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Abstract

Aim: To report an analysis of the concept of postpartum sexual health.

Background: Postpartum sexual health is a minimally understood concept, most often framed within physical/biological dimensions or as a 'checklist' task in postpartum information provision. This has the potential to leave women unprepared to manage transient or normative sexual health changes after childbirth. For meaningful discussions, clarity and understanding of postpartum sexual health is required.

Design: A principle-based method of concept analysis.

Data sources: The databases of PubMed, CINAHL, Maternity and Infant Care, PsychInfo, Web of Science, EMBASE, SCOPUS and Social Science Index were systematically searched, from their earliest dates, using a combination of key terms, including; *'sexual health', 'sexual function', 'dyspareunia', 'sexuality', 'sexual desire', 'sexual dysfunction'*, *'postnatal',* and *'postpartum'*, resulting in a final included dataset of 91 studies.

Methods: Using the principle-based approach, postpartum sexual health was analysed under the four philosophical principles of epistemological, pragmatic, linguistic and logical.

Results: Philosophically, postpartum sexual health is underdeveloped as a concept. A precise theoretical definition remains elusive and, presently, postpartum sexual health cannot be separated theoretically from sexuality and sexual function. Identified antecedents include an instrument free birth, an intact perineum and avoidance of episiotomy. Attributes include sexual arousal, desire, orgasm, sexual satisfaction, and resumption of sexual intercourse. Outcomes are sexual satisfaction and a satisfying intimate relationship with one's partner.

Conclusion: Postpartum sexual health is conceptually immature with limited applicability in current midwifery practice.

Key words: postpartum, childbirth, puerperium, maternity care, nursing, midwifery, sexual health, sexual function, sexuality, concept analysis

Summary Statement

Why is this research needed?

- Many changes to postpartum sexual health are normative as parents adapt to their new roles as mothers and fathers, however, postpartum sexual health is minimally understood and most often appears within a physical/biological dimension or as a 'checklist' task in postpartum information provision.
- For meaningful discussions to take place, clarity and understanding of the concept of postpartum sexual health is required.

What are the key findings?

- Postpartum sexual health is a philosophically immature concept with limited applicability in current maternity care.
- A precise theoretical definition remains elusive and, presently, postpartum sexual health cannot be separated theoretically from sexuality and sexual function.
- Measurement tools for assessing and measuring postpartum sexual health, specifically, were not identified in this analysis and there is a need to develop, test and validate such tools.

How should the findings be used to influence policy/practice/research/education?

- Identified antecedents to postpartum sexual health have implications for maternity practice and include, an instrument free birth, an intact perineum and avoidance of episiotomy.
- Reliable information from well-designed, well-executed studies on postpartum sexual health from the perspectives of women and maternity care providers ought to guide clinical practice and are urgently needed.

Introduction

The intimate relationship of parents is multifaceted with the process of childbearing being one of the most complex events in a couple's relationship (von Sydow 1999). Many changes to postpartum sexual health are normative as parents adapt to their new roles as mothers and fathers. Sexual health has been defined by the World Health Organisation (WHO) as a complex biological and sociological concept that requires a positive and responsible approach to sexuality and sexual relationships (WHO 2006) and '*...is directly affected by a range of physical, psychological, cognitive, socio-cultural, religious, legal, political and economic factors*' (WHO 2010).

Background

The UK Department of Health has recently published a Framework for Improvement in Sexual Health in England (Department of Health 2013). The focus within this document, however, is on contraception, sexually transmitted disease, unwanted pregnancy, sexual violence and consent to sexual relationships. Postpartum sexual health is notably absent. Similarly, within the core midwifery and medical texts, postpartum sexual health receives scant mention (Fraser and Cooper 2009, Oats and Abraham 2010). Where included it is most often framed within contraception advice or as a 'checklist' task in postpartum information provision when

discharging women from the maternity service (Bick et al. 2002). This has the potential to leave women unprepared to manage transient or normative sexual health changes after childbirth. It is also conceivable that postpartum sexual health problems are going unrecognised, leaving couples anxious, uncertain and distressed, an issue of concern previously highlighted by women (Pastore et al. 2007, Woolhouse et al. 2012). Consequently, postpartum sexual health as a concept is poorly understood. For genuine discussion to take place there must firstly be a clear and precise understanding of the concept so that there is consistency in understanding, meaning and use.

