Mothers' views of health problems in the twelve months after childbirth: A concept mapping study

Abstract

Aims: To identify the health problems that women feel require help and subsequent help-seeking behaviour during the twelve months period after childbirth.

Background: Many women experience physical and mental health problems after childbirth, but there is a gap in understanding how they perceive their health after childbirth. Studies suggest they are inhibited in expressing their needs and so seek informal rather than professional help for their health problems.

Design: A mixed-method concept mapping study.

Method: Two groups of Australian women were recruited via an online platform and purposive sampling (n=81) in 2017-2018. A first group created 83 brainstorm statements about post-childbirth health problems and help-seeking, and a second group sorted and rated the statements based on their perception of the prevalence of the issues and the help-seeking advice they would offer to others. Bradshaw`s Taxonomy of Needs was used to theoretically underpin the explanation of the results of women's felt need after childbirth.

Results: Multidimensional scaling resulted in six clusters of issues which were categorised into three domains: 'health issues and care', 'support', and 'fitness'. Despite being directly asked, about two-thirds of the women did not report experiencing any health problems.

Conclusion: Our findings showed women had a broader perception of healthcare needs which included support and fitness. There is a potential gap in services for women who do not have good social support.

Impact

Family and friends were a key source of help-seeking. Post-childbirth routine care was focused on infant care and limited to the first six weeks after childbirth. The content of current post-childbirth care must be reviewed.

Introduction

This paper addresses women's health problems occurring in the first twelve months after childbirth. Post-childbirth health problems are conditions attributed to childbirth resulting in a negative impact on the women`s wellbeing and functioning (Chou et al., 2016). These problems remain a challenge to define, interpret and measure (Hardee et al., 2012) and the prevalence of these general and specific health problems is insufficiently addressed and inadequately described in the literature (Haran et al., 2014), making them 'hidden' from sight (Fahey & Shenassa, 2013). Furthermore, women report not being encouraged to reveal their post-childbirth health concerns during 'traditional' post-childbirth care (Haran et al., 2014). The more common post-childbirth health problems such as haemorrhage, hypertension and mood disorders are well described in the literature and clinical practice, with established plans for treatment (WHO, 2015; Woolhouse et al., 2016). However, hidden post-childbirth health problems, such as backache or fatigue (McGovern et al., 2007; Rouhi et al., 2011; Schytt et al., 2005; Song et al., 2014), are not sufficiently considered in the traditional post-childbirth check-up (Cheng et al., 2006; Cheng & Li, 2008; Levitt et al., 2004). It can be argued that the traditional post-childbirth check-up fails to identify all the

health problems that women experience, creating potential long-term effects on their well-being.

Background

Post-childbirth health problems affect over 90% of women during the first year after childbirth (Wilkie et al., 2017). The effects of these problems on women's and infant's health are undeniable (Walker et al., 2015). Research shows there is a concerning lack of knowledge about post-childbirth health problems and what is 'normal' post-childbirth among health care providers, women and their families (Beake et al., 2010; Khalaf et al., 2009). Post-childbirth care often focuses on the infant`s needs rather than the mother's (Bell et al., 2016; Buurman & Lagro-Janssen, 2013). While we know most women need information about lactation or dealing with adjusting to a new situation during the first days of this period (Beake et al., 2010), there is little information about women`s needs during the rest of the twelve months post-childbirth period (Rouhi et al., 2019). Most research about post-childbirth problems focuses on the early post-childbirth period (Caetano et al., 2018; Kaitz, 2007) or more prevalent problems such as mental health problems (Fisher et al., 2012).

Our earlier systematic review showed there is a paucity of information related to help-seeking behaviours (an ability to seek formal or informal help) among women in this twelve month post-childbirth period (Rouhi et al., 2019). The existing research is focused on non-professional sources of help like family and friends (Cornally & McCarthy, 2011; Maher & Souter, 2014; Woolhouse et al., 2009) and is largely about mental health problems such as depression (Abrams et al., 2009; Bell et al., 2016; Goyal et al., 2015; Park et al., 2017; Sword

et al., 2008; Wittkowski et al., 2012), but help-seeking behaviour about other problems appears to have been ignored by women or neglected by healthcare providers.

