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Citation: Darling, F. (2016). Practitioners' views and barriers to implementation of the Keeping Birth Normal tool: A pilot study. *British Journal of Midwifery*, 24(7), pp. 508-519. doi: 10.12968/bjom.2016.24.7.508

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Link to published version: 10.12968/bjom.2016.24.7.508

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Funding: £20 000 by a local NHS charity.

Measuring and supporting the implementation of evidence-informed skills to reduce unnecessary interventions in labour and birth: A pilot study to explore the views of practitioners and identify barriers to the implementation of the Keeping Birth Normal Tool

Abstract

Background

An important reason reported in studies investigating the continued rise in unnecessary interventions in labour and birth is the poor implementation of evidence. A validated tool can enable the systematic measurement of care to target interventions to support implementation. The Keeping Birth Tool has been developed to measure and support implementation of evidence to reduce unnecessary interventions in labour and birth. This pilot seeks the views of midwives about the usefulness and relevance of this Tool to measuring and supporting practice. It also identifies barriers to implementation.

Sample: Five midwives supported by five preceptors tested the Tool on a delivery-suite and birth centre in a local National Health Service Trust.

Method: Mixed methods were employed. Participants completed a questionnaire about the relevance and usefulness of the Tool. Semi-structured interviews explored participants' experience of using the Tool in practice.

Results

The domains and items in the Tool were viewed as highly relevant to reducing unnecessary interventions. Not all midwives were open to their practice being observed but those who were reported benefits from critical reflection and role modelling to support implementation. However, an important barrier is a lack of expertise amongst preceptors to support the implementation of skills to reduce unnecessary interventions. This includes skills in the use of rating scales and critical reflection. Where expertise is available there is a lack of protected time for such structured and supportive activity. Norms within birth environments that do not promote normal birth are another important barrier.

Conclusion

Midwives found the items in the KBN Tool relevant to evidence-informed skills to reduce unnecessary interventions and useful for measuring and supporting implementation. In order for the inferences about the use of evidenced-informed skills to be valid and generalised, further evidence about the quality of items needs to be gathered. The successful implementation of the Tool requires preceptors with skills in care that reduces unnecessary interventions, using rating scales, role modelling and critical reflection. Such structured preceptorship requires protected time and can only thrive in a culture that promotes normal birth.

Keywords: normal birth, validity, midwifery, evidence-informed skills

Introduction

Background

The use of unnecessary interventions in labour and birth continue to rise. A rate of >19% is seen as medically unnecessary by the World Health Organisation (WHO, 2010). In Europe caesarean section rates vary between 30-58% except in the Netherlands and Scandinavian countries where rates are (Euro-Peristat, 2013). Currently the caesarean-section rate in the United Kingdom is 26.2% but wide variations of 18-34% exist (National Health Service England, 2013). Morbidities associated with these interventions impact on the long term physical, mental and sexual health of women and disrupt maternal-infant relationships (WHO, 2013; Koblinsky *et al.*, 2012; Beck and Watson, 2008). Evidence that such interventions increase childhood asthma, obesity, diabetes, cancers and atopic diseases is increasing (Dahlen *et al.*, 2013; Hyde *et al.*, 2012).

A significant policy initiative in the UK to reduce unnecessary interventions is a choice of midwife-led settings for birth. This model of care recognises the ability of women to give birth with minimum interventions. A review of this policy demonstrated that interventions in obstetric-led environments are 15-25% higher amongst low risk women when compared to midwife-led settings. Currently only 8% of women use midwife-led settings for birth. Efforts to increase the utilisation of these settings remain hampered by dominant discourses about birth as a risky process and medical interventions as necessary to reduce or prevent harm (Coxon *et al.*, 2013). Within this context it is important to consider how findings of poorer neonatal outcomes amongst primigravid women choosing homebirths and experience a transfer rate of 35-45% from midwife-led to obstetric settings will impact on women's decisions (Birthplace Collaborative Group of Studies, 2011).

Updated NICE guidelines (2014) recommend midwife-led environments as the choice of place of birth for women with low risk pregnancies. Improving the availability and utilisation of such environments is necessary to improve outcomes. However the use of unnecessary interventions in

obstetric environments must be addressed if women who choose these environments are to experience positive outcomes. High risk women in such units will also benefit from normalisation (Kennedy *et al.*, 2012; O’Connell and Downe, 2009).

