

Assessing the impact of midwives' instruction: the breastfeeding motivational instructional measurement scale

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The developing and testing of the breastfeeding motivational measurement scale was part of a larger study that aimed to develop and test a motivational version of current breastfeeding instruction. By visiting the Doctoral Midwifery Research Society website – www.doctoralmidwiferysociety.org – interested readers can access a video presentation of the overall research study.

Abstract

Background. It has been reported that professional support is an important motivational factor in breastfeeding outcomes, however evidence suggests this is not necessarily the case. For women to be motivated through routine instruction, the optimal balance between value of breastfeeding with expectancy for success must be achieved.

Aim. To develop and test the breastfeeding motivational instructional measurement scale (BMIMS) as a means of exploring the value and expectancy for success (confidence) that breastfeeding women experience when receiving best breastfeeding practice.

Method. Informed by current literature and previous exploratory work, four motivational theories were incorporated into the BMIMS. A total of 14 items represented the Breastfeeding Self-efficacy Scale – Short Form. The remaining 37 items were transcribed from a previous task-motivation study. The resulting 51-item scale was exposed to expert review. Following ethical approval and verbal consent, the scale was pilot-tested (n=20) and completed via structured interview by a further convenience sample of breastfeeding women (n=182).

Results. Exploratory factor analysis – an analytic technique for exploring underlying constructs or factors – was performed. Parity was used as a selection variable. The results revealed that first-time mothers highly valued the experience of breastfeeding, but low expectancy for success and a low perception of midwife support. Experienced mothers differed in that they reported a positive expectancy for success and were more moderate about the value they placed on breastfeeding.

Conclusions. When value is high and expectancy for success is low, feelings of stress related to the behaviour often results. Although all mothers reported a perceived lack of midwife support, experienced mothers were empowered to sustain their expectancy for success. Current best practice must work to achieve the optimal motivational balance between value and expectancy for success in primigravida women.

Key words: Motivation, breastfeeding, midwife instruction, tool development, factor analysis, value and expectancy for success

Introduction

The 2005 *Infant feeding survey* reported that breastfeeding initiation rates were as high as 78%, however national and international statistics show that many women continue to abandon breastfeeding in the first six weeks (Infant Feeding Survey, 2005; European Commission, 2004). In fact, according to Dykes (2006), almost a fifth of women in the UK will stop breastfeeding before leaving hospital.

Researchers have identified many non-modifiable predictors of early breastfeeding cessation, such as age and parity. However, recent research suggests that it is the routine support offered by health professionals, which is failing to meet women's breastfeeding needs (Mozingo et al, 2000; Gill, 2001; Hong et al, 2003). Faced with the reality that routine professional support is often ineffective and that many women abandon breastfeeding, midwives and researchers are challenged to discover the

reasons for this.

In order to motivate women to continue breastfeeding, routine instruction by health professionals must find the intricate balance between two main motivational components – value for the behaviour and expectancy of success (confidence that they will succeed). Grounded in a conceptualisation of motivation known as expectancy-value theory, this motivational approach 'assumes people are motivated to engage in an activity if it is perceived to be linked to satisfaction of a personal need (value aspect) and if there is a positive expectancy for success (expectancy or learning aspect)' (Keller, 1987: 3).

To date, little is known about whether current best instruction achieves the desired motivational balance between encouraging women to value breastfeeding and increasing their expectancies that they will succeed. While communicating the health benefits of breastfeeding can increase mothers' motivation to breastfeed, researchers

have shown that women who value breastfeeding highly often stop before they intended to (Avery et al, 1998). It is thought that the latter is related to women's low expectancy for success (confidence) combined with a lack of professional support (Mozingo et al, 2000; Chezem et al, 2003; Hanss, 2004).

Over the last decade, an expectancy-value theory, namely the theory of planned behaviour (Ajzen and Madden, 1986) has been applied in an effort to explain breastfeeding duration (Janke, 1994; Wambach, 1997; Duckett et al, 1998; Avery et al, 1998; Dick et al, 2002; Dodgson et al, 2003). Consisting of three main components, application of the theory of planned behaviour explored the motivational impact of attitudes, subjective norms (influence from others) and women's perceived control over breastfeeding. Supporting the overall conceptualisation of the expectancy-value balance, the above named researchers reported that the key factors in sustained breastfeeding behaviour are positive breastfeeding attitudes and perceived maternal confidence. Based on the evidence to date, current best practice aims to help women create positive attitudes to, and greater confidence in themselves to ensure successful breastfeeding behaviour. Thus creating the optimal balance between value and expectancy for success is critical to women's motivation to breastfeed, because when value is high but expectancy for success low, psychological stress occurs.

