Maternal Placenta Consumption: A Novel Therapy Used by Postpartum Women

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In partial fulfillment of the requirements for the Doctor of Nursing Practice
Executive Summary

Maternal Placenta Consumption: A Novel Therapy Used by Postpartum Women

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This Doctor of Nursing Practice (DNP) scholarly project was designed to inform obstetric health care providers about maternal postpartum placenta consumption, which is a novel therapy that is growing in popularity among postpartum women. The objectives of this project were to: (1) synthesize existing knowledge on maternal placenta consumption; (2) write a manuscript that summarizes this information and submit it for publication to an academic journal; and (3) disseminate the project via presentation at a professional conference.

Maternal placenotophagy is the practice of consuming the placenta after birth. A popular method involves steaming, drying, and preparing the placenta into capsules that are then consumed by the new mother. Proponents of this practice claim physical and mental health benefits, including improved mood, prevention of postpartum depression, increased energy, and improved milk supply. However, there is a lack of scientifically rigorous evidence to substantiate many of these reports. Obstetric health care providers should be aware of maternal placenotophagy to help women make informed decisions about this novel therapy.

To implement this project, a literature search was conducted using the PubMed and Google Scholar databases utilizing the search terms “placentophagy,” “placenta consumption,” “placenta encapsulation,” “placenta ingestion,” and “eating placenta.” Additional articles were obtained from the works cited in other sources. A manuscript summarizing the results of the literature review was written and submitted to the Journal for Obstetric, Gynecologic and Neonatal Nursing. Finally a podium presentation was presented at the Utah Valley University’s Nursing Research Conference in March 2015 to inform current and future nurses.

The results of the literature review indicated that there is limited evidence that maternal placenta consumption may have some benefits, including possible improved mood, decreased fatigue, increased milk supply, and pain relief. However, there are also theoretical risks, including the possibility of a thromboembolism from exogenous estrogen and toxicity from heavy metals accumulated in placental tissue. Additional research is needed to investigate the possible benefits and risks of this novel therapy.

Committee members for this project include Debra Penney, CNM, MPH, PhD, (Committee Chair), Gwen Latendresse, PhD, CNM, FACNM (Nurse-Midwifery and Women’s Health Program Director), and Barbara Wilson, PhD, RNC, Associate Dean, Academic Programs. The content experts are Daniel Benyshek, PhD (Department of Anthropology, University of Nevada Las Vegas) and Patricia A. Murphy, DrPH, CNM, FACNM (Deputy Editor for the Journal of Midwifery and Women’s Health).
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Placentophagy is the practice of consuming the placenta after birth (Cremers & Low, 2014). This novel therapy is experiencing a recent surge in the U.S, Europe, and Australia despite a lack of historical evidence of maternal placenta consumption in human history (Beacock, 2012; Young & Benyshek, 2010) or empirical evidence to substantiate many claims about health benefits (Beacock, 2012). Obstetric clinicians, including nurse-midwives, women’s health nurse practitioners, obstetricians and gynecologists, and obstetric nurses, need accurate and current information to be better prepared to counsel their patients about this practice.

**Problem Statement**

There has been a recent trend in the United States, Europe, and Australia of maternal placentophagy, or consumption of the placenta, by women during the postpartum period (Beacock, 2012). While this is not mainstream practice, a small but growing number of women are choosing to consume their placentas (Young & Benyshek, 2010). Some believe that eating one’s placenta confers physical and mental health benefits, such as preventing postpartum depression and improving lactation (Cremers & Low, 2014). Anecdotes from obstetric providers indicate that women are asking about the potential benefits of placenta consumption, but there is little research on either the benefits or risks involved with the practice. There has been no research to date on women’s healthcare providers’ knowledge, attitudes, and beliefs about placentophagy. In addition, obstetric clinicians can benefit from learning more about the practice, patients’ motivations, and how to counsel women who inquire about maternal placentophagy.
Clinical Implications

It is difficult to estimate how many women are consuming their placentas. Cremers and Low (2014) investigated attitudes toward placentophagy by the public, and found that of 216 respondents to a survey about placentophagy, 66% had heard about the practice, and 3.3% had eaten human placenta themselves. Selander, Cantor, Young, and Benyshek (2014) reported on the motivations and experiences of women who have eaten their placentas. They found that of 189 women, 40% reported that they experienced improved mood and 15% felt they had experienced improved lactation as a result of consuming their placenta (Selander et al., 2013). Beacock (2012) summarized the literature regarding potential benefits of human placentophagy. She found that while there is some evidence from animal models regarding potential benefits, there is a paucity of evidence to support claims of decreased depressive symptoms or increase in lactation (Beacock, 2012).

There are also theoretical risks from consumption of placenta during the postpartum period. Women are at a greater risk of a thromboembolic event during pregnancy and the postpartum period (Hatcher et al., 2011). The placenta is a major source of estrogen during pregnancy, and exogenous estrogen administration in the form of estrogen-containing contraceptives is contraindicated in the immediate postpartum period due to the increased risk of a thromboembolic event (CDC, 2010). If placenta consumption significantly increases estrogen levels, this could result in a significant increase in risk for a thromboembolic event. In addition, estrogen is thought to antagonize prolactin via suppression of the hypothalamus. For this reason, some women’s healthcare providers counsel against the use of estrogen-containing contraceptive methods during lactation because it may decrease lactation (Hatcher et al., 2010).
Obstetric healthcare providers are likely to be questioned from their patients regarding whether or not the practice is helpful or has potential risks. Nurses and nurse-midwives are in unique position to help their patients to weigh the evidence available and make informed decisions about their healthcare because they generally spend more time with patients during prenatal visits than physicians, and they operate within a model of care the focuses on shared decision making that protects patients’ right for autonomy (American College of Nurse Midwives [ACNM], 2012; American Nurses Association, 2008).

**Objectives**

The overarching goal of this project is to inform obstetric clinicians (nurse-midwives, women’s health nurse practitioners, obstetricians, gynecologists, and obstetric nurses) about the practice of placentophagy, or consumption of the placenta, to be better prepared to counsel their patients about this practice.

Objectives:

1. Synthesize existing knowledge on maternal placenta consumption by December 2014
2. Write a manuscript that summarizes this information and provides evidence-based information on history, prevalence, risks, and benefits of placenta consumption; submit for publication to an academic journal by February 2015.
3. Disseminate the project by submitting an abstract for a podium or poster presentation by March 2015.

**Theoretical Framework**

The theoretical framework for this project is the ACE Star Model of Knowledge Transformation. It was first developed by Kathleen Stevens at the Academic Center for
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Evidence Based Practice at The University of Texas Health Science Center at San Antonio to understand the process of knowledge transformation that must occur for healthcare providers to integrate evidence into practice. The model has five constructs, depicted as a 5-pointed star. These include: 1) discovery research, 2) evidence summary, 3) translation to guidelines, 4) practice integration, and 5) process and outcome evaluation (Stevens, 2004).

The Institute of Medicine (2001) outlines the difficulties healthcare providers have in utilizing original research in their practices, stating that “[n]o unaided human being can read, recall, and act effectively on the volume of clinically relevant scientific literature” (p. 25). During the evidence summary stage of the ACE Star Model, the body of research on a health topic is synthesized into a “single, meaningful statement of the state of the science” (Stevens, 2004). Evidence summaries can help providers by reducing the complexity and volume of research on a topic.

