Making choices for childbirth: development and testing of a decision-aid for women who have experienced previous caesarean

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Abstract

This paper presents the development and pilot testing of an evidence-based decision-aid for pregnant women who have experienced previous caesarean section and who are considering options for birth in a subsequent pregnancy. The Ottawa Decision Support Framework (DSF) has been utilised and modified in the development of a tailored booklet entitled “Birth Choices: What is best for you... vaginal or caesarean birth?” Development included a review by women who had experienced previous caesarean birth as well as obstetric, midwifery and educational experts. The booklet was also reviewed for acceptability by 21 pregnant women who were facing this birth decision. Pre- and post-booklet preferences for birth were elicited and compared to actual birth outcomes. This decision-aid shows promise in facilitating informed decision-making in pregnancy. It is currently undergoing an evaluation in a multi-centre randomised controlled trial.

Keywords: Decision-aid; Decision support; Patient education; Birth choice; Caesarean section

1. Introduction and literature review

Australia has one of the highest rates of caesarean section in the world, with a rate of 21.9% recorded in 1999, part of an increasing trend evident since the 1980s [1]. A significant proportion of caesarean sections are elective (over 50%) with over 35% of all caesareans either principally or secondarily the result of prior caesarean section [2,3]. Of the 55,550 Australian women who experienced caesarean birth in 1999 [1], many will face a decision about method of birth in future pregnancies. The choice between trial of vaginal birth after caesarean (VBAC) and elective repeat caesarean is not straightforward. Both options entail some degree of risk for mother and baby [4], although the weight of evidence favours trial of vaginal birth as an appropriate option for many women [5-7]. Between 60 and 80% of women with prior caesarean may be eligible to attempt VBAC [8,9], with successful vaginal birth rates of between 60 and 80% [10]. Significant resource implications for promoting VBAC as a feasible option have been identified, with an Australian study reporting a cost advantage of 30% for VBAC compared with elective repeat caesarean [11].

For many women, the decision is not simple and decisional conflict may be significant. Women’s choices are characterised by a difficult balance between family or social commitments and relationships (including with their physicians) within a context of medical recommendations [12-14]. Women weigh up their doctor’s advice about relative risks of vaginal versus caesarean birth, including issues such as rupture of scar versus surgical morbidity, alongside memories of their previous caesarean experience and expectations of their current pregnancy. They are often concerned about social responsibilities such as family and child-care after the birth [13]. Even when the decision to undertake trial of labour results in a vaginal birth, women will not necessarily feel satisfied with the decision or the outcome [15,16]. Women’s views are important in determining method of birth after caesarean and attitudinal factors play a significant role in the choice and outcome [17]. Therefore, a tailored decision-aid that emphasises participation in the decision process and helps women to clarify their individual values relating to the decision has the potential to significantly impact upon the birth experience.

The Decision Support Framework (DSF) adopted for this study acknowledges the work by O’Connor et al., whereby

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a decision support tool facilitates high quality patient decisions. This means decisions are both informed and consistent with personal values [18,19]. The tailored booklet using a DSF may facilitate ‘quality’ decision-making based on research evidence about the risks and benefits of a trial of vaginal birth versus elective caesarean section weighed against individual values and needs. If effective, it would provide a relatively simple, potentially low cost intervention that could enhance women’s ability to make informed choices about their birth. It is proposed that a DSF tailored for pregnancy will assist in ensuring that benefits and risks are presented in a relevant way for women’s decision-making.

Various targeted educational strategies have been evaluated in terms of attempting to increase rates of vaginal birth after caesarean, with mixed success [17]. However, the use of a tailored decision-aid strategy to assist women in determining their choice of birth options has not yet been validated. Given the potential benefits of decision-aids and the need for further evaluation of strategies designed to involve patients in the process of decision-making [20], this study contributes to the development of knowledge in this area. This article will discuss phases one and two of the study.