Prompted by women's reported stress when breastfeeding and accusations that health professionals fail to provide adequate support, as part of a larger research study that aimed to enhance the motivational impact of current best practice, this paper describes the development and testing of the breastfeeding motivational instructional measurement scale (BMIMS) within a Baby Friendly Initiative (Baby Friendly Initiative, 1998) instructional environment. Two objectives were central to the development and testing of the breastfeeding motivational expectancy-value scale. They were to explore:

- If a motivational balance existed between the value women place on breastfeeding and their expectancy for success
- Women's perception of current best practice in relation to their expectancy-value motivation to continue breastfeeding.

Literature review

Theoretical rationale and development of the BMIMS

There are multiple theories of human motivation that could be used to explain the motivational impact of current best practice on women's motivation to sustain breastfeeding. Selection of four theories was pre-determined as a result of a substantive literature review that focused on an expectancy-value approach to understanding breastfeeding. In addition, two structured observation studies that explored the motivational content of routine breastfeeding instruction informed the theoretical development of the scale (Stockdale et al, 2005, 2007).

Task value

In order to determine the values that women held with regard to breastfeeding, it was necessary to explore the different aspects of task value (Jacobs and Eccles, 2000):

- Attainment value, which refers to the personal importance of doing well and so has a confirming or disconfirming effect on one's persistence and effort to perform the behaviour
- Intrinsic value, which is the enjoyment or satisfaction that the individual gets from performing the behaviour
- Utility value, which is the degree to which the task relates to current and future goals, such as health or career.

Goal theory

Holding a positive value has a positive impact on the goals that people create – in this case the goal to sustain breastfeeding. According to Locke and Latham (1990), goal formation has a positive impact upon individual's performance. Items that focused on the four main goal propositions – goal difficulty, goal specificity, goal feedback, and goal participation were required. Classified in motivational terms mainly as confidence and satisfaction building, goal theory was incorporated into the BMIMS as a means of exploring the underlying constructs associated with women's adopted goal (breastfeeding), but more specifically the goal feedback they routinely received. Satisfaction when breastfeeding was therefore defined specifically in relation to performance feedback, as feedback is directly related to the instruction provided and not to satisfaction per se.

Self-efficacy theory

Even though individuals may value breastfeeding and make it their personal goal, they will also consider their capabilities and the likelihood of surviving the environmental stresses and challenges associated with breastfeeding. To explore this aspect of motivated behaviour, the items that measured women's self-efficacy were required. As a theory of competency and mastery, self-efficacy operates on the premise that initiation and persistence towards a behaviour are determined primarily by the person's cognitive judgements and expectations concerning their ability to perform the behaviour. The acceptance of the concept of self-efficacy is based on the assumptions that people ask of themselves: Do I have the thinking, the resources and the persistence to perform this behaviour and if I do have the knowledge, can I put it into action?

Attribution theory

Although value, self-efficacy and the goal theories provide a multifaceted approach to understanding the motivational impact of routine instruction, there was a need to explore further why women in the same situation can react differently to their experience. To help explore this phenomenon, further items were required in the BMIMS, which focused on Feather's (1982) conceptualisation of

attribution theory. Attribution theory provides a classification process that explains the consequences of why one person can maintain a sense of success, while another will perceive failure. The three main dimensions of attribution theory include internal/external locus, level of control and stability.

Search for measurement tool

A computerised literature search covering the years 1994 to the most up-to-date publications (October 2005) was completed with the aim of finding an established measurement tool that incorporated some or all of the four theories detailed above. Databases included CINAHL, BNI, Cochrane, PsycINFO, and MIDIRS. The *A-Z of electronic journals* was also searched combining key phrases such as 'breastfeeding measurement tool', 'self-efficacy and breastfeeding', 'breastfeeding and goals', 'breastfeeding motivation', 'breastfeeding and confidence', 'value and breastfeeding' and 'breastfeeding satisfaction'. No measurement tool was detected that applied all four theories.