One advantage of an evidence summary approach to informing obstetric clinicians on maternal placentophagy is that it can provide information in a manageable form, rather than rely on clinicians to conduct their own review of the literature to inform their counseling practices. A second advantage is that the information is presented in the context of clinical practice, rather than a report on research findings. In keeping with the ACE Star Model, this project was written in a way that accurately presents the current knowledge on maternal postpartum placenta consumption and discusses this novel therapy in the context of clinical practice. Studies were analyzed according to the applicability of the research to human maternal consumption and in the light of how clinicians should portray the information to their patients.
Literature Review

A literature search was conducted in the PubMed and Google Scholar databases using the terms “placentophagy,” “placenta consumption,” “placenta encapsulation,” “placenta ingestion,” and “eating placenta.” Articles and books were limited to English language texts. These searches were supplemented by manual queries based on the references cited in initially identified studies. Due to the limited amount of research on maternal placenta consumption, all published qualitative and quantitative studies that met the search criteria were included and synthesized according to the following main categories: (a) placentophagy in humans and nonhuman mammals; (b) prevalence and demographic characteristics of women who choose placenta consumption; (c) techniques for placenta preparation; (d) benefits of placentophagy; (e) risks of placentophagy; and (f) institutional and governmental policies regarding the practice. The following subsections summarize the results of this literature review. A thorough discussion of the literature was prepared into a manuscript and submitted to the Journal of Obstetric, Gynecologic and Neonatal Nursing. It is also included with this paper as Appendix C.

Placentophagy in Humans and Nonhuman Mammals

Almost all mammalian species consume their placentas (Kristal, DiPirro, & Thompson, 2012; Young & Benyshek, 2010). Although placentophagy is common among nonhuman mammals, the practice has not been common in human cultures (Kristal et. al, 2012). In a systematic review of ethnographic literature of 179 cultures, Young and Benyshek (2010) identified only one account of maternal placentophagy, for which additional corroborating accounts have not been identified.
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Despite the absence of placentophagy in the ethnographic literature, human placenta has been utilized in traditional Chinese medicine for centuries as a medicine for a variety of ailments, but not, traditionally, by a new mother (Bensky, Clavey, and Stöger, 2004; Jiao, 2005). Studies in the academic literature highlight use of human placenta to treat intractable anemia (Hijikata, Kano, & Xi, 2009) and human placenta in combination with traditional Chinese herbs, has also been used to treat infertility (Zhou & Qu, 2009). Outside traditional Chinese medicine, there are only rare, isolated accounts in the literature that proposed benefits of placenta consumption (British Medical Journal, 1902; Hammett, 1918; Hammett, 1919; McNiele, 1918; Moir, 1937; Ober, 1968; Soykova-Pachnerova, Brutar, Golova, and Zvolska, 1954). It appears that this practice became more common in Western cultures beginning in the 1970s (Ober; 1979).

Prevalence and Demographic Characteristics of Women Choosing Placenta Consumption

Although uncommon in human cultures, there is a small but apparently growing number of women in the North America, Europe, and Australia who are choosing placenta consumption. Of 215 lay people surveyed by Cremers and Low (2014), most (66%) had at least heard of the practice and 3.3% had consumed placenta themselves. Convenience sampling of self-selected participants makes it difficult to draw conclusions about the prevalence of placenta consumption in the general population based on this survey, however. Cole (2014) estimated based on surveys of her own lactation consultation clients, that perhaps as many as 2,000 women in Portland, Oregon alone engaged in the practice between 2009 and 2014.

Selander et al. (2013) reported on the demographic information of women choosing this novel therapy. Based on their survey of 189 women, those who consumed their placentas were more likely to be Caucasian, lived in the Western U.S., had attended at least some college, and had incomes greater than $50,000 per year (Selander et al., 2013).
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How the Placenta is Prepared

Most women who consume their placentas choose placenta encapsulation of either raw or cooked placenta as the method of preparation. Approximately 70-80% of women surveyed by Selander et al. (2013) chose this method, and less than 15% of women ate their placenta raw. To encapsulate placental tissue, raw or cooked placenta is cut into strips and dehydrated in a food dehydrator or oven, then ground into a powder and placed into capsules (Burns, 2014; Selander et al., 2013). The placenta can also be eaten immediately postpartum, either by swallowing pieces of raw or frozen placenta whole or by blending the placenta into a drink with juices and fruits (Selander et al., 2013).

Potential Benefits of Placenta Consumption

Proponents of placental consumption claim increased energy, increased lactation, decreased risk of baby blues and postpartum depression, increased iron stores, decrease postpartum vaginal bleeding, and quicker uterine involution (Selander, 2015). However, research investigating these effects is scarce. In a phenomenological study, Selander et al. (2013) investigated the motivations and experiences of women who had eaten their placentas. They found that of 189 women, 40% reported that they experienced improved mood, 26% reported increased energy and decreased fatigue, 15% felt they had experienced improved lactation, and 7% reported alleviation of vaginal bleeding and discharge as a result of consuming their placenta (Selander et al., 2013). While this research indicates that there may be some benefits from the perspective of postpartum women, the self-selected nature of participants, small sample size, and inability to control for placebo effects limit the applicability of the results.
Proposed mechanisms of action for improved energy and mood (and decreased risk for fatigue and postpartum depression) include replenishment of nutrients including iron and B vitamins (Beackock, 2012). Research supporting these claims is lacking. Both iron and B vitamins have been identified in measurable quantities in placental tissue (Bradley et al, 2004; Drachenberg & Papadimitriou, 1994; Phuapradit et al., 2000; Ramsay, Neumann, Clark, & Swendseid, 1983; Wong & Sana, 1990). However, it is unclear if the placenta contains enough of these nutrients in absorbable forms to have an impact on postpartum women. Furthermore, the evidence regarding the role of B vitamins on mood and postpartum depression is mixed (Ellsworth-Bowers & Corwin, 2012).

In addition to improved mood and energy, proponents of placenta consumption also claim that it improves milk supply in breastfeeding women. Selander et al. (2013) found that 15% of women surveyed reported improved lactation as a result of consuming their placentas; however, the self-reported nature of participants and poor reliability of perceived relative improvements in milk supply are significant limitations to these results. Other evidence on this subject is scarce, and consists of articles published in the early and mid-1900s (e.g., Soykova-Pachnerova et al. (1954). These investigations have serious methodological shortcomings, and research on animal models regarding the effect of placentophagy on lactation is mixed (Blank & Friesen, 1980; Grota & Eik-Nes, 1967).

Although not often cited by proponents of the practice, there is evidence based on rodent models that there may be an analgesic effect from placenta consumption (e.g., Kristal et al., 2012). Kristal and colleagues have identified a substance in placental tissue, placental opioid enhancing factor (POEF), which acts by enhancing opioid-mediated analgesia when ingested by rats (e.g., Kristal et al., 2012). Pregnancy-mediated analgesia is an endogenous opioid-mediated
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increase in the maternal pain threshold that occurs in late pregnancy and is particularly strong at birth; ingestion of placenta may further decrease pain by enhancing the effects of the endogenous opioids that are produced during this time period. The applicability to humans of these animal research findings is limited, however. The fact that most mammals naturally consume their placentas, but humans do not, makes it especially difficult to apply these findings to humans.

Potential Risks of Placentophagy

While limited human and animal models suggest there may be some benefit to placenta consumption, there are also theoretical risks from this practice. Of those women surveyed by Selander et al. (2013), most women reported no negative side effects from ingesting their placenta. Of the negative side effects that were reported, the most common were an unpleasant taste or smell (7%) and headache (4%). Currently, research has not been conducted on potential harms from placenta consumption. However, theoretical risks may be related to the prothrombotic and endocrine activity of estrogen, environmental toxins present in placental tissue, and transmission of bloodborne pathogens.

