First and Second Stages of Labor. Graduate Theses, Dissertations, and Capstones 14. <http://scholarworks.bellarmine.edu/cgi/viewcontent.cgi?article=1013&context=tdc>.
- Putri, I., Simons, K., Nettle, J., Woodward, A., 2021. Obstetric anal sphincter injuries (OASIS) in multiparous women with the use of epidural anaesthesia: a retrospective cohort study. *Aust. N. Z. J. Obstet. Gynaecol.* 61, 30–34. <https://doi.org/10.1111/ajog.13263>.
- Roth, C., Dent, S.A., Parfitt, S.E., Hering, S.L., Bay, R.C., 2016. Randomised controlled trial of use of the peanut ball during labor. *Am. J. Matern. Child Nurs.* 41 (3), 140–146. <https://doi.org/10.1097/NMC.0000000000000232>.
- Stulz, V., Campbell, D., Yin, B., Al Omari, W., Burr, R., Reilly, H., 2018. Using a peanut ball during labour versus not using a peanut ball during labour for women using an epidural: study protocol for a randomised controlled pilot study. *Pilot Feasibility Stud.* 4 (156) <https://doi.org/10.1186/s40814-018-0346-9>.
- The National Institute for Health and Care Excellence Guidelines, Clinical Guideline 190, Intrapartum Care. Care of healthy women and their babies during childbirth, 2017; Version 2, Section 8.3.5. p. 358, accessed at <https://www.nice.org.uk/guidance/cg190/evidence/full-guideline-pdf-248734770>.
- Tussey, C.M., Botsios, E., Gerkin, R.D., Kelly, L.A., Gamez, J., Mensik, J., 2015. Reducing length of labor and cesarean surgery rate using a peanut ball for women laboring with an epidural. *J. Perinat. Educ.* 24 (1), 16–24.
- Zwelling, E., 2010. Overcoming the challenges: maternal movement and positioning to facilitate labor progress. *Am. J. Matern. Child Nurs.* 35 (2), 72–78.