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Culture, bathing and hydrotherapy in labor: An exploratory descriptive pilot study

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Abstract

Objective: Though bathing (hydrotherapy) is widely used during labor to decrease anxiety and pain and to promote relaxation, the influence of cultural beliefs about bathing by parturients is virtually unknown. This pilot study explored pregnant women's experiences of bathing, bathing in labor, and cultural beliefs about bathing.

Design: An exploratory, descriptive design.

Setting: Low risk obstetrical clinics.

Participants: Healthy Hispanic, Black, White, American-Indian and Asian women ($N = 41$) at > 37 weeks gestation.

Methods: During a routine prenatal visit women responded to a brief openended questionnaire on the use of bathing. Data was captured using a modified ethnographic method involving observation and note taking with thematic analysis and quantification of percent response rates.

Findings: Forty-six percent ($N = 41$) of women used bathing for purposes other than hygiene but only 4.9% ($N = 41$) of these women bathed during a previous labor. The women described bathing as relaxing, easing, calming, and efficacious for relief of menstrual cramps and labor contractions. Ten percent of women reported cultural beliefs about bathing.

Conclusions: Women who bathe, report relief of anxiety, menstrual and labor pain and promotion of mental and physical relaxation. The findings do not support the view that bathing is associated with identifiable cultural beliefs; rather, they suggest that bathing is a self-care measure used by women. This practice is likely transmitted from generation to generation by female elders through the oral tradition. Assumptions that race or ethnicity precludes the use of bathing may be faulty. Cautionary instructions should be given to pregnant women who are < 37 completed weeks

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of gestation, to avoid bathing for relief of cramping or contractions and to seek immediate health care evaluation. Study of culturally intact groups may uncover additional themes related to bathing in labor and as a self-care measure for dysmenorrhea.

Keywords

Culture; Dysmenorrhea; Hydrotherapy; Pain; Parturition; Immersion

Bathing in labor (hydrotherapy) is used across the world (Benfield, 2002) to promote relaxation and decrease parturient anxiety (Benfield et al., 2001; Benfield et al., 2010) and pain (Benfield et al., 2001; Cammu et al., 1994; Eldor et al., 1992; Lenstrup et al., 1987; Kisa Karakaya et al. 2016). Articles published in the United States, Canada, England, Australia, New Zealand, Sweden, Denmark, France, Belgium, Germany, Poland, Iran, Israel and Turkey attest to the extent of its use (Aird et al., 1997; Benfield et al., 2010; Busine & Guerin, 1987; Cammu et al., 1994; Chaichian et al., 2009; Cluett et al., 2004; Cooper et al., 2017; Eckert et al., 2001; Eldor et al., 1992; Eriksson et al., 1996; Gradert et al., 1987; Lenstrup et al., 1987; Maude & Foureur, 2007; McCandlish & Renfrew, 1993; Mesroglu et al., 1987; Moneta et al., 2001; Odent, 1983; Ohlsson et al., 2001; Robertson et al., 1998; Kisa Karakaya et al. 2016; Rush et al., 1996; Schorn et al., 1993; Waldenstrom & Nilsson, 1992; Vanderlaan, 2017). Moreover, the American-College of Nurse-Midwives (2017) and the American College of Obstetricians and Gynecologists (2016) recently published practice guidelines for the use of immersion/bathing during labor and birth. The healing properties of bathing continue to be of interest (Stanhope et al., 2018). However, though its use is widespread and current, the influences of cultural beliefs about bathing by parturients are virtually unknown and are not addressed in these studies.

Rather, this research and anecdotal literature focuses on the effects of bathing on anxiety and pain, analgesia use, length of labor and incidence of infection. It should be noted that bathing parturients are usually immersed in warm water to the chest. For a review of bathing (hydrotherapy) in labor including parameters for the intervention, see Benfield, (2002).