Women are at a greater risk of a thromboembolic event during pregnancy and the postpartum period (Hatcher et al., 2011). The placenta is a major source of estrogen during pregnancy, and exogenous estrogen administration in the form of estrogen-containing contraceptives is contraindicated in the immediate postpartum period due to the increased risk of a thromboembolic event (CDC, 2010). Likewise, if placenta consumption significantly increases estrogen levels, this could result in an increase in risk for a thromboembolic event. In addition, exogenous estrogen contained in placental tissue may negatively impact milk supply through suppression of prolactin in the hypothalamus. However, the widespread practice of maternal
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In addition to possible risks related to bioactive hormones, harmful substances including the heavy metals cadmium, lead, and mercury, have been shown to accumulate in placental tissue during pregnancy (e.g., Esteban-Vasallo, Aragonés, Pollan, López-Abente, & Perez-Gomez, 2012). These substances are eliminated from the mother’s body with delivery of the placenta, but can be reintroduced via ingestion of placental tissue. Ingestion of placental tissue containing heavy metals may increase a mother’s body burden of these toxicants which have the potential to impact maternal, as well as newborn health, as they are transferred to the breast milk in breastfeeding women.

Policies Regarding Placentophagy

Given the recent rise in the number of women choosing to consume their placentas, there is a need for governments and healthcare institutions to develop policies regarding placenta consumption. Laws regulating infectious waste in Hawaii and Oregon explicitly allow mothers to take their placentas home from the hospital (LaGanga, 2013; Lauer, 2006; Hawaii Administrative Code, 2007; Oregon Administrative Code, 2015). Infectious waste handling and disposal laws in other states neither allow nor prohibit women from taking their placentas home from the hospital (LaGanga, 2013).

To address issues of liability and to comply with laws regulating the handling and disposal of infectious waste, hospitals have developed policies for release of the placenta to families who wish to take it home. Baergen, Harshwardhan, and Heller (2013) surveyed thirty-three practicing perinatal pathologists in the U.S. and Canada to investigate policies in place for the release of placentas from hospitals. Most (66%) respondents stated that their hospitals allow...
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release of placentas, but 11% of those surveyed reported that their hospitals specifically prevent release. Baergen, Harshwardhan, and Heller (2013) recommend the following elements be incorporated into written policies for release of the placenta: (a) information about the value of pathologic examination and preclusion of subsequent pathologic evaluation once it has been released; (b) a statement that acknowledges cultural practices involving the placenta but neither endorses nor condemns such practices; and (c) a statement that cautions families about safe handling and disposal of human tissue and potential toxic effects of fixatives if they have been used.

**Literature Review**

Proponents of placentophagy claim physical and mental health benefits, but there is a lack of strong evidence to substantiate many of these reports— including improved mood, prevention of postpartum depression, increased energy, and improved milk supply (Selander, 2015). However, there is a lack of scientifically rigorous evidence to substantiate many of these reports. Despite this, many women are choosing this novel therapy.

Narrative theory (Herman, Phelan, Rabinowitz, Richardson, & Warhol, 2012) can help explain why people adopt novel but unproven interventions, such as placenta consumption or other forms of “alternative” medicine. There is evidence that the human brain processes stories better than other forms of knowledge (Kosko et al., 2006). A powerful story told by a trusted family member or friend can help spread an idea, even if evidence is lacking to support that idea. The theory of diffusion of innovations (Rogers, 2003) also helps explain the adoption of novel therapies without evidence to support them. According to this theory, new ideas spread through a population as innovations are initially adopted by a few individuals who first adopt an innovation and subsequently spread it among their circle of acquaintances (Rogers, 2003). In
keeping with these theories, Selander et al. (2013) reported that postpartum women being introduced to the practice of placenta consumption by friends, family members, or other acquaintances, and since women initially hear about the practice from a friend, she may feel more comfortable trying it.

Although scientifically rigorous evidence is lacking, some women who have consumed their placentas report improved mood, decreased fatigue, improved lactation, and decreased postpartum bleeding (Selander et al., 2013). Based on research of animal models, there may be an analgesic effect from ingesting placenta (Kristal et al., 2012). Some argue that placenta consumption replenishes nutrients, such as iron and B vitamins, thus improving symptoms of fatigue and depressed mood (Beackock, 2012). To date, the risks of placenta ingestion have focused on exposure to contaminants that are known to accumulate in the placenta, including the heavy metals cadmium, lead, and mercury (Young et al., 2012). Other risks may include a possible increase in the risk of thromboembolic events due to potentially active estrogenic compounds in placental tissue.
Implementation

This section summarizes the steps taken to meet the objectives of this project. First, knowledge about maternal placenta consumption during the postpartum period was gathered and synthesized based on a thorough review of both the peer-reviewed literature and consumer-focused articles on the practice. Specific topics gathered to meet Objective 1 included:

- history and cultural traditions of maternal placenta consumption in humans compared with other mammals;
- demographic information on who is ingesting their placenta and what motivations drive this practice;
- how the placenta is prepared;
- potential benefits of placenta consumption;
- potential risks of placentophagy;
- substances contained in the placenta; and
- hospital and government policies regarding placentophagy.

For Objective 2, a manuscript was prepared and submitted to the *Journal of Obstetric, Gynecologic, and Neonatal Nursing* in March 2015. The initially proposed journal, *Journal for Midwifery and Women’s Health*, was changed because a similar article was recently accepted for publication in that journal. The *Journal of Obstetric, Gynecologic, and Neonatal Nursing* was selected as an alternative in order to reach a broad nursing and nurse-midwifery audience.

Objective 3 was implemented through a podium presentation at Utah Valley University’s Nursing Research Conference on March 11, 2015. This professional conference also differed from the originally proposed venue of the Annual Meeting of the American College of Nurse Midwives (ACNM). An abstract was submitted to the ACNM Annual Meeting for presentation,
but was not accepted for presentation. The local conference was selected as an alternative means of reaching current and future obstetric nurses and nurse-midwives.

**Evaluation**

The objectives for this project were evaluated using three main strategies. The gathering and synthesis of knowledge about maternal placental consumption (Objective 1) was evaluated through a critical evaluation of the literature review by the content experts, Daniel Benyshek, PhD (Department of Anthropology, University of Nevada Las Vegas) and Patricia A. Murphy, DrPH, CNM, FACNM (Deputy Editor for the Journal of Midwifery and Women's Health). Approval by the committee chair and content experts of the literature review served to evaluate the completeness and accuracy of the information gathered. Next, evidence of submission of the written manuscript to the *Journal of Obstetric, Gynecologic and Neonatal Nursing* served to evaluate the completeness of Objective 2 (Appendix B). Finally, evidence of submission of an abstract for a podium or poster presentation at Utah Valley University’s Nursing Research Conference served to evaluate completeness of Objective 3. Table 1 provides a summary of the implementation and evaluation of this project.