The post-childbirth problems are compounded because many post-childbirth women are inhibited in expressing their needs (Maher & Souter, 2014) and when seeking help women's post-childbirth needs are not always adequately met (Cassiano et al., 2015). To explain the concept of health need among women, we applied Bradshaw's Taxonomy of Needs (Bradshaw, 1972). Bradshaw defined four types of need: felt, expressed, normative and comparative need.

Felt need is when clients feel they have a need but never disclose or act upon it. Limited health knowledge is one reason why people may have different perceptions and views about their needs and help-seeking. Expressed need is where people with felt need used services, though this can be influenced by the availability of services and any failure of policies to consider new services (Bradshaw, 1972). Normative need is need defined by experts (such as policymakers and health professionals) and usually results in services designed to care for people in society. Normative need can be affected by difficulties defining need and conflict among experts. Finally, comparative need is simply a comparison of the needs of people in different health or geographic areas (Bradshaw, 1972; Bradshaw, 1994; Carver et al., 2014).

While there are studies about the normative needs of women in the twelve months after childbirth (Agapidaki et al., 2014; Borglin et al., 2015; Brodribb et al., 2013; Chew-Graham et al., 2008; Widarsson et al., 2012), women in one study pointed out that healthcare providers ignored their felt need (Bailey, 2010). Considering this felt need gap, improved knowledge about post-childbirth health problems with a focus on identifying women's post-

childbirth felt needs and help-seeking behaviour up to twelve months after childbirth, is needed if we are to improve or redesign maternal health services.

Aims

This research investigated help-seeking behaviour among Australian women for their health problems in the twelve months after childbirth. The main objectives were to identify the health problems that women felt required help during the twelve months after childbirth and to identify their subsequent help-seeking behaviour.

Design

We used concept mapping, which is a useful form of structured conceptualisation for gaining consumer participants' perspective for research and service design (Trochim & Kane, 2005). Concept mapping was established by William Trochim of Cornell University, over two decades ago (Trochim & Linton, 1986) and has been used consistently for participatory health services research since.

This approach is an integrative mixed-method. It is qualitative in that it uses brainstorming from individuals for ideas, and group processes for unstructured sorting interpretation. Quantitative methods are then used for data analysis including multidimensional scaling and hierarchical cluster analysis (Trochim & McLinden, 2017). The Concept System® (CS Global MAX™) is a software program that can be used to collect or enter the concept mapping qualitative data, then uses "a non-metric multidimensional scaling algorithm" (Filiberto, 2008, p. 96) to perform structured conceptualisation. This method combines opinion polls and statistical procedures (Nabitz et al., 2005) and has demonstrated high validity and reliability in a pooled analysis (Rosa and Kane, 2012).

Concept Mapping has been employed in areas as diverse as health, social science and management (Burke et al., 2005; Nabitz et al., 2005). It is especially useful as a participatory method for answering ambiguous research questions where there are no clear conceptual frameworks, and when exploring people's views about a specific issue (Burke et al., 2005). It can be used with as few as 10 people or as many as 1000 (Kane & Trochim., 2009), though 8-200 has been applied among most studies, and sorting and rating stages usually involve fewer participants (Vaughn et al., 2017). Concept mapping helps to produce graphic illustrations of concepts (Kane. & Trochim., 2009).

Concept mapping methodology has been used for topics such as anxiety, depression, quality of care for chronic diseases (Trochim & Kane, 2005), and assessment of maternity services for disabled women influenced by domestic violence (Bradbury-Jones et al., 2015). One of the benefits of this methodology is the ability to use face-to-face and/or online sampling, and the analysis of data using the online software (Concept Systems. Inc, 2018).

Concept mapping is based on brainstorming of ideas by the target group, followed by some participants sorting and rating the brainstorming results, followed by multidimensional scaling and hierarchical cluster analysis. It has six key steps: (1) preparation, (2) generation, (3) structuring, (4) representation, (5) interpretation, and (6) utilization (Trochim & Kane, 2005).