The Breastfeeding Self-efficacy Scale-Short Form (BSES-SF) (Dennis, 2003) shown to be a reliable predictor of breastfeeding behaviour at one week, four weeks and eight weeks postpartum was selected to measure situation-specific self-efficacy. The remaining BMIMS items relating to goals, valence and attribution theories were transcribed from an unpublished PhD that explored individual's motivation to perform a task (Irwing, 1991).

Method

Transcribing the selected items

A total of 37 items were transcribed from the task-motivation context (Irwing, 1991) to a breastfeeding context. The wording of the items was adapted for breastfeeding, while maintaining the declarative nature and clarity of the meaning. Items that became ambiguous when transferred to a breastfeeding context were removed – for example 'There is an obvious beginning and end to this job'. Consideration was given to the approximate equal intervals between points in the rating scales. The self-efficacy scale (BSES-SF) applied five point anchors, however Irving (1991) used a seven-point scale. Early in the development of the BMIMS, both the five- and seven-point rating scales were retained for expert review. As recommended by Nieswiadomy (2001), a set of instructions accompanied each section.

Expert review

Four experts were asked to peer view the instrument – a motivational expert, two health research experts and a midwife expert. In relation to the motivational aim of the items, the reviewers were asked to comment on the clarity and readability of each item. The experts suggested changes that included the use of a seven-point scale as a means of increasing consistency and the variance of items (Pett et al, 2003). In addition the item 'I can always keep wanting to breastfeed' was highlighted

as lacking clarity of meaning, that is the term 'always' implied a frequency of having the feeling rather than a measure of intensity of feeling. The item stems that applied the prefix 'I can always' were that of the BSES-SF (Dennis, 2003). As a result of discussion with the expert panel, the prefix 'I can always' was maintained until its inclusion or exclusion was informed by the pilot study.

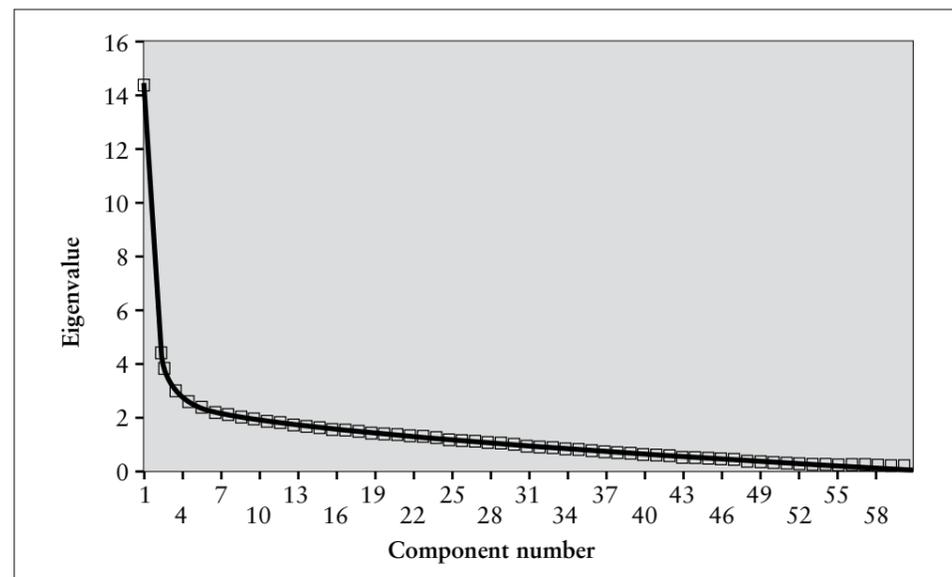
The readability statistics (Flesch-Kincaid Grade, 1997) resulted in a satisfactory score of 7.3 (a score between 7.0 and 8.0 is an indication of a suitable reading level for sixth graders). Ethical approval to distribute the questionnaire to women who were breastfeeding was obtained from the research ethics committee at the local university and from the research committee of the participating Trust. Women were assured of anonymity and confidentiality. Exclusion criteria included non-English speaking women, incidences of infant and mother separation and infant abnormality.