Although midwife-led environments are associated with reduced intervention, it is important to consider if improving implementation further can reduce transfers to obstetric units. The transfers rates from free-standing units of 16.5% with better outcomes compared to 21.2% in along-side units suggest that there may be differences in the quality and quantity of implementation (Birthplace Collaborative Group of Studies, 2011). It is also important to investigate if a lack of implementation of evidence and involvement of women in decision-making resulted in poorer outcomes amongst primigravid women who chose home births.

The strength of evidence from research investigating the reasons for differences in interventions and outcomes between birthing environments is of variable quality. However, a finding common to these studies is poor implementation of evidence and the lack of involvement of women in decision-making (McCourt *et al.*, 2012; Kennedy *et al.*, 2010; Walsh and Devane, 2012; O’Connell and Downe, 2009). The importance of systematically measuring care to understand these variations and improve the consistency of care and outcomes is emphasized in policies, research and investigations into midwifery practice (Kings Fund, 2015; Kirkrup Report, 2015; Stones and Arulkumaran, 2014; Kennedy *et al.*, 2010).

This study pilots a Tool to measure the implementation of evidence to reduce unnecessary interventions in labour and the first hour of birth. The validation of the Keeping Birth Normal Tool (KBN) is in the developmental stage. The Tool is based on a model that sees birth as a normal and healthy event and the involvement of women as necessary to achieve positive outcomes (DH, 2007; Green, 2012). The care includes the first hour of birth, where risks of intervention is increased if

there is a lack of skills to support the physiological birth of the placenta and promote transition of baby to external life (ACNM, MANA, NACPM, 2012; Dodwell and Newburn, 2012).

Several tools have been developed to measure support in labour (Davie, *et al.*, 2013; Dunne, *et al.*, 2014). Though shown to be vital to improving outcomes, it is only one measure of care described to reduce unnecessary interventions (NICE Guidelines, 2014; Dodwell and Newburn, 2010). The KBN Tool measures care under twelve domains and fifty items (approaches) on evidenced-informed skills to support a normal birth (See table 1 and 2).

Table 1: Domains in the KBN Tool

12 Domains	Evidence-Informed Skills
1. Philosophy	Orientation to reduce interventions
2. Facilitating choice	Inclusion of women to improve outcomes
3. Guidelines	Use of evidence to improve outcomes
4. Partnership working and communication	Use of evidence to promote safe practice
5. Environment	Supports physiological birth
6. Supporting women in labour	Care that supports physiological processes to reduce interventions
7. Progress in early labour	Care that supports physiological processes to reduce interventions
8. Active labour	Care that supports physiological processes to reduce interventions
9. Imminent birth	Care that supports physiological processes to reduce interventions
10. Birth of placenta	Care that supports physiological processes to reduce interventions
11. Birth of baby and breastfeeding	Care that supports physiological processes to reduce interventions
12. Respecting women	Building relationships that improve outcomes

Table 2: An example of two domains, items and rating scale

2. Facilitating choice	0	1	2	3	4
2.1 The woman's choice is the focal point of my discussions with her for plans for her birth.					
2.2 I am up to date on evidence to support choices in normal birth					
2.3 I act as the woman's advocate when the woman's choice falls outside of guidelines					
3. Guidelines					
3.1 I use local and national guidelines during information giving					

Key: Rating scale: 0 = unable to assess; 1 = rarely uses this skill; 2 = sometimes uses this skill; 3 = frequently uses this skill; 4 = consistently uses this skill.