For the purposes of this study, culture is defined as “tradition and custom” (Williamson, & Harrison 2010 p.764). We hypothesized that cultural beliefs might influence the use of and purpose for bathing in non-pregnant, pregnant and laboring women. Our aim is to develop understanding of bathing as a phenomenon by representing the practices of bathing women through their words and perspectives (Elliott et al., 1999).

Knowledge about culture and bathing in pregnancy and parturition is scant. The literature has focused primarily on the concepts of hot and cold (Nichter, 1987) during the postpartum period (Elter et al., 2016; Kaewsarn et al., 2003; Wadd, 1983) or on particular conditions such as edema (Mabogunje, 1990) or additives such as aromatic *Nat* leaves to ward off evil spirits (Elter et al., 2016). Only rarely have specific details been provided about bathing practices. In Sri Lanka, for example, a full bath (nanawa) cools the body and mind while a body washing (anga sodanawa) is for cleansing purposes. The type, amount and force of water contacting the body, especially the head, are critical to maintain a mental-physical balance. Because pregnancy is viewed as a state of overheating with increased vulnerability to hot and cold influences, bathing is more frequent in Sri Lanka (Nichter, 1987). It is

unknown whether such traditional practices or cultural beliefs about bathing are found in a racially and ethnically diverse, bio-medically oriented society such as the United States. Therefore, this pilot study explored pregnant women's experiences of bathing, bathing in labor, and cultural beliefs about bathing.

Methods

Design

A descriptive design was selected for the study using a modified ethnographic method involving observation and note taking (Sandelowski, 2000).

Setting and sample

Women residing in a rural community in the Southeastern United States were recruited from the low risk obstetrical clinics at the county health department and the university's school of medicine and from two private obstetrical practices. A university Institutional Review Board approved the study. In each setting, women received care from physicians and nurse-midwives.

Potential participants were identified by nurses and obstetrical care providers. Study inclusion criteria were age 17 through 40, with a singleton pregnancy, and at low risk for obstetrical complications. A contemporaneous study measuring psychophysiological variables before and during bathing in early labor is described by Benfield et al., (2010) along with additional inclusion criteria necessitated by the intervention. A common consent was used for both studies. No incentive was provided for completing the bathing questionnaire or the Designation of Ethnicity and Race Form. At 37 weeks gestation, women who met the study criteria for both studies were approached to obtain informed consent and enrolled.

During a 14-month period, over 1000 charts were reviewed by the first author and approximately 135 women met the inclusion criteria. All were approached to obtain informed consent during a scheduled prenatal visit, and 41 consented. Consent was primarily refused because women did not wish to participate in physiological data collection in the bathing intervention study. Of those women who consented, eleven completed the physiological data collection during labor (Benfield et al., 2010).

Instrument

Three primary questions were asked of each participant, "Do you use bathing for purposes other than getting clean?" "Have you used bathing in labor with a previous pregnancy?" "Are there factors in your cultural beliefs about bathing?" If the answer to any of the questions was "yes", participants were asked the following open-ended questions to elicit further information. "For what other purposes do you bathe?" "Tell me about your experience with bathing in labor: how did bathing in labor affect your pain?" "How did bathing in labor affect your anxiety?" "How did bathing in labor affect your relaxation?" "Describe your cultural beliefs about bathing."

Data collection procedure

The questions on the instrument were read to the participant by the data collector question by question. If the response was “no”, the data collector proceeded to the next question. If the answer was “yes” each open-ended questions was asked sequentially. Immediately following each question, the subject’s verbatim response was written directly on the questionnaire and then was read aloud by the data collector to the participant for clarification. Administration of the questionnaire and the Designation of Ethnicity and Race Form took approximately 5–10 min.

An interpreter was present for all Spanish-speaking individuals and was instructed to interpret the language of the data collector and the subject’s responses. The translated Spanish responses were recorded in English by the data collector.

Care was taken by data collectors not to “lead” the subject in a response or show any positive or negative facial or verbal expressions to any answer. At the conclusion of the questionnaire, the participant was asked, “Do you have any questions? “Is there anything else you would like to tell me? ” All participants answered “No”.