Piloting of the BMIMS

The inventory was piloted with a convenience sample of women who had initiated breastfeeding and were receiving postnatal breastfeeding instruction by midwives in hospital or the community (n=20). Exclusion criteria included incidences of newborn abnormalities that affected infant-feeding behaviour and infant and maternal separation in the early postnatal phase. The inventory took less than 20 minutes to complete and participants were asked for additional information concerning the structure and clarity of the items. Of the 20 participants, 17 were accessed while in hospital (ranging from 24 to 72 hours postnatal). The remaining three women were visited in their homes (ranging from one to two weeks postnatal). A total of 12 participants were employed, the remainder were not. The sample represented all levels of occupations, although not all who recorded their occupation were actively employed – three categorised themselves as 'professional', two at a managerial level, three 'clerical', four described themselves as 'skilled', five 'non-skilled' and one as 'other'. Two women who gave consent informed the researcher that they intended to stop breastfeeding. These two cases were retained on the basis that their experience was relevant to the motivational impact of routine breastfeeding instruction. Due to the small sample size, statistical analysis was not performed. However, the following two amendments were made to the BMIMS as a result of participant feedback:

- Participants expressed their preference to complete the questionnaire as a structured interview and not independently
- Two participants reported that item 21 – 'I can always keep wanting to breastfeed' was difficult to interpret. Further clarification of the meaning of this item was offered to women as a result of the pilot study. Overall, no revision was made to the structure or clarity of the 51-item questionnaire.

Figure 1. The scree plot of the breastfeeding instructional motivation measurement scale shows that three factors explain most of the variance



Sample

At one hospital site over a period of 12 weeks, a convenience sample of all women who met the inclusion criteria, that is women who had initiated breastfeeding and were receiving postnatal breastfeeding instruction by midwives in hospital or the community, were invited to take part in the study. A total of 182 were approached and all agreed to participate. As no structural changes were made to the questionnaire following the pilot study (n=20), the two samples were pooled, resulting in a final sample size of 202 breastfeeding women. Tabachnick and Fidell (2001) advise that pooling samples to increase sample size can on occasions be advantageous in relation to factor analysis.

Data analysis

Factor analysis is a statistical procedure that is usually performed in the early stages of questionnaire development. Although computationally the analytic procedure seems complex, conceptually the procedure is straightforward. Using correlation (-1 to +1), the computer is asked to determine which variables go together to form a concept or construct (called a factor) related to the subject matter. The correlation co-efficients (called factor loadings) indicate the direction and strength of the relationship between the item and the factor that it is placed in. For example, a factor loading of .70 indicates a strong positive correlation between the item and factor, while -.70 indicates a strong negative correlation. Factor loadings of less than .35 are normally excluded from the results. Often the most challenging step for the research team is to find a meaningful interpretation of the resulting factors. In incidences where the factors have previously been determined, interpretation is straightforward (called confirmatory analysis), however when

items are being placed together for the first time, exploratory factor analysis is used and interpretation of the results is paramount to understanding the subject. As the relationship between the theoretical measures of goals, self-efficacy, value and attributions had not previously been explored in relation to breastfeeding duration, exploratory factor analysis was used to explore the factor structure of the newly-developed BMIMS. This was achieved by using principle components analysis (PCA) with an oblique rotation.

Following entry of the data into SPSS (11.5), a

random sample (25%) of entries was rechecked to ensure accuracy. Given that factor analysis is particularly sensitive to outlying cases (Tabachnick and Fidel, 2000), outliers were detected using hierarchal clustering analysis. Initially two cases furthest from the cluster (cases 24 and 160) were identified and removed, while case 156 also emerged as a further outlier. However, with these three outliers de-selected, discriminant analysis was repeated and no further outliers were evident in the sample. Completed data was available for 188 participants and less than 5% of values per variable were missing. In line with Tabachnick and Fidell (2000), regressional techniques were employed to estimate 11 missing values, thus giving a final sample size of 199 for factor analysing.