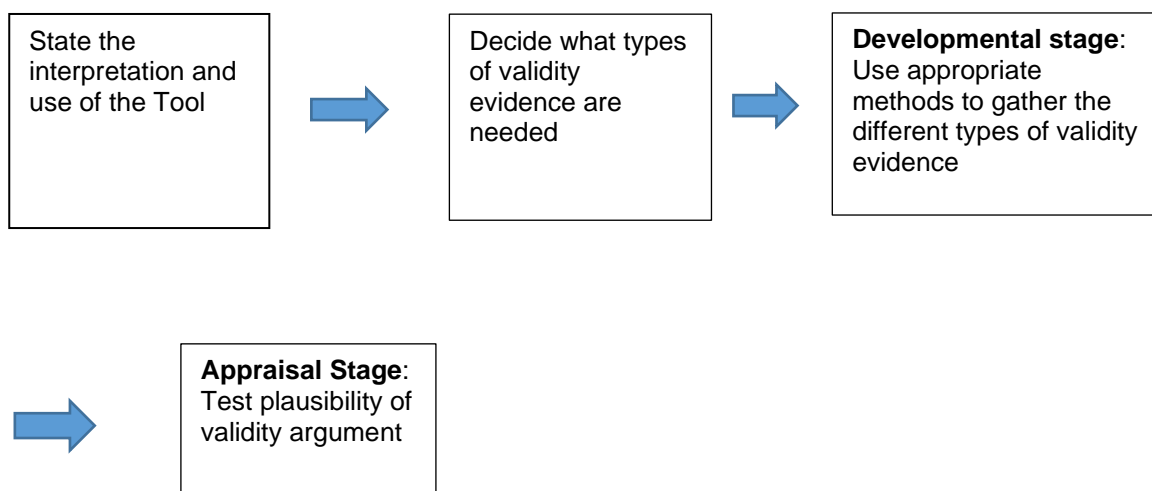
Post validation, the Keeping Birth Normal Tool (KBN) has the potential to support implementation through structured preceptorship and peer review processes to reduce variations, promote physiological birth, and improve outcomes. It can be used by midwives to provide evidence of skill development when seeking revalidation, recently introduced by the Nursing and Midwifery Council (NMC,2015). It may be considered for use by Trusts who may be given responsibility for supervision under current changes proposed by the Government to the statutory supervision of midwives (DH,2016).

In relation to research it can be used to produce more robust evidence compared to surveys and interviews, often used to study implementation (Ubbink *et al*, 2013). It could be used widely in the field of normal birth to measure and support the implementation of evidence and gather evidence into why interventions are reduced in some environments compared to others, measure the inclusion of women in decision-making and potentially enable researchers to draw causal links between the use of approaches associated with reduced interventions and outcomes.

Validation

The validation of the KBN Tool is informed by Kane's Interpretation and Use Framework (Figure 1). This framework is based on the theory that validity is not about the properties of a Tool, rather the inferences that are drawn from its use (Kane 2013a; Messick, 1989, pp.13; AERA, APA, NCME, 1999). This is relevant to healthcare where interventions are concerned with achieving a particular outcome. For example, where evidenced-informed care is used, does it result in reduced interventions and improved outcomes and how is the use of evidence to be supported so that positive outcomes can be achieved? This framework is chosen because it offers a practical and easy to use guide on a complex process. It promotes an iterative process to maximise validity and reduce error from instrument design (Kane, 2013a). There are two stages to the validation, a developmental stage and an appraisal stage.

Figure 1: Kane's IUA framework



The validation of the KBN Tool is in the developmental stage and the aim of this study is to pilot the Tool in the practice environment.

Its objective is to:

- Rate the relevance of the domains to reducing unnecessary interventions
- Explore the views of practitioners about the domains, items and scales of the KBN Tool

- Explore the usefulness of the Tool in supporting the implementation of evidenced-informed skills
- Identify barriers to implementation.

The evidence gathered will be used to refine domains, items and rating scales prior to gathering validity evidence about content. The study will also explore the experiences of practitioners of using the Tool in practice. This is particularly relevant to developing tools in healthcare where usefulness and relevance including how successful implementation can be achieved must be considered prior to engaging in the lengthy and expensive process of validating a Tool (Streiner *et al.*, 2015, pp.10; Moore *et al.*, 2015).

Ethics approval

The chair of the local Research and Development Office advised that NRES ethical approval was not required as the study did not involve National Health Service patients as participants. The risk of harm to women being cared for by a registered midwife with support from an experienced preceptor are minimal. The women were informed about the study by preceptors and no concerns were expressed. The midwife participants were fully informed about the study and were aware that they could withdraw participation at any time. Confidentiality and security of data were ensured (Declaration of Helsinki, 2004; Data Protection Act, 1998).