Several times a puzzled look on the face of a participant was observed by the data collector. For clarification, the question was repeated and then an immediate answer was usually forthcoming from the participant. In three instances, however, the participant continued to look puzzled by the question about cultural beliefs, even when it was repeated. To clarify, the data collector noted special foods which people eat only on holidays or which they avoid as a result of some important life event such as marriage or childbirth. This explanation seemed to clarify the question for participants, who then proceeded to answer the question without hesitation.

All data collectors had completed education in the protection of human subjects. To ensure interrater reliability, two Research Assistants (RAs) observed the first author consenting and collecting data on 2 participants, and then she observed each RA consenting and collecting data on 1 subject.

Designation of Ethnicity and Race was collected using NIH criteria. The participant was instructed to read the form and check two boxes, one for ethnicity and one for race. If she was Spanish speaking, the form was read to her in Spanish by the interpreter. The interpreter then pointed at the response box that the participant indicated, and the data collector then checked the corresponding box.

The first section of the form asked, “Do you consider yourself to be Hispanic or Latino?” In response, the participant was instructed to check one of two boxes, either Hispanic or Latino or Not Hispanic or Latino. The second section of the form asked, “What race do you consider yourself to be? Select one of the following.” The choices were American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, or White. A definition accompanied each ethnic and racial choice. An additional option, “Check here if you do not wish to provide some or all of the above information” was

read. No participant chose this option. This tool did not differentiate ethnicity by country of origin or deal with socio-economic factors (Dein, 2006; Drevdahl et al., 2006).

Analysis

The content was analyzed using both qualitative and quantitative methodologies. Responses to the “yes” or “no” questions were quantified into percent response rates. The qualitative content was analyzed thematically by identifying; tallying and ranking the most frequently used descriptors to answer the question, “For what other purposes do you bathe?” These words included, “relax” or “relaxation”, “ease”, “cramps” or “cramping” and “calmed”. Table 1. provides raw data to ensure the quality of the analysis and transparency of the process (Bengtsson, 2016). (Insert Table 1 about here). Similar words were used to describe bathing in labor, but the small subsample precluded additional analyses. Descriptive statistics were used to analyze demographic data.

Findings

Demographics

The sample consisted of 21 nulliparous and 20 multiparous women. No participant had more than 4 previous births. The women ranged in age from 18–38 years and averaged 24 years. Of these, 23 were single and 18 were married; years of education ranged from 5–19 and averaged 12 years. Forty of the women were employed while the occupation of 1 participant was unidentified. The ethnicity and race of participants is presented in Table 2. (Insert Table 2 about here).

Forty-six percent ($N=41$) said they had used bathing for purposes other than getting clean, while 54% had not. The most frequently used word to describe the purpose for which they had bathed was “relax” or “relaxation,” found in 17 responses. The second most frequent word was “ease,” used by 5 women in reference to the mind, pain or contractions. The third most frequent word was “cramps” or “cramping,” found in 4 responses. The word “calmed” was also used in reference to both self and cramping.

Only 2 women (4.9%) ($N=41$) had used bathing in a previous pregnancy. Both were African-American. One woman, who was nulliparous, reported using bathing at home for cramping prior to a nonviable preterm delivery. She said it “calmed” her contractions and “calmed” her down, keeping her from getting “panicky.” When asked about her anxiety during this experience, she responded by saying she tried “anything to stop the cramping”. A multiparous woman reported that soaking prior to and during labor “eased” her contractions.

When participants were asked if they had cultural beliefs about bathing, 90% ($N=41$) responded “no”, while 10% responded “yes”. The “yes” responses came from 3 women of African American race and 1 woman of Asian race.

Interestingly, responses were not about bathing in general as the question had asked, but about bathing in labor. Furthermore, the participants’ comments described directives from older female family members advising the participant to bathe in labor, based on their

positive personal experiences with bathing. “Grandmother told me”, “My cousin told me” and “Mother and her Mother....recommended it” were phrases used by participants.