Findings

Demographic details

A total of 202 women who were receiving routine midwife breastfeeding instruction were approached and gave consent to complete the BMIMS. Some 166 were interviewed while in hospital and the remaining 36 in the community. On an intention-to-treat basis, it was noted that of the 202 women, 100 of the sample were first-time mothers. The mean age for the total sample was 30 years. A total of 20% of women reported that they did not work, 25% reported having a professional vocation, 12% a managerial vocation, 18% clerical, 11% skilled and 14% non-skilled or other. Overall (n=202) 28 women (14%) had already made the decision to discontinue breastfeeding and so intended to start formula-feeding within hours of completing the interview.

BMIMS instrument

Kaiser's Measure of Sampling Adequacy was 0.900, indicating that the BMIMS items were appropriate for PCA

Table 1. Examples of the rotated factor loadings for the three factor model of the BMIMS when applied to first-time mothers

BMIMS items	F1	F2	F3
I would be upset if I did not manage to breastfeed	0.64		
Breastfeeding is not that important to me in the broad scheme of things	-0.64		
I like breastfeeding	0.56		-0.50
Breastfeeding is very meaningful to me	0.80		
It is very important to me that I know how to work at reaching my breastfeeding goal	0.66		
I hate breastfeeding	-0.51		0.44
I feel a great sense of satisfaction when I breastfeed well	0.74		
I look forward to breastfeeding	0.41		-0.59
Breastfeeding requires me to learn skills through effort over time	0.56		
I receive lots of support and guidance from my midwives		-0.78	
The feedback I receive from the midwives tells me what I want to know		-0.89	
There are things I would like to know about my breastfeeding that I am not being told		0.73	
The midwives let me know how well I am breastfeeding		-0.84	
As a result of feedback, I know I am breastfeeding well		-0.73	
The feedback I get from my midwives is not very useful		0.72	
I don't like breastfeeding, but do it because it is the best way to feed my baby			0.48
I have considerable independence and freedom as to how I manage breastfeeding			-0.60
I feel I cannot use my judgement when breastfeeding			0.62
Generally speaking I am very satisfied breastfeeding			-0.73
I frequently think of quitting breastfeeding			0.75
Overall I am no good at breastfeeding			0.73
Breastfeeding is quite simple and repetitive			-0.47
I have trouble figuring out whether breastfeeding is going well or not			0.69

Note: F1=total value of breastfeeding; F2=perceived midwife support; F3=expectancy for success

(Tabachnick and Fidell, 2000). The initial solution using item loadings >0.35 (Comrey and Lee, 1992), resulted in an 11 factor solution, which explained just over 70% of the variance. In total, 51 BMIMS items loaded onto the 11 factors; however factors five to 11 had between three and one factor loadings and this was not considered an interpretable solution. Cattell and Schuerger (1978) acknowledged that use of eigenvalues alone can result in an overestimation of factors, hence the main criteria used to decide on the number of meaningful factors was based on:

- Kaiser's (1960) eigenvalues* >1 factor extraction rule
- Scree plot** analysis

*Eigenvalue is a value that helps the research team decide which factors need to be included in the findings and which do not. For a factor to be considered significant researchers normally expect a factor eigenvalue greater than 1.00.

**A scree plot is a visual representation of the factors and allows the researcher to identify the number of factors that are significant.

- The interpretability of the resulting factor structure (Kline, 1998).

Inspection of the scree plot (see Figure 1) indicated that the cut-off point for factor rotation (where the line changes slope) was three (indicating three factors). In addition, parity was used as a selection variable on the basis that previous breastfeeding experience would alter women's perception of successful breastfeeding.

The three factor solution accounted for 46% of the variance in primigravida women and incorporated 34 BMIMS items (see Table 1). The first factor explained 26.1% of the variance and contained 15 items. These items were concerned with the value aspect of motivated behaviour and were named 'overall value of breastfeeding'. However, three items 'I like breastfeeding', 'I hate breastfeeding' and 'I look forward to breastfeeding' loaded on both factors one and three. The second factor had six items and accounted for 11% of the variance

Table 2. Examples of the rotated factor loadings for the three factor model of the BMIMS when applied to non-first-time mothers