2. Hypotheses

On commencing this project, it was hypothesised that a decision-aid would benefit women by facilitating a process of ‘informed’ decision-making, in the context of improved knowledge about the risks and benefits of vaginal birth and elective caesarean birth and overt consideration of women’s individual fears, values and needs surrounding birth.

3. Method

3.1. Phase 1: development and preliminary evaluation of the “Birth Choices” booklet

Phase 1 of the booklet development involved an initial draft being written using the format of the Ottawa Health Decision Centre. Key content areas and major risks and benefits were identified using evidence-based practice principles. Best available evidence included the most recent clinical management guidelines (with documented systematic review protocols) as well as additional review of primary research and published meta-analyses. Limited evidence was available from randomised controlled trials. Research on the determinants of women’s choice for birth was also reviewed to identify significant non-medical issues for inclusion in the booklet. Table 1 details content areas (risks and benefits) featured in the booklet, including probabilities, sources of evidence and examples of how these were stated in the booklet. Major advantages of vaginal birth over elective caesarean included good success rates for attempted VBAC (60–80%), shorter hospital stay and recovery time, greater opportunities to establish breastfeeding and avoidance of risks related to surgery [5,7,10,21–25]. Disadvantages included potential for complications such as rupture of uterine scar, possible instrumental vaginal birth (forceps/vacuum), vaginal trauma and emergency caesarean birth [1,3,10]. Major advantages of elective caesarean included the ability to plan or book in advance therefore reducing uncertainty or labour fears, and reduction in risks associated with emergency caesarean [4,7,14,21,26–28]. Disadvantages included surgical risks such as infection, anaesthetic problems, bleeding, blood clots (lung and legs) and longer postnatal recovery time, as well as increased likelihood of transient taccypnoea of the newborn [4,21,23,29–31].

A values clarification exercise was developed to guide women through a summary of major pros and cons, based on the discussion within the body of the booklet. To assist women to consider how important each of these issues were to their individual situation, a scale using the terms “not important”, “some/moderately important” and “very important” was listed beside each issue and women were instructed to rank each accordingly. They were also asked to write down any additional thoughts or ideas they wished to add to the lists. A 15-point “Birth Preference Scale” was placed at the end of the exercise to elicit final birth preferences between trial of vaginal birth and elective caesarean birth.

A critical review of the draft decision-aid was conducted by an expert in decision-aid development and an expert in caesarean section utilisation. A revised draft was then evaluated by a panel including obstetricians (5), midwives (5), educational specialists (2) and women who had already experienced caesarean birth (2). The reviewers were selected from the area health services being utilised for the study to ensure the content was relevant to their particular hospitals and reflected clinical reality. For the purposes of booklet development, it was hoped that midwives and obstetricians would review the content according to their philosophical and professional viewpoints, thus identifying possible biases in the draft booklet. Education specialists and childbearing women were selected to assess the degree to which content was relevant to consumers. Feedback was provided on format, reading ease, length, accuracy and balance of content for each option. For example, midwives suggested more specific discussion in the trial of labour section about risks of perineal trauma and postnatal bleeding, with obstetricians requesting more detailed information on risks and consequences of uterine rupture. Consumer feedback identified a need to provide more information on emergency caesarean section during trial of labour. The final draft for pilot purposes was assessed to have a Flesch (reading ease) score of 63.7 and grade level of 7.8. This was considered appropriate for the reading needs of most women.

3.2. Phase 2: pilot study

A convenience sample of 21 pregnant women who had experienced a caesarean birth and were attending prenatal
Summary of key issues, evidence-base and examples from decision-aid