Sample/Participants

Australian women were recruited for this study using the established concept mapping step one 'preparation' methods (Betsy & Carmen, 2007) in 2017-2018. In total, 81 women took part across the different stages, which is identified as a good number for internal validity with this study approach (Betsy & Carmen, 2007; Filiberto, 2008).

We created a study Facebook page called the Hababy Project and potential participants were alerted to the Facebook page through Facebook 'shares' by contacts of the chief investigator. Information about the project was also advertised by displaying flyers in Child Health and Parenting Services (CHAPS), and local hospitals. The flyer and Facebook shares directed individuals to the Hababy Project Facebook page, which provided a link to access the study`s data collection website. Recruitment criteria were women of reproductive age defined as 15-44 years (Cunningham et al., 2018, p. 3) within the first-year post-childbirth, who gave birth to a full-term infant, i.e. born after 37 weeks. The exclusions were multi-foetal gestation, i.e. involving twins or triplets. We recruited 66 women online for the brainstorming stage.

Women received an automatically generated username and password that gave them an anonymous registration. Once they logged onto the Concept System® project webpage, they read the participant information and provided consent before progressing into the data collection pages. Women provided their demographic characteristics (location, mother`s age, child's age, the method of childbirth, parity) and if this did not match the inclusion criteria, they were unable to submit further information.

Data collection

Data collection is step two 'generation' and step three 'structuring' of concept mapping. Women provided brainstorming statements in response to the focus prompt "Many women experience physical and/or mental health problems after the birth of their child. Which problems did you experience, and which actions did you take to get help to prevent or treat health problems?" This step was completely anonymous and the Concept System®software (CS Global MAX™) did not allow any tracking of participants for this task.

The researchers refined and selected the final statement set from the list of brainstormed statements (n=83) as per concept mapping protocol. Participants had provided 66 brainstormed statements, but some of the responses contained more than one health problem and these were split into two statements by researchers. We also deleted duplicate statements as per protocol. The final statement set was agreed by the researchers to be sufficiently broad and targeted to the focus of the project (Kane. & Trochim., 2009). Once 66 women had been recruited and completed brainstorming statements, over nine months (May 2017-March 2018), this section of the data collection was closed.

Structuring of statements

We continued to recruit online for a second group of women to rate and sort the statements; however, over four months only two people were recruited. We also failed to recruit for a rating and sorting workshop using the Facebook page and flyers in the local hospitals and CHAPS. Finally, we recruited a group of 15 women using a snowball sampling technique. The refined statement set, participant information sheet and consent form were mailed to 20 women with 15 returned. To compensate women for their time, we offered a $20 food shopping voucher. The participants were asked to sort the 83 statements, which had been printed individually onto 7x7 cm cards, into homogeneous categorisations in a way that made logic to them. "*In this activity, you will categorize the statements, according to your view of their meaning or theme".*

In the next step, women rated the statements on a scale of 1-5 by responding to the questions: '*how common do you think this issue is for new mothers?'* and '*how likely is it that you would recommend to another woman that they seek help for these issues?'* by ticking the appropriate box. These questions aimed to identify women's perception of the

prevalence of an issue and their help-seeking advice to others. The statements were printed on A4 paper with two five-point rating scales: 1= not common, 2=less common, 3= uncertain, 4= common, 5= more common and 1= not likely, 2= less likely, 3= neutral, 4= likely and 5= very likely.

The women then labelled each category and put their grouped statement cards into plastic bags, one for each category. After receiving the returned cards, the researcher entered the sorting and rating information into the Concept System software.

Ethical considerations

This study was approved by the Tasmanian Social Sciences Human Research Ethics Committee, H0016441, and 21st April 2017.

Data analysis

All data was run through the Concept System® computer algorithm to achieve a nonmetric multidimensional scaling (MDS). The resulting maps showed "the individual statements in two dimential (x,y) space" and grouped into clusters (Rosas & Kane, 2012, p. 237).