The words “relaxing ” and “easing” pain to make labor and birth easier were included in two of the comments. Self-managed control of pain through bathing was implied; one participant’s mother had suggested using bathing prior to an epidural to control pain, while another’s grandmother suggested soaking and only going to the hospital when contractions got “sharper,” indicating true labor, thereby avoiding “being sent home.”

Discussion

Less than half of this group of healthy women at term gestation had used bathing for any purpose other than hygiene. The most frequently cited use for bathing other than hygiene was “relaxation” or as a relief measure for menstrual “cramps.” Taking a warm bath has previously been reported as a self-care measure by women with menstrual cramping pain (dysmenorrhea) (Jarrett et al., 1995). Bathing was also used to “ease” the mind and the pain of term labor contractions and to “calm” preterm cramps. Only one woman had previously used bathing during term labor; she said the experience “made me more relaxed, calmed me down instead of being panicky.” Participants’ responses point to both psychological and physiological purposes of bathing. It is viewed as a method to control or seek relief from pain and to promote physical and mental relaxation.

We were surprised that only 2 of 20 multiparous women in our sample had bathed in a previous labor. Therefore, our findings must be viewed with some caution because of the small sample size. It is well known that a variety of barriers including no access to tubs exist on labor units (Stark & Miller, 2009; 2010). However, it is possible that women bathed at home before entering the hospital and did not perceive this activity as part of their hospital labor experience. Neither did we ask if tubs were available in a previous labor, if bathing was recommended by health care providers, or for the locations of their previous births.

Although our sample was racially and ethnically diverse, only three African American women and one Asian woman said they had cultural beliefs about bathing. Directives for bathing came from family members who had themselves bathed while in labor and recommended it. In response to questions about use of folk remedies, caregivers of black children (83% mothers $N = 107$) in urban Detroit endorsed their use to treat fever, colic and teething. Almost twice as many respondents identified their mother as the source of information (e.g., use of a cool sponge bath when the child had fever) verses a health care provider. Additionally, the preponderance of all folk remedies was learned from the caregiver’s mother or grandmother (Smitherman et al., 2005).

Culturally specific folk remedies were used 63% of the time by parents of hospitalized children in Taiwan, implying widespread use (Chen et al., 2009). In the study by Smitherman et al., (2005) caregivers used folk remedies regardless of their educational level suggesting that culture may have a greater influence than access to care or socioeconomic status. Three of the four women in our study who reported cultural beliefs about bathing as directives from elder women were African American.

We hypothesize that similar, common sense models of health care are known to be transmitted through oral tradition in Native American culture (Turton, 1997), where the advice of “grandmother” is valued and respected regardless of tribal differences (Barrios & Egan, 2002).

An elderly Shetland woman in a historical ethnographic memorate gives an example of oral tradition from a female perspective. She tells the story of her Mother and female cousin crossing islands to seek a curative bottle of medicine for a sick female relative and also describes wise women and midwives of the culture providing care (Abrams, 2012).

In rural Nepal, mothers-in-law are the decision-makers during delivery (McPherson et al., 2010). Motherhood may prompt rekindling of cultural ties or traditions by women seeking advice from elders to understand and cope with the unknown at a particularly intense and vulnerable point in their lives (Barrios & Egan, 2002). It is possible that motherhood may foster this advice seeking in our racially and ethnically diverse, bio-medically oriented society as well. To test if this phenomenon is culturally bound a larger sample would be needed.

Findings of the current study are based on one geographic area. The study needs to be replicated in more diverse settings including areas with more deeply rooted ethnic or religious traditions and intact cultures. In Japan, daily immersion to the neck in a warm bath is linked to the calming and cleansing of the inner self with cultural significance far beyond mere hygiene (Traphagan, 2004). Daily tub baths are also associated with a good state of self-rated health by the Japanese (Hayasaka et al., 2010). Shared cultural attitudes, values and practices may influence the acceptance and use of interventions such as ancient Chinese medicine (Cai et al., 2018) or bathing.