Methods and methodology

This study drew on pragmatism to inform its design. Pragmatism is often linked with practicalities associated with the “how to” aspects of research and the use of mixed methods (Creswell and Clark, 2011). Morgan (2014) argues for a philosophical foundation to pragmatism. He draws on Dewey (2008) and notes that research is a process of inquiry based on thoughtful reflection informed by experience (Dewey, 2008 in Morgan, 2014, pp.1046-1048).

In gathering validity evidence, this study applied the philosophical underpinning of pragmatism by using practitioners and their experiences of using the Tool to inform the development of domains, items and scales and strategies to promote successful implementation. It resonates with validity theory where processes are not purely focused on developing the properties of a Tool but includes gathering evidence to support the interpretation and consequences from the use of the Tool (Kane, 2013a; Wolming and Wikstrom, 2010). Preceptorship offered the opportunity to pilot test the Tool. Preceptorship is not mandatory and the manner in which it is organised varies amongst Trusts (DH, 2010). However it is an important process for targeting interventions to support implementation.

Mixed methods were used (Creswell and Clark, 2011). A quantitative method was used to rate the relevance of domains to reducing unnecessary interventions and the usefulness of the Tool. A qualitative approach was used to explore the experiences of preceptors and midwives who used the Tool in practice; refine domains, items and rating scale; explore usefulness in greater depth and identify barriers to implementation.

Sample

Midwives

All midwives involved in the care of labouring women at a local Trust were invited to participate in the study. This was sought via an email list. Flyers inviting participation were displayed prominently in all birthing environments. The consultant midwife identified several midwives who could benefit from participation but recruitment from this group was unsuccessful. The final sample comprised three midwives from the birth centre and three midwives from the delivery-suite (Table 2).

Table 2: Description of sample

Midwife	Current Location	Experience
Midwife 1	Birth Centre (free standing)	1 year (delivery-suite)
Midwife 2	Birth Centre (free standing)	1 year (delivery-suite)
Midwife 3	Birth Centre (free standing)	6 months (delivery-suite)
Midwife 4	Delivery-suite – moved to the birth centre after 2 nd evaluation	6 months (delivery-suite)
Midwife 5	Delivery-suite	2 years
Midwife 6	Delivery-suite – dropped out after 3 rd evaluation	2 years

Preceptors

Midwives with expertise in working in the field of normal birth were invited. Four had several years of experience working in a free-standing maternity unit and had regularly acted as preceptors. Apart from relevant practice experience, three were also involved in research into normal birth. Two were lecturers in Midwifery and acted as preceptors on the delivery-suite where it was felt that piloting the Tool without external preceptors would not be possible because of staffing shortages.

Table 3: Description of sample

Preceptor	Experience
Preceptor 1	Senior Midwife/Researcher/PhD Student/Lecturer
Preceptor 2	Senior Midwife/Researcher
Preceptor 3	Senior Midwife
Preceptor 4	Senior Midwife
Preceptor 5	Senior Midwife/Midwifery Lecturer/Researcher

Using the Tool

Midwives began the process by assessing their practice with the Tool. This was followed by five sessions in practice with preceptors where the midwife's practice was assessed, supported, and progress measured by their preceptor. The portfolio at the end of the preceptorship included five

rated practice sessions by the midwife and preceptor, five reflections on using approaches to reduce unnecessary interventions, and a record of practical application of these approaches.

Data Collection and Analysis

Midwives and preceptors who used the Tool completed a questionnaire which had been previously piloted with two other researchers before use. It comprised statements about the relevance of the domains to reducing unnecessary interventions, the need for such a Tool in practice and its usefulness in different categories of staff and the provision of preceptorship to support implementation. It employed a Likert scale ranging from “very useful” to “not at all useful”. Quantitative data from the questionnaire were recorded on a Microsoft Excel spreadsheet and frequencies calculated.

Semi-structured interviews of one hour duration with five midwives, and five preceptors were used to explore in greater depth all the elements contained in the questionnaire. The interviews were conducted at the participants’ place of work in privacy. All the participants were practitioners and known to the researcher except for three midwives from the delivery-suite. The interviews were audio-recorded and transcribed in full by the researcher.