**Results**

For Objective 1, knowledge about maternal placenta consumption during the postpartum period was gathered and synthesized based on a thorough review of both the peer-reviewed literature and consumer-focused articles. There have been several works published in recent years about the practice of placentophagy, including a recent ethnographic study of women’s motivations and experiences (Selander, et al., 2013). The number of studies on the benefits and
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Table 1

**Implementation and evaluation plan**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Implementation</th>
<th>Evaluation</th>
</tr>
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<tbody>
<tr>
<td>1. Synthesize current knowledge about the practice of placentophagy (December 2014)</td>
<td>Relevant knowledge was selected to summarize current knowledge based on a thorough literature review of published peer-reviewed and consumer literature</td>
<td>Content experts and committee chair reviewed and approved of the content</td>
</tr>
<tr>
<td>2. Write a manuscript summarizing current knowledge about placentophagy</td>
<td>A manuscript was submitted to the <em>Journal of Obstetric, Gynecologic and Neonatal Nursing</em> for publication.</td>
<td>Evaluation by content experts and committee chair and submission of the manuscript</td>
</tr>
<tr>
<td>3. Design and present a podium presentation</td>
<td>An abstract was submitted to Utah Valley University’s Nursing Research Conference for presentation on March 11, 2015</td>
<td>Submission of the abstract</td>
</tr>
</tbody>
</table>

risks of human placentophagy were few, which served as a barrier to completing a clinically relevant literature review. However, in-depth reviews of related articles and consumer literature facilitated the review process. Content expert suggestions for both additional articles and methods to critically analyze existing works further facilitated this process and resulted in a thorough synthesis of available information on the phenomenon of maternal placenta consumption that is clinical relevant.

Objective 2 was achieved by submission of a manuscript summarizing the results of the literature review to a peer-reviewed, nationally recognized, nursing journal, the *Journal of Obstetric, Gynecologic and Neonatal Nursing*. This *Journal of Obstetric, Gynecologic and Neonatal Nursing* was selected as an alternative in order to meet the objectives of the project of informing obstetric clinicians about the practice of maternal placenta consumption.
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consumption and to increase the likelihood of acceptance for publication. This objective was met in full, as evidenced by documentation of submission of a manuscript according to that journal’s submission guidelines (Appendix B).

For Objective 3, a podium presentation was presented at Utah Valley University’s Nursing Research Conference on March 11, 2015. To meet the objectives of the project, the Utah Valley University conference was chosen as an alternative means of reaching current and future obstetric nurses and nurse-midwives. A letter of acceptance of the presentation to the Nursing Research Conference provides evidence of completion of Objective 3 (Appendix D). A copy of the PowerPoint® presentation is also included (Appendix E).

The main limitation of this project was the overall paucity of available studies specifically focused on contemporary human maternal placenta consumption and the benefits and risks associated with this practice. To fill gaps in the literature, articles based on animal research, as well as articles on related topics, were used. For example, to evaluate the potential for toxicity from heavy metal contamination of placental tissue, articles on the concentrations of heavy metals in placentas were identified and concentrations were compared to existing human health standards for a similar item ingested by humans, meat or fish. Similarly, studies on estrogenic activity of ingested human placenta were not available; instead, potential estrogen activity of processed placenta was evaluated based on case studies that described effects of dermal exposure to placenta-containing products. The manuscript containing the literature review included statements cautioning readers about the uncertainties in available research and the limited applicability of these related studies to human maternal placental consumption (Appendix C).
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Recommendations

As discussed above, a manuscript was submitted to the *Journal of Obstetric, Gynecologic, and Neonatal Nursing* for publication. However, if the manuscript is not accepted and the paper not published in this journal, follow up is recommended to submit to another journal in order to meet the overall goal of informing obstetric clinicians on the topic. Other venues for dissemination to obstetric clinicians are also planned, including presentation as a poster at the University of Utah College of Nursing’s 4th Annual Regional Women’s Health and Midwifery Conference on April 10, 2015.

Patient educational materials are also needed. A handout could be created to give to women in clinic. Electronic formats are also effective means for dissemination of information to pregnant women. This topic is currently under review by the University of Utah Health Sciences Radio, *The Scope* (University of Utah Healthcare, 2015) to be considered as the subject of a future podcast. In addition, a summary of the evidence regarding maternal placenta consumption was recently written as a post to the Facebook page of a Salt Lake City, UT midwifery practice as a means of informing women on the topic.

In addition, based on the results of the literature review, there is a need for placebo-controlled, double-blinded trials on the benefits and risks of consumption of placenta capsules, which is the most common form of placenta consumption. Research priorities should include studies that investigate mechanisms of action for proposed benefits and potential risks, with sample sizes large enough to detect rare events such as thromboembolism. This research agenda is outside the scope of this Doctorate of Nursing Practice (DNP) scholarly project, however.
Obstetric clinicians would also benefit from a quick reference guide or checklist that helps them to focus their counseling and ensure that key elements of informed decision-making are met. Such a checklist could be kept in clinics and labor and delivery units for quick access by clinicians. Finally, future work on this topic could also include helping governments and/or institutions develop policies that are culturally sensitive and address risks related to handling, disposal, and consumption of placenta.

**The Doctorate of Nursing Practice Essentials**

The American Association of Colleges of Nursing (2006) has developed eight essential elements and competencies that must be present in programs conferring the DNP degree. This project, completed in partial fulfillment of the DNP degree, addresses the following foundational competencies that represent core elements of advanced nursing practice roles: Essentials I, III, VII, and VIII.

This project met the elements of DNP Essential I, scientific underpinnings for practice, through its focus on scientific evidence on the benefits and risks of the emerging use of placenta consumption by postpartum women. Essential I stipulates that the DNP graduate be able to “…integrate nursing science with knowledge from ethics, the biophysical, psychosocial, analytical, and organizational sciences as the basis for the highest level of nursing practice” (AACN, 2006). The literature review conducted for this project analyzed available research from a diverse array of disciplines, including anthropology and ethnography, physiology, toxicology, environmental sciences, traditional Chinese medicine, and nutrition. Integration of information from these diverse disciplines demonstrates mastery of DNP Essential I.
DNP Essential III, clinical scholarship and analytical methods for evidence-based practice, represents the core element of this project. Analytical methods were utilized in this project to critically appraise the available literature and derive recommendations for obstetric nurses and nurse-midwives to help them counsel women who are considering maternal placenta consumption.

Reduction of risk to populations is central to the advanced nursing practice role. The literature review conducted for this project identified potential risks to postpartum women from maternal placentophagy, including possible exposure to environmental contaminants and potentially bioactive exogenous estrogens. By identifying these potential threats to health, this project also met the core elements of DNP Essential VII, clinical prevention and population health for improving the nation’s health.

Under DNP Essential VIII, advanced nursing practice, the AACN (2006) identifies the ability “…to practice in an area of specialization within the larger domain of nursing” (p. 16) as a hallmark of the DNP degree. Addressing the needs of the specific population of postpartum women means understanding the context in which they make their healthcare decisions. Maternal placenta consumption is a practice that is apparently growing among this population, and women require healthcare providers who are able to help them evaluate healthcare decisions by discussing the benefits and risks of this practice, as well as the policies affecting them. This project meets this DNP Essential because helps specializes obstetric providers to meet the needs of this specific population.
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Conclusion

The purpose of this project was to provide a literature review on the current science of placental consumption in order to improve obstetric provider knowledge about this apparently growing practice. Maternal placenta consumption is the practice of consuming the placenta during the postpartum period. A popular method involves drying, steaming, and preparing the placenta into capsules which are consumed by the new mother (Selander et al., 2013; Burns, 2014). While the practice is rare, there is a small but apparently growing number of women in the North America, Europe, and Australia who are choosing placenta consumption (Beacock, 2012; Cremers & Low, 2014; Selander et al., 2013). The practice has not been common among human cultures worldwide (Ober, 1973; Ober, 1979; Young & Benyshek, 2010), although there is a tradition of use of human placenta as a medicine in Traditional Chinese Medicine, though not traditionally by new mothers (Bensky, Clavey, & Stöger, 2004; Jiao, 2005).