To add clarity and understanding to the concept of postpartum sexual health, a concept analysis, using Penrod and Hupcey's (2005) principle-based approach, was performed. This approach was chosen as it provides a robust means to theoretically define a concept and determine the state of science surrounding the concept at a given point in time. Principle-based concept analysis uses scientific literature as data in order to understand the current use and meaning of the concept (Penrod and Hupcey 2005). This framework is non-static, whereby concept advancement is viewed as dynamic and evolving over time. Retrieved data is analysed according to four broad principles; that is, the epistemological, pragmatic, linguistic and logical principles. The degree to which the concept under investigation meets the criteria for each principle determines the level of advancement and maturity of the concept. The outcome of the analysis is an in-depth synthesis of the concept, based on the scientific literature, coupled with identifying gaps and inconsistencies, so that concept advancement can occur.

Data Sources

The databases of PubMed, CINAHL, Maternity and Infant Care, PsychInfo, Web of Science, EMBASE, SCOPUS and Social Science Index were systematically searched. No time restrictions were applied to ensure that key seminal work was captured and important evolutionary progression of the concept obtained. The following keywords were used to guide

the search: *'sexual health', 'sexual function', 'sexual behaviour', 'sexual problems', 'dyspareunia', 'sexual satisfaction', 'sexual activity', 'sexuality', 'sexual desire', 'sexual arousal'* and *'sexual dysfunction'*. As the population of interest is postpartum women, key words such as '*female', 'women', 'postnatal', 'after childbirth'* and *'postpartum'* were also added to the search, combining these with the 'sexual' string terms using the Boolean operand, 'AND'. Within string terms were combined using the operand 'OR' as appropriate. The search yielded 354 citations after removal of duplicates. Title, abstract and full text review resulted in the exclusion of 265 papers that did not focus on postpartum sexual health, rather were primarily concerned with contraception, family planning and sexually transmitted diseases. Secondary methods, such as review of reference lists, identified a further two papers for inclusion. The final dataset consisted of 91 papers addressing postpartum sexual health.

Results

Epistemological principle

The epistemological principle involves determining if the concept has been clearly defined and well differentiated from other concepts in the literature (Penrod and Hupcey 2005). Although the term postpartum sexual health is mentioned rarely in any of the included papers, the closely related terms of postpartum sexuality and postpartum sexual function are commonly described and are conceptually inferred to describe postpartum sexual health from the epistemological perspective. Postpartum sexuality is said to encompass many complex issues, ranging from the way one thinks about oneself as a sexual being (Woolhouse et al. 2012), to being viewed as an integral part of the personality of every human being (Pastore et al. 2007). Alternatively, Salim (2010) states that sexuality in the puerperium is a combination of biological, psychological and social factors, without actually defining these terms. Others describe postpartum sexuality as more behavioural, for example the urge for, interest in, or drive to seek out sexual objects or engage in sexual behaviour (Nezhad 2011). Behaviours such as sensuality (tenderness

between lovers, kissing, hugging and cuddling), touching of genitals and coitus are also said to embody sexuality (Ahlborg et al. 2005, Ahlborg and Strandmark 2006, Ahlborg 2008).

Postpartum sexual function as a component of postpartum sexual health is implied through sexual function outcomes that are repeatedly measured in the included studies, albeit presented and discussed as 'sexual dysfunction'. For example, Barrett et al. (2000) and Acele and Karacam (2011) relate pre-pregnancy sexual health problems with postpartum sexual health problems. While results are presented in terms of sexual dysfunction, they do, however, identify potential risk factors and antecedents of poor postpartum sexual health. For example, episiotomy (Baksu et al. 2007) and sutured perineal tears (Williams et al. 2007, Rathfisch et al. 2010) were directly correlated to poor postpartum sexual health. Many of the included studies used sexual functional measurement tools in describing sexual function. Doumouchtsis et al. (2011), for example, used the Abbreviated Sexual Function Questionnaire (ASFQ) to measure desire, arousal-sensation, arousal-lubrication and orgasm. Acele and Karacam (2011) utilised the Arizona Sexual Experience Scale (ASEX) developed by Soykan (2004) to measure sexual drive, arousal, vaginal lubrication, ability to reach orgasm and satisfaction with orgasm. Dean et al. (2008) used the Golombok Rust Inventory of Sexual Satisfaction (GRISS) (Rust and Golombok 1986) to measure desire, arousal, orgasm, satisfaction and pain on intercourse. Other measurable aspects of sexual function were frequency of sexual intercourse (Baksu et al. 2007, Pauls et al. 2008, Safarinejad et al. 2009, Chivers et al. 2011), and timing of resumption of sexual intercourse post birth (Safarinejad et al. 2009, Chivers et al. 2011). This use of diverse methods to describe sexual function highlights the challenge in clearly defining or clarifying the concept of postpartum sexual health. Compounding this was the results from included studies, which in the main, presented sexual function as dysfunction rather than function or sexual ill-health rather than sexual health. Additionally, the measurement tools, while designed to measure sexual health, were not designed purposively for use in postpartum women, an inherent drawback when attempting to understand postpartum sexual health specifically. The tools take a narrow view of sexual function, tending to focus on the mechanics