Data were analysed using thematic analysis. The researcher read the data several times, compared the data sets and colour coded commonly recurring themes (Green and Thorogood, 2004).

Specificity and frequency were noted. Under each theme, descriptive text was used to explore each theme supported by quotes drawn from transcribed data (Pope and Mays, 2000). The data analysis and report were subsequently sent to all participants in the study for comments and no disagreement was expressed (Pope and Mays, 2000).

Findings

Five midwives and four preceptors completed the questionnaire in full. One of the preceptors felt unable to use the Likert scale to rate the relevance of the domains.

Generally the midwives and preceptors felt that the Tool:

- Acted as a checklist to keep care on a normal pathway and provided a platform to discuss and support the implementation of evidence-informed skills
- Fostered a physiological understanding of birth
- Provided an opportunity for reassurance, feedback and develop confidence.

Three preceptors and one midwife saw the Tool as being very useful for measuring practice and two preceptors and four midwives felt it was quite useful. The midwives had been in practice for six months to a year before participation and explained that they would have benefited much more if they had used the Tool soon after qualification. (Tables 4 and 5).

Table 4: Rating by midwives of usefulness of measuring practice in different categories of staff and preceptorship

Midwives	Very useful	Quite useful	Not very useful	Not at all useful
Use in measuring practice	1	4		
Use in student midwives	4	0		
Use in newly qualified midwives	4	1		
Use in experienced midwives	1	3	1	
Usefulness of preceptorship	3	1	1 (did not receive preceptorship from the same midwife)	

Table 5: Rating by preceptors of usefulness of measuring practice in different categories of staff

Preceptors	Very useful	Quite useful	Not very useful	Not at all useful
Use in measuring practice	3	2		
Use in student midwives	3	1		
Use in newly qualified midwives	3	1		
Use in experienced midwives	2	1	1	

Midwives felt that interventions via preceptorship with the Tool offered opportunities for reflections, critical discussions, writing about their experiences in reducing unnecessary interventions, and building confidence to implement evidenced-informed skills. One felt she would have benefited much more from the experience if she was supported by same preceptor

Of the three midwives who participated from the delivery-suite, only one completed her participation there. Despite being qualified for two years, she found the Tool very useful. One moved to the birth centre after her second meeting with her preceptor, while another dropped out of the study.

One of the preceptors (P5) described the Tool as “difficult to get to grips with”, particularly the use of the Likert scale to monitor progress and felt that the scale of 0-4 did not adequately capture the development that had taken place: it was seen more as a Tool to support and reflect on practice. The use of the Tool to rate practice was questioned because of the many constraints on the ability of the midwife to use skills to reduce unnecessary interventions.

Refining domains, items and rating scale

All domains were scored highly for relevance to reducing unnecessary interventions with a score of 7/10 or more (See table 3). One of the midwives wrote that domains 1, 2, 6, 7 and 12 were domains where standards are often allowed to slip. She hoped that “when the Tool was used, these would be the areas that showed the greatest improvement or receive the highest rating” (M1). The relevance of these domains was also scored highly by all midwives.

Midwives and preceptors endorsed items in each domain as relevant to reducing unnecessary interventions but felt that the numbers of items could be reduced because they were similar. Based on their feedback items were reduced from 56 to 50.

Table 3: Rating of relevance of domains

	Relevance of domains in measuring and supporting evidenced-informed skills in keeping birth normal using scale of 1-10.	Number of midwives				Number of preceptors			
		Scales (1-10)				Scales (1-10)			
	Domains	7	8	9	10	7	8	9	10
	Do								
1	Philosophy			1	4			1	3
2	Facilitating choice	1		1	3	1			3
3	Guidelines				5				3
4	Environment			2	3			2	2
5	Partnership working and communication	1	1	1	2			1	3
6	Supporting women in labour				3				4
7	Progress in early labour	1		1	2			1	3
8	Active labour		2	1	2			1	3
9	Imminent birth		2	1	2			1	3
10	Birth of placenta		2	1	2				4
11	Birth of baby and breastfeeding		2	1	2		1	1	2
12	Respecting women			1	4		1	1	2

Qualitative analysis of data from interviews

Four main themes were identified: usefulness and relevance, measuring practice, supportive relationships and preceptorship

Usefulness and relevance of the Tool

All participants felt the Tool was useful and relevant to measuring and providing support to keep birth normal.