Proponents of this practice claim physical and mental health benefits, including improved mood, prevention of postpartum depression, increased energy, and improved milk supply (Selander, 2015). However, there is a lack of scientifically rigorous evidence to substantiate many of these reports. Some women who have consumed their placentas report improved mood, decreased fatigue, improved lactation, and decreased postpartum bleeding (Selander et al., 2013). Research on animal models suggest there is an analgesic effect from ingestion of placenta and amniotic fluid in rats (Kristal et al., 2012) and this same effect may be present in humans, as well. Some argue that placenta consumption replenishes nutrients, such as iron and B vitamins, thus improving symptoms of fatigue and depressed mood (Beacock, 2012), but substantial evidence supporting these theories is lacking. There are also theoretical risks from maternal placenta consumption, including the possibility of thromboembolic events due to potentially
active estrogenic compounds in placental tissue (Hatcher et al., 2011; Khan-Dawood & Dawood, 1984). Accumulation of environmental toxins and safe handling practices are also concerns (LaGanga, 2013; Lauer, 2006; Young, Benyshek, & Lienard, 2012).

Given the apparent rise in prevalence of placenta consumption among postpartum women, obstetric nurses and other women’s healthcare providers should be aware of the practice, be informed on the evidence regarding the potential benefits and risks, know how placenta is being prepared and consumed, and understand the policies and regulations that impact families who choose this option. They should be prepared to discuss potential benefits such as pain relief, improved mood, or increased energy; and possible risks, including contamination with heavy metals, and a theoretical risk of thromboembolism.

Obstetric clinicians were informed about the novel practice of maternal placenta consumption via two venues. First, a manuscript was written and submitted to the Journal of Obstetrics, Gynecology, and Neonatal Nursing as an “In Review” piece according to the author guidelines stipulated but the journal. Second, a podium presentation was presented at Utah Valley University’s Nursing Research Conference on March 11, 2015. The information disseminated to obstetric nurses and nurse-midwives will help them to better counsel women so they can make informed decisions about this apparently growing novel therapy being used by postpartum women. In partial fulfillment of the DNP degree, this project met the core elements of the AACN (2006) DNP Essentials I, II, VII, and VIII.
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References


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http://arcweb.sos.state.or.us/pages/rules/oars_300/oar_333/333_056.html


http://placentabenefits.info/articles.asp


Proposal defense PowerPoint® Presentation

Maternal postpartum placenta consumption
Informing obstetric providers on this complementary & alternative therapy

Emily Harthayes, RN, BSN, MS
NURSE-MIDWIFERY & WOMEN’S HEALTH
DNP SCHOLARLY PROJECT PROPOSAL DEFENSE

Background: Maternal Placentaphagy

- Consuming one’s placenta during the postpartum period
- A popular method is encapsulation
- Proponents claim physical and mental health benefits
- Lack of evidence to substantiate these reports

Photo source: morguefile.com

Commented [RSH2]: I originally had 3 slides to a page but they were really hard to read so I changed to 2 slides per page.
The Problem

- Small but growing number of women choosing placenta consumption
- Obstetric providers are questioned by patients about the potential benefits
- Little research on benefits or risks and no research on obstetric providers’ knowledge, attitudes, and beliefs
- To be better prepared to counsel their patients, obstetric providers need accurate and current information about placentaphagy, patients’ motivations, and how to counsel women who inquire about this practice

Clinical Significance

- Small but growing practice:
  - 3.3% of 214 men and women reported they had eaten human placenta (Chemes & Lore, 2014)
  - Google “placenta encapsulation Utah” = 13,000 results
- Potential benefits:
  - Self-report from some women of improved 
  mood (40%) & lactation (10%) (Elstand, Cantor, Young, & Benshkek, 2014)
  - Evidence from animal models show an anaphylactic effect (Kidal, Difino, & Thompson, 2012)
- Theoretical risks:
  - Increased risk of thromboembolic event related to ingested estrogen in placenta
  - Decreased milk supply related to prolactin antagonism in the hypothalamus?

Maternal Placenta Consumption
Literature Review

- **Tradition of use**
  - Traditional Chinese medicine
  - Intractable anemia (Micescu, Kass, & Xi, 2007)
  - Infertility (Bhow & Co., 2009)
  - Hypoplastic (Bronic, 2007)

- **Anthropological investigations**
  - Almost all mammals consume their placentas, but not humans
  - Theories include cleanliness of nest area, replenishment of nutrients/hormones, maternal hunger, & temporary cannibalistic behavior (Dobkin, D’Inca, & Thompson, 2012; Young & Betzwha, 2010).

- **Contemporary human maternal placentaphagy**

Objectives

1. **Synthesize existing knowledge** on maternal placenta consumption by December 2014.
2. **Write a manuscript** that summarizes this information and addresses gaps in provider knowledge; submit to the *Journal of Midwifery and Women’s Health* as a “Clinical Rounds” paper by February 2015.
3. **Disseminate** the project via a podium or poster presentation for the 60th Annual Meeting of the American College of Nurse-Midwives annual meeting in Washington, D.C., June 27 - July 1, 2015 to inform nurse-midwives and other obstetric providers about the practice of maternal placenta consumption. Submit abstract by August 4, 2014.
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Theoretical Framework - ACE Star Model of Knowledge Transformation

- Used to understand the process of knowledge transformation that must occur for healthcare providers to integrate evidence into practice.
- 5 constructs, depicted as a 5-pointed star.
- During the evidence summary stage, the body of research is synthesized into a “single, meaningful statement of the state of the science” (Stevens, 2004).
- Advantages of an evidence summary approach:
  - Manageable amount of information for busy providers.
  - Information is presented in the context of clinical practice.

Implementation & Evaluation

<table>
<thead>
<tr>
<th>Objective</th>
<th>Implementation</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Synthesize current knowledge about the practice of placetoxygogy (December 2014)</td>
<td>Select relevant information to form into a manuscript that summarizes current knowledge based on a thorough literature review of published peer-reviewed and consumer literature.</td>
<td>Content experts and steering committee will review and approve of the content.</td>
</tr>
<tr>
<td>2. Write a manuscript summarizing current knowledge about placetoxygogy (February 2015)</td>
<td>Submit a “Clinical Rounds” paper to the Journal of Midwifery and Women’s Health for publication.</td>
<td>Evaluation by content experts and committee chair and submission of the manuscript.</td>
</tr>
<tr>
<td>3. Design a poster and/or podium presentation (August 2014)</td>
<td>Submit abstract to the American College of Nurse Midwives (ACNM) annual meeting to present a podium or poster presentation on findings.</td>
<td>Submission of the abstract.</td>
</tr>
</tbody>
</table>
Summary

- Small but growing number of women choosing placenta consumption
- Obstetric providers are questioned by patients about the potential benefits
- Little research on benefits or risks and no research on obstetric providers’ knowledge, attitudes, and beliefs
- To be better prepared to counsel their patients, obstetric providers need accurate and current information about placentaphagy, patients’ motivations, and how to counsel women who inquire about maternal placentaphagy
- This project will provide this information through publication of a peer-reviewed article and poster or podium presentation at a national meeting

Acknowledgements

- Committee members
  - Deba Perreny, CNM, MPH
  - Karle Ward, DNP, WHPN, ANP
  - Susanna Cohen, CNM, DNP
  - Committee Chair
  - DNP Program Director
  - Nurse-Midwifery & Women’s Health Program Director
References


Appendix B

Confirmation of Submission of Manuscript to the

*Journal of Obstetric, Gynecologic, and Neonatal Nursing*
Appendix C

Manuscript submitted to the *Journal of Obstetric, Gynecologic and Neonatal Nursing*
Objective: To review and summarize the literature regarding maternal placenta consumption.