of penetrative vaginal sex with heterosexual married women, and premised on an assumption that sexual activity has resumed.

Research from the qualitative paradigm, however, has enabled a broader conceptualisation of the concept as these studies examined the concept from a more embodied approach capturing women's perspective and experiences. The importance of women's perception of their body image and its relationship to their sexual health emerged within a number of studies (Olsson et al. 2005, Trutnovsky et al. 2006, Woolhouse et al. 2012). Social dimensions, such as, adapting to the new role of parent, changing lifestyles associated with moving from income earner to carer, and experiencing fatigue associated with caring for a baby has been documented as impacting on the intimate relationship, and as such sexual health (Olsson et al. 2005, Trutnovsky et al. 2006, Woolhouse et al. 2012). The impact of psychological dimensions on postpartum sexual health also emerged in the literature; fear and worry regarding resuming sexual activity, fear of dyspareunia and worry over the baby's well-being were identified by women. Elements related to the dyadic nature of intimate relationship are also made visible. Women have reported that their postpartum sexual desire was most strongly related to their partners influence, that is, how close or intimate they felt towards their partner and their perception of their partner's level of interest in being sexual (von Sydow 2002, Hipp et al. 2012). Other relationship dimensions that influence postpartum sexual health included the amount of support a couple gave each other emotionally, such as talking about worries, and practically, such as with aspects of childcare and household chores (DeJudicibus and McCabe 2002, Pastore et al. 2007).

In summary, the concept of postpartum sexual health, from an epistemological perspective is superficially explored in the included studies with emphasis, in the main, on the physical/biological dimension (arousal, lubrication, orgasm, dyspareunia), assessed primarily through the use of formal measurement scales. The social (adapting to parenthood, changed roles), psychological (perception of body image, desire, fear, worry and anxiety), relational

(emotional and practical support, perception of sexual desire in partner and changed roles) and the pleasure and health dimensions of postpartum sexual health are currently underdeveloped.

Pragmatic principle

The pragmatic principle is concerned with the application and usefulness of a concept (Penrod and Hupcey 2005), and, in the current analysis, in describing postpartum sexual health as encountered in maternity practice. Analysis of the data revealed that postpartum sexual health is not easily recognised by health professionals or women in clinical practice, an unexpected finding considering the surge in publications, as evidenced by the dates of publication of the included studies, on women's postpartum sexual health in the past 15 years. Barrett et al. (2000) identified at three and six months after birth that 83% and 64% of women, respectively, had at least one indicator of sexual health problems, from a sexual functional perspective, yet just 15% of these reported discussing this with a health professional at 6 months postpartum. Women, in a study exploring perceptions of their sexual health after birth, explicitly identified an absence of advice and reassurance from their midwife regarding sexual health (Olsson et al. 2005). Similarly, midwives felt that postpartum sexual health was an important issue that ought to be addressed prior to women being discharged home following birth, but many felt challenged to incorporate it in their care provision in a real way. Time restrictions, a task orientated approach to postnatal care and a professional lack of knowledge on sexual health matters restricted the support and advise they could offer women (Olsson et al. 2011).