‘The Tool is comprehensive. Its biggest strength is it enables us to speak concretely and objectively about reducing unnecessary interventions. Everything we do has a physiological impact. Breaking it down, assessing, identifying needs with plans to improve is fundamental to improving practice (P1).

‘We went to work on the delivery-suite. We changed everything around to create a good environment, dimmed light. It was good to know why I was doing what I was doing. This was not guesswork. The Tool probes these discussions which I would not otherwise have with my preceptor’ (M3).

For the midwives, the structured approach acted as a reminder to use evidence-informed skills. It presented an opportunity for reflection and created dialogue about the approaches being employed. It fostered confidence in the use of approaches that the midwives described as ‘it works’ (M5).

The Tool was described as particularly necessary in the delivery-suite environment where normalising birth is more challenging. Normalising birth in high-risk women was also identified as an important area for development using the Tool. The experience of using it amongst high-risk women by a midwife who was supported was described as follows:

‘It is a Tool that can be used in all groups of women to reduce unnecessary interventions. It was a good experience for the student midwife as well and an opportunity to observe and be part of a team which allowed women to move from high risk to as normal as possible’ (M5). This midwife felt confident after her participation in the study, ‘to not just to keep birth

normal but also to challenge unnecessary interventions’.

Measuring practice

The five midwives in the study rated themselves highly in their reflection on practice. However, preceptors found that several items (approaches) needed further support and development. The midwives agreed:

“After using the Tool, I felt able to offer more options and better able to support women’s choices. I was using some of the skills in the Tool more than my colleagues on the delivery-suite but on the birth centre it was deeper, a whole change in attitude to birth. There was a lot to reflect on.....”(M1)

This demonstrates the need for some form of peer or external assessment to develop expertise.

Rating also allows the preceptor to provide specific support described by midwives as more useful in this study and others on experiences of preceptorship in practice (Hughes & Fraser, 2011). Two preceptors questioned whether rating could be discouraging to midwives who were newly qualified. There were concerns about the impact on practice by other pressures in their work environment. A softer rating demonstrating a need for support was suggested by one preceptor. Others felt differently describing it as smart way to learn and needed in midwifery practice, where learning was very much ad hoc. One midwife argued that formal assessments were an important part of improving standards: “such a Tool would fill this gap” (P3). Another said:

“It is unacceptable for midwives not to be skilled in the items that the Tool describes or say they do not want to use to use such approaches. Can you say you do not want to do an epidural top-up? If you cannot say this, how can you say you do not want to do a water birth?”(P1).

None of the midwives expressed concern about being rated. They understood that they were being supported to improve their skills and were glad to receive the support: “I knew what I did well and what I could do better next time”. However, they were a self-selected group keen to participate in

the study.

One midwife described her learning as having an “enhanced understanding of physiological labour and birth’ and another as ‘being supported to apply theory to practice”. This was evidenced in written reflections by the midwives and provided greater detail regarding specific learning that had taken place in relation to several items in the Tool.

Supportive relationships

The midwives felt they needed the support of their preceptor to not only implement approaches in the Tool but also receive reassurance that they were on the right path, be praised and encouraged. Not all of them used the approaches the Tool describes prior to qualifying or during their induction on the delivery-suite.

Initial reflection on their practice prior to meeting their preceptors was particularly useful in helping them assess their own needs in a non-threatening way. Subsequent discussions and reflections with their preceptors and preceptor role-modelling of approaches were important facilitators of midwife learning:

“I have witnessed how simple words said in the right manner helped my client calm down. I understood how good communication, close relationship with the client was important”
(M5).

Preceptors felt working with the Tool helped foster a relationship where the midwives felt more able to ask for support without feeling that they would be judged:

“It can create a culture of open critique where the midwife can readily ask for help to improve their practice, communicate freely to learn.....P2, P3”.

Preceptors reported that the Tool provided a platform for raising issues with midwives which they otherwise might not have done, particularly if they did not know the midwife or her practice. They

were always conscious that they were working with a qualified practitioner.