<table>
<thead>
<tr>
<th>Issues</th>
<th>Evidence-base</th>
<th>Examples from decision-aid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempted VBAC benefits</td>
<td>Systematic reviews conclude vaginal birth succeeds in 60–80% of attempted VBAC cases [5,7,10,21].</td>
<td>Between 60 and 80 out of 100 women who begin trial of labour will have a vaginal birth. Most women who have a vaginal birth will experience a short hospital stay (and) avoid possible surgical problems.</td>
</tr>
<tr>
<td>VBAC success rates</td>
<td>Average length of stay for vaginal birth is 2–3 days.</td>
<td></td>
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<tr>
<td>Hospital stay/recovery</td>
<td>About half that for caesarean birth [22] with lower overall morbidity and quicker postnatal recovery [23,23,24].</td>
<td></td>
</tr>
<tr>
<td>Breastfeeding</td>
<td>Vaginal birth allows earlier initiation of breastfeeding when compared to caesarean birth [25].</td>
<td>Most women who have vaginal birth experience a greater chance to start breastfeeding.</td>
</tr>
<tr>
<td>Attempted VBAC risks</td>
<td>International systematic reviews suggest rupture rates between 0.2 and 1.5% [7]. Australian review 1992–1997 indicates a rupture rate 0.3–0.5% [10].</td>
<td>About 1 in 200 women experience a tear in the scar on their uterus . . . Sometimes this can occur with little warning, and can seriously affect the baby and mother. In some cases, the doctor may need to help the baby out with forceps or a vacuum cup.</td>
</tr>
<tr>
<td>Uterine scar rupture</td>
<td>International reviews conclude surgical morbidity is less for elective caesarean than emergency caesarean [47,21,27,28].</td>
<td></td>
</tr>
<tr>
<td>Instrumental vaginal birth</td>
<td>Approximately 11% of all vaginal births in Australia are instrumental although rates for VBAC are not specified VBAC [1].</td>
<td></td>
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<tr>
<td>Perineal trauma</td>
<td>Episiotomy rates approximate 20% for all vaginal birth in Australian hospitals. Rates depend on accoucher and hospital practices [1,3].</td>
<td>Sometimes a cut is made in the lower part of the vaginal opening to assist with the birth . . . this cut will need stitches.</td>
</tr>
<tr>
<td>Elective caesarean benefits</td>
<td>Effective caesarean section is preferred by some women to reduce uncertainty and fear about trial of labour [14,26].</td>
<td>Women already know what to expect from the surgery, there is no need to feel labour pain. Caesarean surgery can be booked in advance—this helps with planning family needs.</td>
</tr>
<tr>
<td>Reduce labour fears</td>
<td>Effective caesarean section assists some women to plan family needs surrounding birth (e.g. child care) [14,26].</td>
<td>An emergency caesarean birth can increase chances of complications relating to surgery when compared to an elective caesarean.</td>
</tr>
<tr>
<td>Planning needs</td>
<td>Effective versus emergency caesarean</td>
<td></td>
</tr>
<tr>
<td>Elective versus emergency caesarean</td>
<td>International reviews conclude morbidity is less for elective caesarean than emergency caesarean [47,21,27,28].</td>
<td></td>
</tr>
<tr>
<td>Elective caesarean risks</td>
<td>International reviews confirm morbidity associated with caesarean section is greater than for vaginal birth. Risks relate to infection, anaesthetics, bleeding, blood clots, and post-surgical pain. [4,21,29].</td>
<td>Women who have caesarean birth are more likely to experience anaesthetic-related problems, pain after surgery, infection of the wound or bladder, blood loss during surgery, blood clots.</td>
</tr>
<tr>
<td>Surgical risks</td>
<td>Studies have demonstrated longer postnatal recovery time for women who undergo caesarean compared to vaginal birth [23,10].</td>
<td>Caesarean birth is a major surgical procedure, therefore women can expect to need a longer hospital stay and often take longer to recover than for a vaginal birth.</td>
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<tr>
<td>Postnatal recovery</td>
<td>Neomatal respiratory distress Transient tachypnoea of the newborn occurs more frequently in caesarean births than vaginal. Studies have suggested rates of 6% for elective caesarean births versus 3% for vaginal births [20,31].</td>
<td>About 3 out of 100 babies will experience a short time of ‘respiratory distress’ after a vaginal birth compared with 6 out of 100 babies after elective caesarean.</td>
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The hospitals used for the pilot are referred to as H1 and H2. The policy and practice patterns of these two hospitals are very different in terms of pre-study rates of trial of vaginal birth and elective repeat caesarean section. Trial of vaginal birth rates approach 80% in H1, whilst in H2 they approximated 20%. This may suggest difference practice patterns of obstetricians within these hospital sites or women’s preferences for elective caesarean section in H2 and trial of vaginal birth in H1. Variations in practice patterns within Australia have been documented, with significant differences occurring both between and within hospitals, states and territories, and not completely explained by client risk profiles [32].