Postpartum sexual health is absent from midwifery curricula and neglected in the core midwifery text books (Fraser and Cooper 2009). It is overlooked by the National Institute for Health and Care Excellence (NICE) in their Postnatal Care Clinical Guideline (NICE 2006) and in their Postnatal Care Quality Statement (NICE 2013). Several studies included in this analysis make token recommendation for a postnatal consultation on the potential for change to sexual health after birth (LaMarre et al. 2003, Williams et al. 2007, Trutnovsky et al. 2006, Rathfisch et al. 2010, Citak et al. 2010, Marsh et al. 2011, Palm et al. 2013). However, they do not indicate the optimal timing or content of the consultation, whom is best placed to facilitate the discussion

and with whom should the discussion be held, that is, with the woman only or with a woman and her partner. Neither do these recommendations specify what actions midwives should take in developing competence in leading these consultations, in providing sexual health education, and in advising women on what evidence based actions to take if sexual health problems persist. Acknowledging these lack of recommendations, some meaningful application of the concept to clinical practice was identified in the dataset For example, early and individualised (that is, tailoring the information to the woman's specific circumstances) education on possible changes to sexual health, in so much as consultations take place prior to discharge from maternity services, was highlighted (Rogers et al. 2009, Priddis et al. 2013). This indicates that perhaps some thought is being given to the applicability of postpartum sexual health to clinical practice, but, as yet, this consideration is minimal.

The over-reliance on measurement tools for determining postpartum sexual health in clinical practice is significant. Sixty-four of the 91 papers included in this analysis used some form of measurement tool or scale, for example, the Female Sexual Function Index (FSFI), the Abbreviated Sexual Function Questionnaire (ASFQ) and the Arizona Sexual Experience Scale (ASEX), to name a few. While these tools indicate an application of postpartum sexual health as a concept of interest to practice, a difficulty resides in the usefulness of these tools. The tools, in the main, place emphasis on measuring physical/biological functioning outcomes. Furthermore, many studies lack justification for their choice of outcomes measures (Moel et al. 2010, Rathfisch et al. 2010, Marsh et al. 2011), use diverse timeframes for assessing sexual health, for example, from three days (Chang et al. 2010) to six years (Baud et al. 2011), and focus on heterosexual penetrative vaginal sex (Barrett et al. 2000, Bertozzi et al. 2010, Hipp et al. 2012). Collectively, these elements negatively impact on the useful application of the concept in practice. The absence of other dimensional characteristics of postpartum sexual health such as social and relational dimensions, in addition to the lack of dialogue on women's motives for participating in sexual activity after birth, imply pragmatic immaturity of the concept of postpartum sexual health.

Linguistic principle

The linguistic principle involves analysing whether consistency in use and meaning of the concept are maintained. This includes an analysis of whether the concept fits the context within which it is being linguistically used (Penrod and Hupcey 2005).

Inconsistencies in linguistic use are evident as the term postpartum sexual health was often used interchangeably with postpartum sexuality (Hyde et al. 1996, von Sydow 1999, Barrett et al. 2000, DeJudicibus and McCabe 2002, Rowland et al. 2005, Trutnovsky et al. 2006, Pastore et al. 2007, Salim et al. 2010, Shirvani et al. 2010, Hipp et al. 2012, Woolhouse et al. 2012) and postpartum sexual function (Baksu et al. 2007, Pauls et al. 2008, Klein et al. 2009, Safarinejad et al. 2009, Chivers et al. 2011, Citak et al. 2010, Baud et al. 2011, Hosseini et al. 2012). This is further exacerbated by a lack of definitions of these terms and the multiplicity of issues addressed within each term in the literature. For example, both Hipp et al. (2012) and Shirvani et al. (2010) equate sexuality with sexual desire. Sexual satisfaction (Rowland et al. 2005), the importance of sexual intercourse, tenderness and satisfaction with sexual life are also features embedded within sexuality (Trutnovsky et al. 2006). An examination of sexual desire also embodies the term postpartum sexual health (Acele and Karacam 2011, Chang et al. 2011, Hosseini et al, 2012), as do explorations of sexual intercourse resumption post-birth (McDonald and Brown 2013) and the importance of tenderness among couples (Ahlborg and Strandmark 2001, Ahlborg et al. 2005).

A similar observation is made when examining the use of the term sexual function. Many studies, aiming to explore postpartum sexual function, measure sexual arousal, desire, vaginal lubrication, satisfaction, orgasm and dyspareunia (Baksu et al. 2007, Pauls et al. 2008, Klein et al. 2009, Safarinejad et al. 2009, Citak et al. 2010, Chivers et al. 2011, Hosseini et al. 2012). Timing of resumption of sexual intercourse post-birth, the frequency of sexual activity (Signorello et al. 2001, van Brummen et al. 2006, Gungor et al. 2007, Rogers et al. 2009, Marsh et al. 2011) and the influence of fatigue on sexual activity (Glazener 1997, Rogers et al. 2009) are also said to encompass postpartum sexual function. These measures are common to

those addressed by Barrett et al. (2000) and Morof et al. (2003) who use the language of postpartum sexual health. This results in reasonably concluding that, while sexual function may be the key term used within the studies, it is aspects of postpartum sexual health that are being investigated.