The study data were collected in busy prenatal settings, with stringent time limitations imposed by the clinic schedule, routine antenatal tests and participants’ own schedules for transportation, work or other appointments. A longer interview with more in-depth questions was not possible. Also, notes had to be taken in the presence of the participants to avoid loss of information or error in documentation. In spite of this limitation, the words of these women describing bathing as relaxing, easing, calming and efficacious for relief of cramping and contractions are similar to the reports by laboring women of decreased anxiety and or pain, and increased relaxation during hydrotherapy (Benfield et al., 2001; Benfield, 2002; Benfield et al., 2010; Maude & Foureur, 2007).

The complex psychophysiological processes in normal labor may be affected by changes in neurohormones secondary to immersion during hydrotherapy. Plasma oxytocin and vasopressin are both stress-related hormones and uterine contractile agents, which are significantly decreased with hydrotherapy in labor (Benfield et al., 2010). It is possible that similar mechanisms are at play when menstrual cramps are relieved with bathing. Thus, the qualitative comments are confirmatory with findings from other qualitative and quantitative studies.

Conclusions and clinical relevance

While bathing in labor is a worldwide phenomenon, we are unaware of any other research that has explored together women's use of bathing, bathing in labor and cultural beliefs about bathing. Our findings support the self-administered use of bathing by women for pain control and promotion of psychological and physiological relaxation. However, the findings do not support the view that bathing is associated with unique, identifiable cultural beliefs; rather, these findings suggest that bathing is a self-care measure used by women which is transmitted through the oral tradition of female elders. We recommend the use of a more open, unstructured, in-depth approach, in a more relaxed setting, to clarify the findings presented here and to uncover additional themes or concepts related to bathing in pregnancy and labor and the cultural beliefs of women about this intervention. Study of culturally intact groups may uncover additional themes related to bathing in labor and as a self-care measure for dysmenorrhea.

Nurses and midwives may consider querying women who are contemplating bathing for relaxation or pain relief about advice from female elders to determine its effect on the woman's self-care decision. Cautionary instructions should be giving to pregnant women who are less than 37 completed weeks of gestation, to avoid bathing for relief of cramping or contractions, rather to seek immediate health care evaluation. Furthermore, assumptions that race or ethnicity precludes the use of bathing may be faulty.

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Table 1

Participant response to questions about bathing. Question followed by Verbatim response.

Do you use bathing for purposes other than getting clean?
- "to <i>relax</i> "
- "For menstrual <i>cramps</i> ; got into tub to <i>relax</i> "
- "Menstrual <i>cramps</i> ; soaks in"
Tell me about your experiences with bathing in labor:
- "5 month loss with <i>cramping</i> " "just got into the tub"
- "Soaked in warm water at home- "same result" was referring to previous response (see above).
How did bathing in labor affect your pain level?
- "out of the tub it was worse, in the tub it <i>calmed down</i> "
How did bathing in labor affect your anxiety level?
- "tried anything to stop?"
How did bathing in labor affect your relaxation level?
- "made me more <i>relaxed, calmed</i> me down instead of being panicky"
Describe your cultural beliefs about bathing.
- "Grandmother told me it is easier to have a baby in the tub; is easier to for it to come out, Grandmother has 8 children"
- "Grandmother told me to try soaking in tub and if they got 'sharper' then go to hospital. otherwise they will send you home"
- "My cousin told me was a good idea to <i>relax</i> and <i>ease</i> the pain in labor"
- "Mother said try bathing in labor prior to epidural. Mother and her Mother both bathed in labor in Vietnam and recommended it."

Table 2Ethnicity and race of healthy women at term gestation ($N = 41$).

Hispanic or Latino Ethnicity (n = 9)	Non-Hispanic or Latino Ethnicity (n = 32)
White 3	Black 15
American Indian 1	White 14
Race Undeclared 5	American Indian 1
	Asian 2