Data Sources: Published, peer-reviewed articles were identified through searches of the PubMed, Medline, Google Scholar, and CINAHL databases.

Study Selection: English language studies containing the key terms “placentophagy,” “placenta consumption,” “placenta encapsulation,” and “placenta ingestion,” were selected for this review. This search was supplemented by manual queries based on the references cited in initially identified studies.

Data Extraction: Due to the limited amount of research on maternal placenta consumption, all qualitative and quantitative studies that met the search criteria were included. Studies were analyzed individually and data were extracted and organized based on author and year of study, study purpose and design, study subjects, measurement variables, and data collection techniques.

Data Synthesis: Studies evaluating the practice of maternal placentophagy were synthesized according to the following categories: (a) placentophagy in humans and nonhuman mammals; (b) prevalence and demographic characteristics of women who choose placenta consumption; (c) techniques for placenta preparation; (d) benefits of placentophagy; (e) risks of placentophagy; and (f) institutional and governmental policies regarding the practice.

Conclusions: Maternal placentophagy is a small, but apparently growing, practice. A popular method involves preparing the placenta into capsules for ingestion. Proponents claim health benefits of improved mood, energy, and milk supply. Scientifically rigorous evidence to
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substantiate these claims is lacking, but there is limited evidence that suggests self-reported benefits and possible analgesic effects. There are possible risks of toxicity from ingestion of accumulated contaminants, and theoretical risk for thromboembolic events from estrogens in placental tissue. Governments and institutions should develop policies regarding placenta handling and home release. Obstetric nurses should be aware of maternal placenta consumption to help women make informed decisions about this novel therapy.

Key Words: placentophagy, placenta consumption, placenta encapsulation
Callouts

Callout #1: Most women who consume their placentas choose encapsulation. Others swallow raw or frozen pieces whole, or blend them with juices and fruits for a drink.

Callout #2: Although not often cited by proponents of the practice, there is evidence based on rodent models that there may be an analgesic effect from placenta consumption.

Callout #3: Heavy metals may be present in placental tissue at concentrations that could have health impacts.
Maternal Placenta Consumption: A Novel Therapy Used by Postpartum Women

Maternal placentophagy is the practice of consuming the placenta during the postpartum period. A popular method involves drying, steaming, and preparing the placenta into capsules which are consumed by the new mother. While the practice is rare, there is a small but apparently growing number of women in the North America, Europe, and Australia who are choosing placenta consumption (Beacock, 2012; Cremers & Low, 2014; Selander, Cantor, Young, & Benyshek, 2013). The practice has not been common among human cultures worldwide (Ober, 1973; Ober, 1979; Young & Benyshek, 2010), although there is a tradition of use of human placenta as a medicine in Traditional Chinese Medicine (Bensky, Clavey, & Stöger, 2004; Jiao, 2005).

Proponents of this practice claim physical and mental health benefits, including improved mood, prevention of postpartum depression, increased energy, and improved milk supply (Selander, 2015a). There is a lack of scientifically rigorous evidence to substantiate many of these reports, but some women who have consumed their placentas report improved mood, decreased fatigue, improved lactation, and decreased postpartum bleeding (Selander et al., 2013). Research on animal models suggest there is an analgesic effect from ingestion of placenta and amniotic fluid in rats (Kristal, DiPirro, & Thompson, 2012) and this same effect may be present in humans, as well. Some argue that placenta consumption replenishes nutrients, such as iron and B vitamins, thus improving symptoms of fatigue and depressed mood (Beackock, 2012).

However, there are also theoretical risks, including the possibility of thromboembolic events due to potentially active estrogenic compounds in placental tissue. Accumulation of environmental toxins and safe handling practices are also concerns (LaGanga, 2013; Lauer, 2006; Young, Benyshek, & Lienard, 2012).
Maternal Placenta Consumption

Given the apparently rising prevalence of placenta consumption among postpartum women, obstetric nurses and other women’s healthcare providers should be aware of the practice. The purpose of this article is to review and summarize the literature regarding maternal placenta consumption, including evidence on potential benefits and risks, as well as the history, prevalence, common practices, and government and institutional policies affecting women who choose this novel therapy. This information will help women’s healthcare providers to better counsel women so they can make informed decisions about placenta consumption within the context of nursing and medicine.

Placentophagy in Humans and Nonhuman Mammals

Almost all mammalian species consume their placentas. Exceptions to this rule include humans, marine mammals, and possibly camels (Kristal et al., 2012; Young & Benyshek, 2010). Theories for the causes of placentophagy in mammals include efforts to keep the nest area clean and reduce odors that may attract predators; maternal replenishment of nutrients and hormones; maternal hunger after not eating during labor and birth; and temporary carnivorous behavior (Kristal et al., 2012).

While placentophagy is common among nonhuman mammals, the practice has not been common in human cultures (Kristal et al., 2012). Young and Benyshek (2010) conducted a systematic review of the ethnographic literature of 179 cultures across the globe to document human practices dealing with consumption, disposal rituals and practices, and cultural beliefs associated with the human placenta. This ethnographic survey identified only one account of maternal placentophagy, involving an Anglo woman in the U.S.-Mexican border region who consumed her placenta. Additional corroborating accounts in the Chicano ethnographic literature are lacking (Young & Benyshek, 2010).
Maternal Placenta Consumption

Despite the absence of placentophagy in the ethnographic literature, human placenta has been utilized in traditional Chinese medicine for centuries as a medicine for a variety of ailments, but not, traditionally, by a new mother (Bensky, Clavey, and Stöger, 2004; Jiao, 2005). In traditional Chinese medicine, human placenta (zi he che) acts on the liver and kidneys, treats deficiency of the complementary ‘vital energies’ yin and yang, nourishes the blood, and can be used to treat insufficient lactation due to “…exhaustion of qi and blood” (Bensky, Clavey, & Stöger, 2004, p. 806–808). He che da zao wan (placenta great creation pill) is a traditional Chinese medicine formula containing placenta that is said to “…boost essence-blood and supplement lung-kidney” (Jiao, 2005, p. 134). Studies in the academic literature highlight use of human placenta to treat intractable anemia (Hijikata, Kano, & Xi, 2009). Jiao (2005) also reported on a case in which human placenta, along with other Chinese medicinal herbs, was used to treat a woman with aplastic anemia. Human placenta, in combination with traditional Chinese herbs, has also been used to treat infertility (Zhou & Qu, 2009).

The literature contains rare, isolated accounts in the 1900s that proposed benefits of placenta consumption, including decreased risk of infection, anemia, and improved lactation (British Medical Journal, 1902; Hammett, 1918; Hammett, 1919; McNiele, 1918; Moir, 1937; Ober, 1968; Soykova-Pachnerova, Brutar, Golova, and Zvolska, 1954). More recently, Ober (1979) wrote of “…an instance of human consumption of a term placenta following natural childbirth by a member of the counter-culture” in the 1970s. In the 1980s, maternal postpartum placentophagy again began to appear in the literature, with an emphasis on its role in the normal process of birth (Field, 1984; Janszen, 1980).
Prevalence and Demographic Characteristics of Women Choosing Placenta Consumption

Although uncommon in human cultures, there is a small but apparently growing number of women in North America, Europe, and Australia who are choosing placenta consumption. Cremers and Low (2014) conducted a survey via social media to assess the attitudes and knowledge of placentophagy. The survey questioned 215 lay people who were recruited using convenience sampling methods from American and European college psychology classes email lists and via Facebook posts. Respondents were mostly female (78.7%), between the ages of 18 and 22 years old (60.7%), and were white or Caucasian (82.4%). Of the 215 respondents, most (66%) had at least heard of the practice and 3.3% had consumed placenta themselves. Convenience sampling of self-selected participants makes it difficult to draw conclusions about the prevalence of placenta consumption in the general population based on this survey. Cole (2014) estimated based on surveys of her own lactation consultation clients, that perhaps as many as 2,000 women in Portland, Oregon alone engaged in the practice between 2009 and 2014.