4. Findings

4.1. Phase 1: “Birth Choices” booklet

The “Birth Choices” decision-aid entitled “Birth Choices: What is best for you . . . Vaginal or Caesarean Birth” was
produced as a 20-page self-administered booklet consisting of two parts. The first part includes descriptive information about the two options for birth (trial of vaginal birth or elective caesarean birth), incorporating visual presentations of the probability information regarding risks and benefits of each mode of birth. The second part involves a values clarification exercise where women weigh the pros and cons according to their degree of importance (not important to very important). A 15-point Birth Preference Scale is utilised to elicit birth preference. A space is provided for women to note any additional ideas or concerns about the options as well as for future consultations with the doctor or midwife.

4.2. Phase 2: pilot study

Of the 21 women surveyed, most (18/21) indicated that their previous caesarean birth was an emergency procedure. The most common justification was a combination of ‘foetal distress’ and ‘failure to progress’ in labour (9/18), the remainder due to a single indicator such as ‘foetal distress’ (3), ‘failure to progress’ (2), breech (2) and two others not specified. All of the elective caesarean sections (3) were due to breech presentation.

Table 2 shows a summary of preferences for women prior to and after reading the booklet. Women’s preference before and after reading the booklet can be compared on movement along the scale for trial of vaginal birth and elective caesarean section. In general, those who strongly favoured a trial of vaginal birth seemed unchanged in their preference after reading the booklet. However, those who either were only mildly in favour of a trial of vaginal birth or who were unsure changed their preference to an elective caesarean section after reading the booklet.

In further describing the movement of preferences for birth within each hospital, in H1, 8 of 11 women preferred a trial of vaginal birth before the booklet and only 6 after. Whilst only two women preferred an elective caesarean before the booklet, four preferred this after. In H2, a similar pattern exists, whereby 7 out of 10 women preferred a trial of vaginal birth before the booklet and only 5 after. Elective caesarean preference increased from three to four after reading the booklet.

Birth outcomes were collected to determine the degree to which women’s preferences were consistent with actual birth experiences. Birth outcomes were available for 18 of the 21 women in the pilot. When ‘after booklet’ preferences for birth are compared to actual birth outcomes (Table 3), some interesting observations emerge. In Table 3, all three women in H1 who indicated that they would prefer an elective caesarean actually underwent a trial of labour contrary to their preference. Only one of these women experienced a vaginal birth with the other two experiencing emergency caesarean section. Of the five women who underwent a trial of vaginal birth according to their preference only two achieved a vaginal birth.

Table 3 illustrates a contrast, whereby in H2, both of the women who preferred elective caesarean section actually...
received one; however, of the five women who preferred a trial of vaginal birth, only two experienced this.

4.3. Potential impact of the booklet

Women provided written feedback about the booklet in terms of the way it was written, whether it was easy for them to understand and the usefulness of the ‘values clarification’ exercise. For the 21 women surveyed, 16 (76%) provided written feedback about the booklet, with 15 (71.4%) giving positive responses, and one providing suggestion that details be added about perineal trauma in the vaginal birth section. The response was rated positively if it included comments about being easy to read and/or understand, made a difference in the decision process or was considered useful to the women. The notion of the booklet helping women gain control in the decision process was evident in a number of the responses. For example, Case A noted that although she had discussed trial of vaginal birth with her midwife or doctor she was still unsure about the decision even at 39 weeks of pregnancy. After she had read the booklet she indicated a preference for caesarean section.