In researching postpartum sexual health significant challenges relating to the length of time after birth when women are asked about their sexual health experiences are apparent. The postpartum period traditionally extends to six weeks after the birth of the baby, frequently coinciding with the time when women are discharged from the maternity service (Bick et al. 2002). In examining postpartum sexual health, a timeframe of six weeks post-birth is considerably too short, especially considering that over 60% of women have not resumed any form of sexual activity by this time (Barrett et al. 2000, Barrett et al. 2005, McDonald and Brown 2013). The most commonly used timeframe within the studies is three months (Labrecque et al. 2000, Rogers et al. 2009, Rathfisch et al. 2010, Marsh et al. 2011) which is more advantageous as the majority of women (86%) will have resumed some form of sexual activity by then (McDonald and Brown 2013). Potential disadvantages for a three month timeframe, however, include an 'only just' resumption of sexual activity and sexual intercourse and an insufficient timeframe for adaptation to change. For example, perception of body image may be negative as 'baby weight' often persists well beyond three months and adapting to new parenting roles is at an early stage. Using a six (Trutnovsky et al. 2006, Baksu et al. 2007, Pauls et al. 2008) or 12 month timeframe (Williams et al. 2007, Bertozzi et al. 2010, Bertozzi et al. 2011) could eliminate some of these potential challenges.

The more questionable times reported are three days (Chang et al. 2010), 14 days (Connolly et al. 2005), 2.5 -3.5 years (Woolhouse et al. 2012) and six years (Baud et al. 2011) postpartum. The very early timeframes give women little or no time to physically and emotionally recover from the birth. The longer timeframes, alternatively, do not allow for the potential influence of other factors such as additional births or general health issues, thus making findings more difficult to interpret.

The concept of postpartum sexual health may be considered partially linguistically developed, albeit, mainly when allowing for consistency in implied meaning with the use of the terms of sexuality, sexual function and sexual health.

Logical principle

The logical principle investigates whether the concept can hold its boundaries when theoretically integrated with related concepts (Penrod and Hupcey 2005). Analysis of these data has revealed that conceptual boundaries for postpartum sexual health, sexuality and sexual function are inconsistent and blurred. Uncertainty, due to the constant interplay between these terms and postpartum sexual health throughout, making it impossible to separate these concepts when attempting to encapsulate the concept of postpartum sexual health. This is exacerbated further by a discernible lack of theoretical definitions and by the variety of sexual health outcomes measured in the data.

Other concepts, which have featured in the data, albeit less commonly, include sexual satisfaction, intimacy, sexual relationships, sexual problems, sexual enjoyment and sexual activity. These are components of postpartum sexual health rather than theoretically integrated concepts. Sexual satisfaction is frequently measured in the data as an indicator of sexual health (Dean et al. 2008, Acele and Karacam 2011, Baud et al. 2011, Hosseini et al. 2012). Intimacy has been discussed in terms of the intimate relationship and how it can impact on sexual health, for example, discordance in sexual desire between partners (Pastore et al. 2007). Barrett et al. (2000) claim to investigate sexual health yet focus and report on dysfunctions. Sexual activity in terms of frequency of sexual intercourse (Rathfisch et al. 2010, Chivers et al. 2011), type of sexual activities and tenderness have all been included as aspects of postpartum sexual health (von Sydow et al. 2001, von Sydow 2002, Ahlborg et al. 2005). This lack of clear conceptual boundaries between postpartum sexual health, sexuality and sexual function complicates the development of a theoretical definition. Whether postpartum sexual health can hold its own as a single theoretical concept is questionable and, presently, it must be concluded that postpartum sexual health is not logically mature.

Conceptual components

The concept analysis reveals a lack of a precise definition of postpartum sexual health from the epistemological perspective. Linguistically, inconsistencies abound, and logically the concept blurs with the concepts of sexuality and sexual function. Pragmatically there is evidence of some potential utility in midwifery practice; however, presently this is limited with a focus on the objective measurement of the physical/biological. Despite this conceptual immaturity, antecedents, attributes and outcomes of postpartum sexual health are identifiable.