Selander et al. (2013) reported on the demographic information of women choosing this novel therapy. Based on their survey of 189 women, those who consumed their placentas were more likely to be Caucasian, lived in the Western U.S., had attended at least some college, and had incomes greater than $50,000 per year. In addition, most of the women surveyed had homebirths, although about one-third birth in hospital settings (Selander et al. 2013). Reports by Beacock (2012) and Burns (2014) corroborate the finding that women who choose placentophagy were more likely to birth in out of hospital settings. Beacock (2012) routinely observed midwives in three birth centers in Oregon questioning mothers if they planned on encapsulating their placenta. Burns (2014) reported on the placenta rituals of 54 Australian
home-birthing women between May and August 2010, of whom five either planned to or had previously consumed their placentas.

While the number of women choosing to consume their placentas is not known, the large number of placenta encapsulation businesses suggests that it is significant. The number of internet searches for the term “placenta encapsulation” in Google has risen 100-fold since 2009, when there were too little data to report (Google Trends, 2015). One certifying organization, Placenta Benefits, lists 142 certified placenta encapsulation specialists worldwide in their provider directory (Selander, 2015c). There are 53 listed placenta encapsulation specialists certified by the Association of Placenta Preparation Arts (2015). Other placenta encapsulation training programs also exist, and the number of placenta encapsulation providers who operate without certification is unknown. In addition, there has been considerable media attention to placenta consumption in recent years. For example, articles on the topic have been written in popular news outlets, ranging from BBC News England (Devlin, 2014), Time (Stein, 2009), New York Magazine (Abrahamian, 2011), and The Baltimore Sun (Karidis, 2014).

**How the Placenta is Prepared**

Most women who consume their placentas choose placenta encapsulation of either raw or cooked placenta as the method of preparation. Approximately 70-80% of women surveyed by Selander et al. (2013) chose this method, and less than 15% of women ate their placenta raw. To encapsulate placental tissue, raw or cooked placenta is cut into strips and dehydrated in a food dehydrator or oven, then ground into a powder and placed into capsules (Burns, 2014; Selander et al. 2013). The placenta can also be eaten immediately postpartum, either by swallowing pieces of raw or frozen placenta whole or by blending the placenta into a drink with juices and
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fruits (Selander et al., 2013). Burns (2014) described a woman who ate her placenta as small frozen pieces, swallowing them like tablets.

There is ample consumer literature about consuming the placenta. Enning (2007) provides recipes for placenta preparation, including cooking, drying, sterilizing, and freezing placental tissue. Recipes for tinctures are also available. Some also place herbs in the capsules along with dried placental tissue or during the steaming process (Enning, 2007).

**INSERT CALLOUT #1**

**Potential Benefits of Placenta Consumption**

Proponents of placental consumption claim increased energy, increased lactation, decreased risk of baby blues and postpartum depression, increased iron stores, decrease postpartum vaginal bleeding, and quicker uterine involution (Selander, 2015a). However, research investigating these effects is scarce. In a phenomenological study, Selander et al. (2013) investigated the motivations and experiences of women who had eaten their placetas. They found that of 189 women, 40% reported that they experienced improved mood, 26% reported increased energy and decreased fatigue, 15% felt they had experienced improved lactation, and 7% reported alleviation of vaginal bleeding and discharge as a result of consuming their placenta (Selander et al. 2013). While this research indicates that there may be some benefits from the perspective of postpartum women, the self-selected nature of participants, small sample size, and inability to control for placebo effects limit the applicability of this research.

One proposed mechanism of action for improved energy and mood (and decreased risk for fatigue and postpartum depression) is that placenta consumption may replenish iron in the
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postpartum woman (Beacock, 2012). Research supporting this claimed benefit is lacking. It is known that the placenta contains iron, which, in theory, could serve as a source of dietary iron in the postpartum woman. Bradley et al. (2004) found that in women who are not anemic, the placenta accumulates ferritin during the end of the third trimester; both fresh and dried placental tissue contains measurable quantities of iron (Drachenberg & Papadimitriou, 1994; Phuapradit et al., 2000; Wong & Sana, 1990). However, it is unclear if the placenta contains enough iron in absorbable forms to have an impact on iron levels in postpartum women. It should be noted that strong evidence is also lacking for traditional treatments of postpartum anemia, including oral iron supplementation (Dodd, Dare, & Middleton, 2012).

The purported benefit of enhanced mood and prevention of postpartum depression has also been attributed to replenishment of B vitamins (Beacock, 2012). Riboflavin, thiamin, and pyroxidine have been identified in human placenta tissue in measurable quantities (Ramsay, Neumann, Clark, & Swendsieid, 1983). However, processing of placenta for ingestion may alter B vitamin concentrations, as cooking foods is known to impact B vitamin content. Even if consumed raw, it is not known whether concentrations in placental tissue are sufficient to have a beneficial effect in postpartum women. Furthermore, the evidence regarding the role of B vitamins in treating or preventing postpartum depression is mixed. Marmion (2000) proposes vitamin B6 as treatment option for postpartum depression and low levels of B vitamins have been shown to play a role in depression in nonpregnant adults and adolescents, but other studies investigating B vitamins and postpartum depression have not found a strong link (Ellsworth-Bowers & Corwin, 2012). Given the uncertainties regarding B vitamin content of processed placenta and the uncertainties regarding the role of B vitamins in treatment of postpartum...
depression, evidence is currently insufficient determine whether B vitamins in placental tissue may result in any benefits to postpartum women.

In addition to improved mood and energy, proponents of placenta consumption also claim that it improves milk supply in breastfeeding women. Selander et al. (2013) found that 15% of women surveyed reported improved lactation as a result of consuming their placentas; however, the self-reported nature of participants and poor reliability of perceived relative improvements in milk supply are significant limitations to these results. Other evidence on this subject is scarce, and consists of articles published in the early and mid-1900s.

The study most often cited as evidence of improved lactation was conducted by Soykova-Pachnerova et al. (1954). This study evaluated the effects of dried placenta on milk production in 210 women with anticipated low milk supply, compared with 27 women who received a placebo treatment consisting of dried beef. Soykova-Pachnerova et al. (1954) reported that 86% of women experienced increases in breast size and milk production. However, there are significant methodological limitations to this study. Dried placenta was consumed by the mothers during the first four days after birth. This is the time period during which lactogenesis II (production of copious milk production) normally occurs (Walker, 2011). The authors stated that they “…of course [made] allowance for the physiologic increase in milk during the first days after delivery” (Soykova-Pachnerova et al., 1954, p. 619), however it is unclear how allowances were made. In addition, predictors of low milk supply included difficulties breastfeeding a previous infant, and flat or unglandular breasts. These are not likely to affect a woman’s ability to successfully breastfeed (Walker, 2011). Differences in group sizes, failure to blind researchers to whether participants received dried placenta or placebo, and the subjective nature of the measures of effect are additional shortcomings of this study. Other human research on this
Maternal Placenta Consumption

The topic is even more dated (e.g., Hammett, 1918) and the Soykova-Pachnerova et al. (1954) study has not been replicated by other researchers. Research on animal models regarding the effect of placentophagy on prolactin levels and lactation is mixed (Blank & Friesen, 1980; Grota & Eik-Nes, 1967).