The midwives felt much better supported to develop their skills on the birth centre than on the delivery-suite. They felt that even experienced midwives on the delivery-suite lacked skills to support their development in skills to reduce unnecessary interventions. All the preceptors and some midwives felt that senior midwives on the delivery-suite could benefit from being observed and supported in their practice using the Tool.

The midwives described their experience on the delivery-suite as follows:

“We were always coming up against people and situations that did not want us to keep birth normal”. (M2)

“They did not want to explore options. They said this is how we have always done it. I was glad my preceptor was external or I would not have been able to do this”. Sometimes it was easier to get support from obstetricians than midwives”. (M5)

One of the midwives on the delivery-suite felt bullied and unsupported within the unit and withdrew from the study. The preceptor of the midwife who left the study said:

“She moved from keeping birth normal to not engaging in these practices depending on the pressures put upon on her. Often she was overloaded with work so she could not cope or be assigned to complex cases”.

This midwife did not consent to an interview. Her preceptor felt the midwife still benefited from the three sessions in which she was involved. Another moved to the birth centre to continue her practice and felt:

“If I had not come to the birth centre, I would not be using the approaches the Tool described. I was always confronted with ‘this is not how we do it here’ and I did not feel able to stand up to this”. (M4)

Both preceptors on the delivery-suite found that such attitudes also interfered with their ability to support the midwives. Midwives participating in the study were assigned to tasks that did not allow the use of the Tool despite coordinators being informed about their participation. They were assigned to high-risk women when the study required them to be assigned to low-risk women. Preceptors had to re-arrange the planned engagement with midwives. One preceptor eventually decided to support her midwife by using the Tool amongst high-risk women with good results.

Preceptorship

Preceptors felt their ability to build relationships was affected by time allocated to other responsibilities. On the birth centre, this included antenatal, labour and postnatal work. Each shift was covered by just two midwives. On the delivery-suite a lack of staffing, rostering that did not assign preceptors to their midwives and a culture that did not view preceptorship as important to midwife development were problems.

“We were given a portfolio to complete but no one looked at it after this. We were expected to get on with it”. (All midwives expressed this)

Midwives and preceptors questioned the ability of midwives to preceptor and use Tools that are not currently in use nor supported in midwifery.

“The quality of preceptorship needs to improve. There is very little actual preceptorship that takes place. Midwives have become de-skilled in this area. You need competence in the use of the Tool, be a competent practitioner as well as skilled in helping others knowing when to intervene and when to step back.....” (P1, P3)

However there was optimism about the possibility of the Tool creating a snowball effect to develop a team of expert preceptors in normal birth in the future.

Discussion

This pilot study explored the usefulness and relevance of the KBN Tool to measure and support the implementation of evidence to reduce unnecessary interventions. All participants felt that the Tool was useful and relevant for this purpose. This was supported by the high ratings given to all twelve domains in the Tool. The midwives felt it should be introduced soon after qualification for greatest benefit, but findings suggest introduction at any point can still offer benefits.

The Tool promotes a closer scrutiny of midwifery practices to target specific support and improve outcomes. Ratings by preceptors challenged midwives' perceptions of the use of evidence-informed skills and created dialogue and reflection to improve implementation. There was a reluctance amongst some preceptors to rate practice because of perceptions that it is unfair in difficult work environments and suggested that the scale include rating to denote need for support. However a 5-point scale can result in bias from a reluctance to be critical (Streiner *et al.*, 2015, pp.105). This reluctance was not universal with some preceptors noting that such assessments were crucial to improving implementation. Such an approach is identified as needed in midwifery supervision and peer review processes (Kings Fund, 2015; RCM, 2015; Kirkup Report, 2015).

A willingness to be assessed and supported is necessary to improve implementation. The lack of response to participation in the study by some midwives suggests that such willingness may not always be present. This may be related to cultural barriers to the implementation of such evidence in some birth environments. Cultural obstacles described by O'Connell and Downe (2009) in their metasynthesis, where expectations are that midwives adopt to the norms in the environment, power and control exerted by senior midwives to ensure norms remained and compliance by midwives are evident in this study.