Antecedents

Use of 'health' in postpartum sexual health imbues salutogenesis with a move towards well-being and free from illness. Antecedents to postpartum sexual health must, therefore, consist of factors that contribute to being a sexually healthy person after birth. The scientific literature identifies factors, albeit for heterosexual women, that increase the likelihood of being sexually healthy after birth as an instrument free birth (Thompson et al. 2002, Buhling et al. 2006, Bertozzi et al. 2010), an intact perineum (Williams et al. 2007, McDonald and Brown 2013), avoidance of an episiotomy (Rathfisch et al. 2010) and being free of a 3rd or 4th degree perineal tear (Marsh et al. 2011, Priddis et al. 2013). There is some inference that caesarean section is protective of sexual health, however, compared to vaginal birth, this safeguard was short-term (up to three months) and was non-existent at 12 months post birth (Barrett et al. 2005, Klein et al. 2009).

A positive personal perception of one's body image was associated with increased sexual desire (Pastore et al. 2007), sexual activity initiation and intimacy satisfaction (Olsson et al. 2005, Mickelson and Joseph 2012). It has been argued that breastfeeding could compromise sexual health, as breastfeeding women have reported experiencing vaginal dryness, dyspareunia, increased nipple sensitivity, leaking milk and decreased arousal as a result of low postpartum oestrogen levels (Connolly et al. 2005). An absence of fears and anxieties and being in a supportive relationship where the couple communicate effectively about their sexual

desires and personal needs are also considered factors that contribute to postpartum sexual health (Ahlborg et al. 2005, Olsson et al. 2005, Pastore et al. 2007)

Attributes

Several attributes to postpartum sexual health were identified in the analysis. The tools and scales used to measure sexual health focused on physical and, to a lesser extent, psychological sexual health dimensions. In this sense, sexual arousal, sexual desire, vaginal lubrication, orgasm, sexual satisfaction and the absence of dyspareunia, are considered attributes of postpartum sexual health (Dean et al. 2008, Baksu et al. 2007, Pauls et al. 2008, Klein et al. 2009, Safarinejad et al. 2009, Citak et al. 2010, Chivers et al. 2011, Doumouchtsis et al. 2011, Hosseini et al. 2012). Resuming some form of sexual activity post birth also features as a characteristic of postpartum sexual health (Safarinejad et al. 2009, Chivers et al. 2011), with the majority of women (83%) having done so by 12 weeks postpartum (McDonald and Brown 2013). Frequency of sexual intercourse was similarly identified as a feature of postpartum sexual health (Baksu et al. 2007, Pauls et al. 2008, Safarinejad et al. 2009, Chivers et al. 2011), although levels of frequency, as determinants of what would be considered 'good' sexual health, were not described in any of the included studies. Tenderness between lovers; kissing, hugging and cuddling were also evident as attributes of postpartum sexual health (Ahlborg et al. 2000, Ahlborg et al. 2005, Ahlborg and Strandmark 2006).

Outcomes

Outcomes of postpartum sexual health include sexual satisfaction (Dean et al. 2008, Acele and Karacam 2011, Hosseini et al. 2012) and a satisfying intimate relationship with one's partner (Ahlborg et al. 2005, Ahlborg and Strandmark 2006, Pastore et al. 2007, Hipp et al. 2012). Positive aspects of an intimate relationship go beyond the physical dimensions of sexual health, but include outcomes such as working well as a couple and sharing parenting and household responsibilities (Olsson et al. 2005, Hipp et al. 2012, Woolhouse et al. 2012). Furthermore, 'good' postpartum sexual health impacts positively on the intimate relationship,

and, in turn positively effects how parents adapt to parenthood and their new roles as care-givers (Olsson et al. 2005, Woolhouse et al. 2012).

A positive perception of one's body image, identified as an antecedent to postpartum sexual health, also emerged as an outcome of postpartum sexual health. Pauls et al. (2008), suggested that women who had postpartum sexual health problems or had low sexual function scores also experienced less satisfaction with their body image. Both women and men identified how a woman's perception of her body image affected their sexual health as a couple for up to 12 months after birth (Pastore et al. 2007, Mickelson and Joseph 2012), implying postpartum sexual health consequently leads to feelings of confidence with one's body and self.