A small majority of the women had a normal vaginal delivery (51%), 75.1 % were multiparous, and an average child`s age 7.34m (SD= 4.49). In total 81 women participated in this study; 66 women completed brainstorming statements and a different group of 15 women sorted and rated the statements.

Validity and reliability

The validity and reliability of concept mapping have been evaluated and found to be consistently high in a pooled analysis (Rosas & Kane, 2012). Rosas and Kane (2012) analysed

69 concept mapping studies and found strong internal representational validity and reliability across sorting and rating components. Validity and reliability were consistent regardless of the numbers of participants, percentages of participant completion and modes of data collection. Concept mapping has been applied as a reliable and valid methodology across different contextual frameworks (Doty, 2016; Filiberto, 2008; Trehan, 2015) and is recognised as particularly useful for gathering information about consumers' views (Bedi & Alexander, 2009) which has created renewed interest in the method (Trochim and McClinden, 2017).

Results

The results are the 'representation' step in the concept mapping process where visual maps are produced from the MDS. Only one-third of the statements mentioned a health issue during the first year after childbirth despite this being a key part of the focus prompt. The remainder only provided information on help-seeking. The morbidities reported by women in the statements were: backache, depression, post-traumatic stress, tiredness, anxiety, constipation, loss of hair, wound infection, sleep problems, sexual problems, third-degree tears, mastitis, urinary infection, urinary incontinence, vaginal discharge, and one report of a red rash around mouth and chin.

Cluster map

The MDS resulted in 4 to 10 potential clusters, with each cluster representing a different conceptual field. The research team selected 6 clusters as the best fit for the data with cluster names selected from the names that participants gave during sorting or software suggestions.

We grouped cluster concepts into three domains (See Figure 1). The core concept of the first domain was 'health issues and care' and consisted of the clusters '6-week check-ups after childbirth', 'health professional support', and 'mental health consultation'. The second domain was 'support', containing the clusters 'social support' and 'support from family and friends'. The third domain was 'fitness' which contained only the fitness cluster.

The 'health professional support' cluster had the largest number of statements with 18, and the 'fitness' and 'mental health consultation' clusters had the least number of statements with 9.

A summary of each cluster is as follows.

Cluster1: Health professional support

This cluster includes morbidities which women shared with their healthcare providers. The common morbidities focused on pelvic issues such as wound infection, vaginal discharge, urinary tract infection, urinary incontinence, and sexual issues. The other physical health problems for which women sought help were backache, constipation, losing hair, skin issues, and mastitis. Women said that they sought help for these physical health problems from their chiropractor, GP, obstetrician and gynaecologist.

Cluster 2: Six weeks check-up after childbirth

In this cluster, breastfeeding issues were the strongest problem mentioned for the post-childbirth six-week check. Women took the routine check-up with their health care providers and highlighted that they wanted clear and appropriate information at this time related to post-childbirth problems.

Cluster 3: Mental health consultation

All nine statements in this cluster were composed of items mentioning mental health problems. Women who had mental health problems such as negative thoughts, depressed mood, and anxiety sought specialised help from healthcare professionals such as nurses, GPs, obstetricians and psychologists.

Cluster 4: Support from family and friends

This cluster focused on the interpersonal communication women adopt to share their problems and get support. Family and friends were the main sources of support for women.

Cluster 5: Social support

The statements in this cluster are related to women`s socialization with other mothers or outside the home in order to cope with concerns. Online information was identified as the source of support by some women. Statements such as "not rush back to work" or "get out of the house most days, committing to some weekly events" were highlighted as suggestions to take care of themselves.

Cluster 6: Fitness statements

This cluster included statements regarding body fitness and diet. Concerns about weight gained during pregnancy were prominent. Women mentioned some strategies to lose weight such as diet care, daily exercise and walking.

All statements created by the brainstorming process are provided in Table 1, grouped according to the MDS clusters and with the average ratings provided by participants for the scales related to 'how common' and 'how likely'.