BMIMS items	F1	F2	F3
I like breastfeeding	0.54		-0.47
I frequently think of quitting breastfeeding	-0.75		
I don't like breastfeeding, but do it because it is the best way to feed my baby	-0.61		-0.50
I have considerable independence and freedom as to how I manage breastfeeding	0.48		
I feel I cannot use my judgement when breastfeeding	-0.50	0.41	
I hate breastfeeding	-0.54		-0.44
I have trouble figuring out whether breastfeeding is going well or not	-0.66		
I receive lots of support and guidance from my midwives		-0.69	
The feedback I receive from the midwives tells me what I want to know		-0.88	
There are things I would like to know about my breastfeeding that I am not being told		0.61	
The midwives let me know how well I am breastfeeding		-0.79	
As a result of feedback, I know I am breastfeeding well		-0.77	
The feedback I get from my midwives is not very useful		0.61	
Whether I breastfeed successfully or not is clearly my responsibility		-0.47	
I would be upset if I did not manage to breastfeed			0.53
Breastfeeding is not that important to me in the broad scheme of things			-0.46
I feel a great sense of satisfaction when I breastfeed well			0.73
Most people who breastfeed feel a great sense of personal satisfaction			0.68
I have trouble figuring out whether breastfeeding is going well or not			0.69

Note: F1=total value of breastfeeding; F2=perceived midwife support; F3=expectancy for success

and seemed to reflect a clear theme of 'perceived midwife support'. Just less than 8.6% of the variance was attributed to factor three, which represented a theme of 'expectancy to succeed' (13 items).

Reliability and validity

The current results indicate substantial internal consistency for the three factors: total value of breastfeeding ($\alpha=0.96$), perceived midwife support ($\alpha=0.85$) and expectancy to succeed ($\alpha=0.84$). Validity was assessed in the following ways:

- Items that cross-loaded into two factors ('I hate breastfeeding', 'I like breastfeeding', 'I look forward to breastfeeding') were interpretable within the suggested solution, in that women may agree to like breastfeeding from a value perspective and its perceived benefits however based on their personal experience and consequential expectancy for success, they did not
- Underpinned by the theory of self-efficacy, it was proposed that the distal effects of self-efficacious beliefs from a previous breastfeeding experience would have a moderating effect on non-primigravida women's motivational profile. A difference was noted in the items

that loaded on factor two (perceived midwife support). Two additional items loaded in relation to non-first-time mothers 'I feel I cannot use my judgement when breastfeeding' (0.41) and 'Whether I breastfeed successfully or not is clearly my responsibility' (-0.47) suggesting that experienced mothers felt current midwife support impacted on how they managed breastfeeding (see Table 2)

- To confirm the suggested interpretation, factor one which was defined as 'Value placed on breastfeeding' was re-factored to verify the conceptualised aspects of task value by Jacobs and Eccles (2000). Using PCA with Oblimin rotation, three value-factors emerged:
 - Attainment value for example, 'The amount of effort I put into breastfeeding is worthwhile to me'
 - Intrinsic value which included items of satisfaction such as 'I like breastfeeding' and 'I hate breastfeeding'
 - Utility value, which included items related to present and future goals, for example, 'It is very important to me that I know how to work at reaching my breastfeeding goal' and 'I have a clear breastfeeding goal in mind'.

Discussion

The BMIMS was developed as a diagnostic tool, with the aim of measuring women's value and expectancy for success when breastfeeding and receiving routine instructional support by midwives. Directed by the findings of a previous structured observation study (Stockdale et al, 2005), the scale incorporated four motivational theories: goal theory, attribution theory, self-efficacy theory and valence theory. Self-efficacy was measured using the BSES-SF by Dennis (2003), while the remaining items were transcribed from an earlier study that measured work-related achievement motivation. Expert review confirmed the clarity and meaning of the suggested scale, which contained 51 Likert items. Even though the BMIMS included four motivational theories, analysis of 199 complete data sets revealed a three factor solution that was consistent with the expectancy-value theory of motivation related to routine instruction. The BMIMS demonstrated validity, in that it detected the overall conceptualisation of a value-expectancy approach in relation to known-groups (first-time and non-first-time mothers).