Midwives were questioned about using approaches to reduce interventions that were not commonly employed in the unit. Team leaders were not open to exploring options preferring to intervene in the labour. Preceptors also encountered midwives who were obstructive in failing to assist midwives

wanting to implement evidence or develop their skills by not making opportunities to work with low-risk women available to them.

Midwives who felt unsupported on the delivery-suite moved to the birth centre, where they believed there would be better supported to develop skills to reduce unnecessary interventions. This could also be a reason why approaches to reduce interventions tends to be confined to midwife-led environments. However, when only 8% of women use such environments this might be detrimental to improving outcomes (Birthplace Collaborative Group of Studies, 2011).

Kennedy et al (2010) identify a need for further research on midwifery practices that contribute to lower caesarian section rates and why practices vary between environments. The KBN Tool may permit such evidence to be gathered within the context of a mixed method study to include factors that act as barriers to implementation of these skills. This is important in promoting consistency of utilisation of such approaches across different birth environments.

One of the questions that this study raises is whether the use of the Tool can develop midwives who are better able to resist dominant medicalised cultures on delivery-suites. This is worthwhile investigating: most midwives work in large tertiary settings and reducing unnecessary interventions in delivery-suites is important to ensuring positive outcomes for low and higher-risk women.

The successful implementation of such a Tool requires expertise in approaches that reduce unnecessary interventions amongst midwives who act as preceptors. Investment in training is needed in the use of structured approaches that employ reflective models to support learning, the use of rating scales and measures of progress to ascertain effectiveness.

On the birth centre, despite the availability of skills to reduce unnecessary interventions, lack of staffing and the organisation of work in the unit interfered with the ability to provide effective support. On the delivery-suite, similar factors and a culture that did not promote normal birth acted as barriers (Fraser and Hughes, 2011; NMC, 2011; O'Connell and Downe, 2009). This suggests the

need for mandatory skilled preceptorship as a crucial intervention to ensure support for midwives in all birth environments including protected time for such activity (DH, 2010).

The KBN Tool requires and warrants further tests for validity and reliability prior to large-scale use: it has the potential to measure and support the development of expertise in keeping birth normal.

However, its successful implementation within the context of preceptorship and possibly other supportive peer relationships will require commitment and investment in the education of midwives and leadership that challenges cultural barriers to promoting normal birth.

Conclusions

Every midwife in this study, whether newly qualified and experienced, felt they had benefited from structured preceptorship using the Tool. The Tool provided a platform for measuring the use of evidence-informed skills, promoting dialogue and building a relationship that fostered role-modelling and reflection to promote implementation.

Staffing shortages that reduce the opportunity to implement such formal and structured processes which facilitate support need to be addressed. Organisations need to develop and support a culture of preceptorship in the clinical environment. This includes rostering and staff allocation during the course of a shift, assigning of midwives to supportive relationships and ring-fencing time for such activity. There is an urgent need for management to address a culture that is obstructive to approaches which normalise birth and penalises midwives who want to implement and develop such approaches.

In conclusion this study shows that the KBN Tool has the potential to be used in the context of the preceptor/midwife relationship to measure and support the implementation of evidenced-informed skills to reduce unnecessary interventions. Other types of validity evidence about content, response processes and internal structure will need to be gathered prior to testing in a larger study before implementation. Successful implementation will require expertise in the use of approaches to reduce unnecessary interventions amongst preceptors in obstetric-led environments. Additional

training in the use of rating scales, specific skills in role modelling and critical reflection is also needed. The readiness of midwives to learn is fundamental. Investment in the use of structured approaches to improve implementation supported by organisational cultures that promote normal birth is crucial.

Strengths and weakness

One of the main strengths of this study is the use of a framework to ensure a thorough application of validity theory to practice. The inclusion of practitioners who were known to the researcher and a keenness to promote a physiological approach could have resulted in response bias. The use of an iterative process that the Interpretation and Use Framework promotes will address such biases. The next stage in this iterative process is content validation where further validity evidence about domains and items using subject experts and women will be gathered.

This is a small study. On completion of the developmental stage, the Tool will undergo plausibility testing using a larger sample. This promotes generalisability of the Tool for large scale implementation and validity of inferences drawn for its use.

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