Pattern match

We used pattern matching, a graphical and statistical analysis, to compare the two ratings of 'how likely' and 'how common' to provide visualisation of the degree of relationship (Trochim & McLinden, 2017). As a planning tool, pattern matches can point to elements that require attention if there is poor correlation between the two ratings. Pattern matching graphically represents a "ladder graph" containing two vertical axes of two ratings joined together by lines, with high rating scores situated closer to the top of the pattern match (Figure. 2).

The pattern matching showed that women agreed that the need for 'social support', 'support from family and friends' and 'fitness' were prevalent and would be highly recommended to the other women. Surprisingly, participants rated health professional consultations for mental health problems as less prevalent than the likelihood that they would recommend this form of help-seeking. There was a strong positive correlation coefficient (Pearson's r =0.89) between all the ratings.

Go-zones

To understand the priority of the statements rated by women, 'Go-zones', bivariate value plots, are used. All the statements were placed in one of four quadrants. Statements in the green quadrant were those rated above average by women as both more common and more likely. The mean rating for each zone were: Green, more common (X Axis) 4.27, more likely (Y Axis) 4.20); Yellow, more common (X Axis) 3.67, less likely (Y Axis) 3.67; orange, less common (X Axis) 3.07, more likely (Y Axis) 3.93; Grey, less common (X Axis) 2.93, less likely (Y Axis) 3.47 (Figure 3).

The statements in the green zone covered some physical problems like constipation, backache, stitches, sexual relationship problems, sleep issues, urine infection, lactation issues and mental issues. The green zone also contained statements about sharing problems with family and friends, making a connection with other mothers and local groups, using online platforms to chat, weight gain, and fitness.

The three highest-rated statements suggest that health professionals are not contacted as first resort: 'I use Google to look up minor concerns about my baby and speak to health professionals about major issues' (statement number 24), 'Sought help and support from friends and family' (statement number 33), 'My family provided mental and physical support through the very early days' (statement number 78).

Discussion

We applied concept mapping to obtain women's views on the health problems that require help (help-seeking behaviour). Despite the research question, women identified a much broader concept of health problems post-childbirth. We identified three key health and help-seeking domains: 'health issues and care', 'support from family and friends' and 'fitness', highlighting that morbidities are only a small portion of women`s concerns at this time. We flagged social and emotional and lifestyle support as key health concerns for which they seek help.

Women identified significant physical and mental health problems in the health issue and care domain. Participants did state the same morbidities reported by other studies during the first year after childbirth (Ansara et al., 2005; Glazener et al., 1995; Hardee et al., 2012; Maher & Souter, 2014; Van der Woude et al., 2015). However, in this study, when directly asked to report physical and/or mental health problems experienced after childbirth, only

one-third of respondents reported a morbidity. It is possible that this particular group of women did not have many physical and psychological problems after childbirth, although this is in contrast with the literature which suggests a high percentage (over 90%) of women experience at least one health problems after childbirth (Wilkie et al., 2017).

It is also possible that this issue is explained by a lack of 'felt' need by women through normalising problems. The literature supports this explanation as women and their families have been noted to ignore, normalise or minimize health problems after childbirth (Rouhi et al., 2019). Normalizing is also likely compounded by women's tendency to prioritize their infant`s needs (Bell et al., 2016; Buurman & Lagro-Janssen, 2013; Verbiest et al., 2018) instead of their own (Maher & Souter, 2014). Women often conceptualize post-childbirth problems as a normal part of childbirth and subsequently do not take any action to resolve them (2008; Chew-Graham et al., 2009; Goodman & Santangelo, 2011; Rudman & Waldenström, 2007; Scrandis, 2016). In such cases, women either did not have felt need or did not turn any felt need into expressed need.

The 'six week check-up' cluster was mostly focused on infant`s needs. Typical health services do not have any follow-up plan after the six-week check for the rest of the first year after childbirth (WHO, 2013). This could be a problem as post-childbirth women need different information depending on the timing of post-childbirth visits (Beake et al., 2010). During the first weeks post-childbirth, most women need information about lactation or dealing with settling down with a new situation (Beake et al., 2010), but there is a dearth of understanding about the information women need after this early post-childbirth period.