Exploration of first-time mother's motivation to breastfeed revealed high factor loadings in relation to the value placed on breastfeeding, for example 'Breastfeeding is very meaningful to me' (0.80) and 'I would be upset if I did not manage to breastfeed' (0.64). Interestingly, non-first-time mothers also valued breastfeeding, but the factor loadings were moderate in comparison to first-time mothers and formed the third factor rather than the first factor. The idea that first-time mothers place particularly high value on breastfeeding is not new. Other researchers such as Avery et al (1998) and Mazingo et al (2000) have reported that women who abandoned breastfeeding are often those who had planned to breastfeed for much longer. The high value that is generated through promotion of the health benefits related to breastfeeding is most often associated with the idea of utility value. Utility value however is only one aspect of value conceptualised by Jacobs and Eccles (2000). The subjective role of attainment value (the personal importance of doing well) and intrinsic value (the interest the individual has in the behaviour) is important to women's sustained behaviour. The National Institute for Health and Clinical Excellence (2005) recommend that women should not be introduced to the possibility of breastfeeding problems during their antenatal phase. This stance, although not explained in motivational terms, may act to protect the motivational effects of intrinsic and attainment value of breastfeeding. However, value alone is insufficient to sustain behaviour and so it is important to consider the role of expectancy to succeed.

Total expectancy for success revealed a very different picture to the high value that first-time mothers placed on breastfeeding. Item loadings within the factor 'expectancy for success', such as 'Overall I am no good at breastfeeding' and 'I have trouble figuring out whether breastfeeding is going well or not' revealed that first-time mothers suspected that they would not manage to

breastfeed successfully. Non-first-time mothers however reported a positive expectancy for success, which included an additional item, 'I feel I cannot use my judgement when breastfeeding'. The inclusion of this item in relation to expectancy for success in experienced mothers is very interesting in that it cross-loaded onto the expectancy for success factor in a negative way (-0.50), but in a positive way in relation to perceived midwife support (0.41). This suggests that experienced mothers whose expectancy for success is positive feel that current best practice does not permit them to use their judgement when breastfeeding.

Overall analysis revealed that both first-time and experienced mothers perceived midwife support to be inadequate. In fact the highest loadings were noted in relation to the perceived lack of support. As evidence continues to indicate that routine breastfeeding instruction falls short of women's expectations (Hong et al, 2003; Chezem et al, 2003; Hanss, 2004), the need for health professionals to meet women's breastfeeding instructional needs seems judicious. Offering advice, Ertem et al (2001) suggested that health professionals move away from breastfeeding troubleshooting and knowledge provision to focus on bolstering maternal confidence. Loiselle et al (2001) reported that women's perception of support did not meet the criteria of the supportive strategies that health professionals had put in place. Other researchers have called on health professionals to refrain from medicalising breastfeeding and adopt a more flexible woman-centred approach (Schmied et al, 2001). Almost ten years ago, Dykes and Williams (1999) challenged those providing professional instruction to consider their role in protecting women's confidence (expectancy to succeed) in breastfeeding.

Conclusion

Making a clear distinction between value and expectancy to succeed, the BMIMS provided an important consideration for those designing current breastfeeding instruction, namely that despite encouraging primigravida women to place a high value on breastfeeding, current breastfeeding instruction lacks the motivational power associated with balancing that value with a positive expectancy for success. Although it seems sufficient to say that maternal confidence and professional instructional support should go hand-in-hand, it seems evident that maternal confidence is most fragile and attrition highest when women lack expectancy for success and perceive a lack of relevant instruction. Even though these findings are not new but reiterate previous breastfeeding research, the development and application of the BMIMS has brought to focus the main barrier that midwives must overcome in their efforts to motivate women to continue breastfeeding, which is that successful breastfeeding instruction must be designed with an appreciation of the complex cognitive process that requires the optimal motivational balance between creating a more moderate value for breastfeeding and a greater sense of expectancy to succeed***.

Limitations of this study were related mainly to the restricted time-frame of the research study that limited the sample size. Additionally, construct validity requires

***The findings of this factor analysis informed the overall development of a motivationally-enhanced version of current best breastfeeding instruction.

replication studies in relation to the shortened version of the instrument (34 items), designed to measure first-time mothers' motivation to breastfeed. Therefore, further research is necessary to confirm the factor structure and determine if the BMIMS is reliable and valid when applied in different instructional environments.

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