Theoretical definition

Postpartum sexual health is too closely intertwined with the concepts of sexuality and sexual function to enable determination of a stand-alone theoretical definition. The concept analysis, however, has enabled a greater understanding of the concept. In keeping with Penrod and Hupcey's (2005a) aim of concept advancement, this analysis revealed the multi-dimensional nature of postpartum sexual health which should be accounted for in future discussions and in research on postpartum sexual health.

Discussion

Postpartum sexual health has been contemplated since the 1960's when Master and Johnson included postpartum women in their work on the Human Sexual Response Cycle (Masters and Johnson 1966). From the 1990's, however, an increased interest in women's sexual health after birth and the emergence of feminist literature on the subject has opened the debate on what is considered 'normal' postpartum sexual health and whether it is measurable. In this paper, the author's present the findings of a principle-based concept analysis to gain conceptual clarity, understanding and meaning in use of postpartum sexual health.

The heavy reliance on measurement tools not specifically developed for measuring postpartum sexual health and for measuring sexual dysfunction, disenabling an embodied viewpoint of postpartum sexual health to emerge, results in epistemological conceptual immaturity with a precise definition of postpartum sexual health remaining elusive. Data from the narrative paradigm added depth to this analysis by highlighting that postpartum sexual health encompasses more than just physical dimensions, rather, social and relational aspects are additionally fundamental to the concept's understandings.

The surge of interest in sexual health after birth since the 2000's, as evidenced from the dates of publication of the included studies, might lead one to believe that postpartum sexual health would be pragmatically well developed. This, however, was not demonstrated by the analysis. Contrastingly, little effort to apply the findings of research to maternity practice was found, and both women and midwives identified this. Unfortunately there is limited evidence from midwives' perspectives on how they incorporate postpartum sexual health education into their practice with evidence of their knowledge and competence in this area of practice lacking.

When addressing the linguistic principle it was necessary to rely heavily on implied meaning, particularly the implied meaning attached to postpartum sexual health, sexuality and sexual function. Data in this analysis most frequently used the language of sexuality and sexual function, and through examination and interpretation, it emerged that the three terms were used interchangeably with shared meanings. This led the authors to consider that logically postpartum sexual health cannot, presently, be theoretically separated from sexuality and sexual function.

Limitations

While this paper presents the first analysis of the concept of postpartum sexual health, that the authors are aware of, the analysis is complicated by a hetero-normative bias in the studies and the over-emphasis on objective sexual health functioning measurement tools, not specifically designed for assessing postpartum sexual health. This potentially reduces the strength of the

findings from these studies, and the contribution they make to the analysis, as there is uncertainty as to the reliability and validity of these tools in a population of postpartum women. A further limitation of this analysis is the inconsistence and interchangeable use of terms across the scientific literature, for example, sexuality, sexual health and sexual functioning. While the implied meanings were often very obvious on reading the papers, arguably the validity of the analysis might be potentially threatened on the basis of implied rather than clear meaning.

Conclusion

Postpartum sexual health is a philosophically immature concept with limited applicability in current midwifery practice. Reliable information from well-designed, well executed studies on postpartum sexual health ought to be used to guide clinical practice. This in turn will help dispel myths on what is normal and abnormal, reduce feelings of anxiety and guilt about resuming sexual activity and will enable health professionals to confidently tailor information to women's individual circumstances. Further research exploring women's perceptions of postpartum sexual health from dimensions other than physical/biological is urgently required. There is a noticeable absence of information/evidence from the perspective of lesbian women. Research in this area, specific to these women is also recommended to gain understandings of postpartum sexual health from the perspective of same-sex couples, to ascertain similarities/differences to that of heterosexual couples and to highlight optimal clinical care pathways in this important area of postpartum health. Measurement tools for specifically assessing and measuring postpartum sexual health were not identified in this analysis and there is a need to develop, test and validate such a tool. Finally, there is limited evidence on the topic from the perspective of midwife care providers, and of that which was identified, midwives have apparent limited knowledge in the area of postpartum sexual health and engage minimally in discussions with women on this topic in the postpartum period. This indicates an urgent need for education in this area, including curriculum considerations at undergraduate and

postgraduate level, so that greater clinical understanding and appreciation for this important aspect of maternity care can be assured.

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