Despite the existing knowledge about the investigation of antenatal care in Australia (Brock et al., 2014) and a study that showed high satisfaction with antenatal care among

Australian women (Lucas et al., 2015), there is a lack of comprehensive knowledge about post-childbirth care in Australia. Many women spend this period of time with unmet needs and frustration in getting help (Woodward et al., 2016). Our findings suggest that women have a broader concept of healthcare needs post-childbirth encompassing social support. This could be a problem if there is a discrepancy between women's expectations and access to appropriate care. Our systematic review, for example, showed that the use of social support is not always positive for women needing post-childbirth healthcare (BLINDED FOR PEER REVIEW).

Our pattern matching showed all clusters apart from 'mental health consultation' had closely matched perceptions of the prevalence of an issue and likelihood of help-seeking advice, but women rated mental health consultations as less prevalent than their importance. This might be the recognition of the barriers for women in accessing mental health services such as accessibility, proximity, stigma (Bell et al., 2016), lack of knowledge about the symptoms (Sword et al., 2008), or cultural and religious issues (Wittkowski et al., 2012) and lack of healthcare professionals knowledge (Rouhi et al., 2019).

Pattern matching showed 'support from family and friends', 'social support' and 'fitness' were top-rated clusters by women. Other research identifies that social support and the need for information are key post-childbirth needs for women (Phang et al., 2015). For many women, 'social support', which is mostly provided by family and friends, is one of the best ways to both achieve their role as a mother and obtain necessary information about the post-childbirth period (Phang et al., 2015; Tammentie et al., 2004). The importance of support has been highlighted by other studies which show women rely more on support from trusted people than professional help (Abrams et al., 2009; Bell et al., 2016; Kaitz,

2007; Negron et al., 2013; Sword et al., 2008). This support may though be poorly informed or even lacking suggesting that some women are not getting their needs met.

Despite the barriers to physical activity for women after childbirth (Saligheh et al., 2016), 'fitness' was one of the concerns among our participants. During pregnancy and the post-childbirth period, women are prone to weight gain and weight retention (Nascimento et al., 2013). But while there are many practical guidelines for exercise during pregnancy (Farpour-Lambert et al., 2018), the post-childbirth period is overlooked (Evenson et al., 2014). Consistent with other studies, women in this study felt that getting information about exercise and getting fit after childbirth were important, but studies show that healthcare providers do not offer this information (Evenson et al., 2009; Ferrari et al., 2010).

Go-Zone maps can help policymakers to develop strategies and action planning to resolve post-childbirth issues (Kane & Trochim, 2009). The summary of the statements in the green zone is about both physical and mental issues and help-seeking behaviours such as sharing the problems with family and friends, making the connection with the other mothers and local groups, and using online platforms to chat. A systematic review by Haran et al. (2014) showed that there are comprehensive clinical guidelines for the care of new mothers, but they are specific to certain issues like depression or infant care. Additionally, they showed there is inconsistency about the role and content of post-childbirth visits among developed countries. For this reason, women can spend this period feeling pressured, with a lack of suitable information based on their individual needs (Negron et al., 2013). This potential gap in access to care may exacerbate any problems (EdalatiFard et al., 2016). To adapt to these needs, parents need information and suitable assistance to cope with their new life

situations (Rowe et al., 2013). A review of current post-childbirth care could address these issues.

Utilization of findings

This study provides information about women`s concepts of healthcare needs and help-seeking. These findings can be applied to enhance the quality of post-childbirth care during the first year after childbirth with the following recommendations.

1. Women need to be encouraged to talk about their well-being after childbirth. These findings suggests a need to refocus post-childbirth care to include the needs of women.

2. Healthcare professionals could include information about physical fitness for post-childbirth women.

3. Healthcare professionals must understand that women`s reliance on family and friends for social support could result in unmet needs if the support is lacking.

Limitations

The study aimed to gain women's perspective. By using online recruitment, we were able to access women nationwide. We had trouble recruiting women for more time-consuming sorting and rating activities, but others have reported similar difficulties recruiting mothers of young children due to lack of time from childcare responsibilities (Verbiest et al., 2018). Despite this, the sample size was consistent with concept mapping criteria (Rosas & Kane, 2012). It is also possible that our sample of women with relatively low felt need was not representative of the broader population.