Case A: “Less fear of complication re size of my baby, tearing of uterus and scar. Quick recovery previously, plus had no problems with breastfeeding. Feel a little more in control … I thought the booklet was well written and easy to understand. It helped me considerably in the decision I had to make I feel more informed. The activity at the end added in clarifying the information into thought”.

Case B preferred a trial of vaginal birth both before and after reading the booklet. She indicated the booklet increased her control.

Case B: “When I had my caesarean 8 years ago I felt robbed of pushing my baby out myself and of welcoming her to the world. A vaginal birth is on the top of my list. If I have a caesarean I want an epidural so I can be awake and I want my husband and daughter there with me. The booklet was great it made me feel like I have more control over what is going to happen to not only me but my family as well. I feel like I will be more understood. The booklet was extremely easy to read and understand. I will be going through it again”.

The booklet may facilitate discussions between the women and their doctor/midwife about their questions and concerns. Case C expressed a mild preference for trial of vaginal birth prior to reading the booklet but changed her preference to a caesarean section afterwards.

Case C: “My biggest fear is the scar rupturing and causing damage to the baby. As my previous c-section was only 16 months ago (or will be when the baby is due) I feel that the risk of this occurring needs to be discussed more fully with my doctor. The booklet was very easy to understand and has made me think more seriously about the options available to me. As a result of completing your survey I have put my fears and worries on paper and will make sure that my birthing options are discussed with my doctor closer to the time”.

Pressure from family and/or friends had a significant influence for some women. For Case D, the booklet provided permission for her to prefer a trial of vaginal birth when her friends had clearly opted for a caesarean section.

Case D: “I felt guilty about wanting a normal birth—after the booklet I felt much better about it—all my friends had repeat C”.

5. Discussion

Given the small number of participants, the results are only suggestive and identify questions that require exploration in future work. The majority of women who participated in the pilot study and completed the decision-aid booklet indicated the booklet was well written, easy to understand and assisted them in coming to a decision about their birth. The finding that 5 of 21 women changed their birth preferences from the before to after booklet response suggests the booklet may either confirm preferences or facilitate a change. The degree to which this can influence overall rates of trial of vaginal birth versus elective caesarean birth is yet to be determined. The main aim of the pilot project was to evaluate women’s reactions to the booklet and assess its acceptability to women faced with the actual birth decision. The findings emphasise the need for a well-designed RCT to test the original hypotheses.

The issue of choice for birth after caesarean varies amongst the medical practitioners and midwives who care for women in pregnancy. Anecdotal evidence suggests that strong preferences for either option amongst practitioner influences whether women are actually offered choices and how they may be counselled about their preferences for birth. When comparing ‘after booklet’ preferences with actual birth outcomes, the differences in the two hospital sites suggest practitioners may exert control over the choices that are made. Women in the site where elective caesarean section is traditionally favoured were more likely to receive an elective caesarean birth if they preferred this option. However, although five women stated that they preferred a trial of vaginal birth, only two experienced this. On the site where VBAC is favoured, of the three women who preferred an elective caesarean, none experienced this.

This implies that a contradiction may exist between a policy of ‘informed choice’ for health care consumers and practitioners (obstetricians and midwives) reluctant to offer a choice when it opposes their own values or preferences. A larger sample is required to determine whether this situation is medically justified or is more likely to reflect the attitudes of obstetricians and midwives within the hospitals. Future research results will provide greater...
insight into situations where inconsistencies exist between preferences and outcomes. A randomised controlled trial in helping women make choices about birth after caesarean. A pivotal issue identified in the pilot is the possible conflict between ‘informed’ consumers making a choice about their birth and practitioners reluctant to offer choice, unless the choice aligns with the practitioner’s own preference. Given that healthcare policy increasingly highlights the need for effective consumer participation, this issue deserves closer examination to determine the extent to which incongruence between choice and outcome exists. Healthcare services whose goals reflect a desire to offer choice to consumers about their care, may need to recognize this important gap and develop strategies whereby consumer choice is a reality.

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