Conclusion

This study gained a unique picture of women's views of physical and mental post-childbirth problems and help-seeking behaviours. Women have a much broader concept of post-childbirth problems than health professionals and policymakers and rely heavily on social support. Not all women have access to good social support suggesting a need to review the content and timing of post-childbirth care. Further research is needed to understand healthcare provider`s knowledge and practices in maternal post-childbirth health.
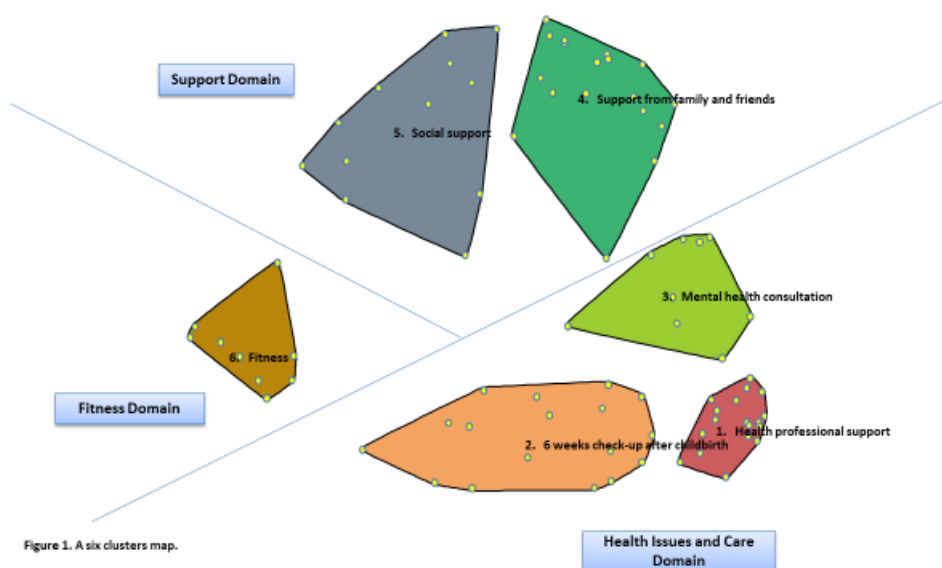
Conflicts of interest
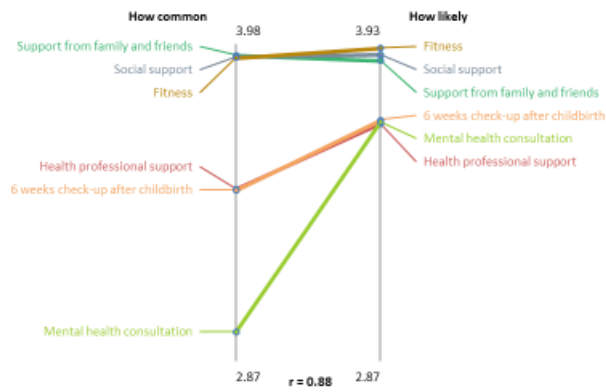
None declared.

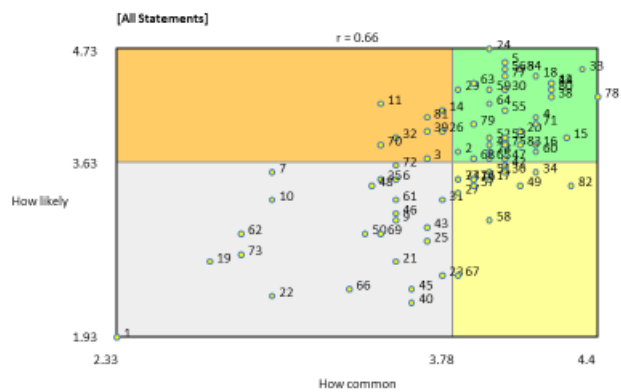Figure 1. A six clusters map.

Figure 2. Pattern Match

Figure3. Go Zone for all statements.

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