Although not often cited by proponents of the practice, there is evidence based on rodent models that there may be an analgesic effect from placenta consumption (Kristal et al., 2012).

Kristal and colleagues have identified a substance in placental tissue, placental opioid enhancing factor (POEF), which acts by enhancing opioid-mediated analgesia when ingested by rats (Kristal, 1991; Kristal, Abbott, & Thompson, 1988; Kristal et al., 2012; Kristal, Tarapacki, & Barton, 1990; Kristal, Thompson, & Abbott, 1986; Kristal et al., 1990; Kristal, Thompson, & Grishkat, 1985; Kristal, Thompson, Heller, & Komisaruk, 1986). Pregnancy-mediated analgesia is an endogenous opioid-mediated increase in the maternal pain threshold that occurs in late pregnancy and is particularly strong at birth; ingestion of placenta may further decrease pain by enhancing the effects of the endogenous opioids that are produced during this time period.

While enhancement of opioid-mediated analgesia has been well-documented in rats, there have been no studies conducted on humans to evaluate this phenomenon. The effects of POEF do not appear to be species-specific, and human placenta and amniotic fluid exhibit POEF activity when tested in rats (Abbott et al., 1991). Given its presence across species, it is plausible that the substance may also have similar activity in response to ingestion by humans. It is also important to note that POEF enhances the pain relieving properties of opioids, but not of non-opioid analgesics such as aspirin and nicotine (Kristal, Terapacki, & Barton, 1989), indicating that in the absence of endogenous or exogenous opioid-mediated pain relief, POEF has no effect. Given the lack of response to non-opioid analgesia, the question remains whether or not an analgesic...
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effect may continue into the postpartum period, when most women are consuming their placenta.

Finally, the applicability to humans of these animal research findings is limited. The fact that
most mammals naturally consume their placentas, but humans do not, makes it especially
difficult to apply these findings to humans.

INSERT CALLOUT #2

Potential Risks of Placentophagy

While limited human and animal models suggest there may be some benefit to placenta
consumption, there are also theoretical risks from this practice. Of those women surveyed by
Selander et al. (2013), most women reported no negative side effects from ingesting their
placenta. Of the negative side effects that were reported, the most common were an unpleasant
taste or smell (7%) and headache (4%). Currently, research has not been conducted on potential
harms from placenta consumption. However, theoretical risks may be related to the
prothrombotic and endocrine activity of estrogen, environmental toxins present in placental
tissue, and transmission of bloodborne pathogens.

Women are at a greater risk of a thromboembolic event during pregnancy and the
postpartum period (Hatcher et al., 2011). The placenta is a major source of estrogen during
pregnancy, and exogenous estrogen administration in the form of estrogen-containing
contraceptives is contraindicated in the immediate postpartum period due to the increased risk of
a thromboembolic event (CDC, 2010). If placenta consumption significantly increases estrogen
levels, this could result in an increase in risk for a thromboembolic event. Although the potential
for maternal morbidity is significant, thromboembolism from exogenous estrogen exposure are
rare events, making their investigation difficult to research without large numbers of study
Maternal Placenta Consumption

participants. To date, no such study has been undertaken and it is not known whether this theoretical risk occurs with maternal postpartum placenta consumption.

In addition, estrogen is known to antagonize prolactin via suppression in the hypothalamus. For this reason, some women’s healthcare providers counsel against the use of estrogen-containing contraceptive methods during lactation because it may decrease milk production (Hatcher et al., 2011). Although proponents of maternal postpartum placentophagy claim improvements in lactation, ingestion of potentially active estrogens in the placenta may actually have the opposite effect on milk production via suppression of prolactin production. As discussed above, research on animal models regarding the effect of placentophagy on prolactin levels and lactation is mixed (Blank & Friesen, 1980; Grota & Eik-Nes, 1967) and it is unknown at this time whether placentophagy may improve, inhibit, or have no effect on lactation in postpartum women. However, the widespread practice of maternal placentophagy among mammals suggests that inhibition of lactation via placentophagy is unlikely.

It is not known what concentrations of biologically active hormones are present in placenta tissue after it has been frozen, cooked, dried, or otherwise processed. Estrogen as estradiol is present in measurable quantities in fresh (Khan-Dawood & Dawood, 1984) and dried (Phuapradit et al., 2000) human placental tissue. In a case study reported by Tiwary (1998), premature sexual development was observed in two girls following the use of placenta-containing hair products, indicating that at least some estrogen remained in these products after processing; quantities enough to induce estrogenic effects in these isolated cases. It is reasonable to assume, then, that estrogen is likely still present after processing placenta for consumption, and has the potential to induce thromboembolic effects. Further study is needed to investigate the potential risks to women from bioactive estrogens in ingested placental tissue.
In addition to possible risks related to bioactive hormones, harmful substances including heavy metals including cadmium, lead, and mercury, have been shown to accumulate in placental tissue during pregnancy (Al-Saleha, Shinwari, Mashhour, Mohamed, & Rabah, 2011; Esteban-Vasallo, Aragonés, Pollan, López-Abente, & Perez-Gomez, 2012; Falcon, Vinas, Osuna, & Luna, 2002; Kantola et al., 2000; Mylleen, Pasanen, & Pelkonen, 2005; Reichrtova, Dorociak, & Palkovicova, 1998). These substances are eliminated from the mother’s body with delivery of the placenta, but can be reintroduced via ingestion of placenta tissue. Ingestion of placenta tissue containing heavy metals may increase a mother’s body burden of these toxicants which have the potential to impact maternal, as well as newborn health, as they are transferred to the breast milk in breastfeeding women.

The toxic effects of heavy metals have been well-documented in the scientific literature. Chronic, low-level ingestion of cadmium can lead to kidney damage and bone loss. Animal models also suggest that cadmium can cause anemia, liver disease, and nerve or brain damage. Cadmium has been identified as a known human carcinogen by the U.S. Department of Health and Human Services (DHHS) and the International Agency for Research on Cancer (IARC). The U.S. Environmental Protection Agency (EPA) classifies cadmium as a probable human carcinogen (U.S. Department of Health and Human Services, Agency for Toxic Substance and Disease Registry [ATSDR], 2012).

The toxic effects of lead occur primarily in the nervous system, causing decreased cognitive performance, muscle weakness, and anemia. Lead may also be a carcinogen based on studies on animal models and limited evidence from studies in humans. The EPA and IARC both classify lead as a probable human carcinogen (ATSDR, 2007).
Mercury toxicity primarily affects the brain and kidneys. Central nervous system effects can include changes in personality, tremors, vision changes, deafness, problems with muscle coordination, loss of sensation, and memory problems. The DHHS and IARC have not classified mercury as to its human carcinogenicity, but the EPA has identified mercury chloride and methylmercury as possible human carcinogens (ATSDR, 1999).

There are no existing studies that evaluate the risk for toxicity from ingestion of placental tissue containing heavy metals or other contaminants. Esteban-Vasallo et al. (2012) conducted a systematic review of cadmium, lead, and mercury concentrations in human placental tissue. Their review included 73 studies from 1976 to 2011, involving heterogeneous populations in the U.S., Western Europe, India, China, Eastern Europe, and South America. They found variable concentrations of the heavy metals across diverse populations with varying exposures to environmental sources of these contaminants.

To evaluate the potential for toxic effects from placenta consumption, mean concentrations of cadmium, lead, and mercury from these studies can be compared to existing human health standards for heavy metals in meat. Table 1 depicts measured concentrations of cadmium, lead, and mercury in human placental tissue (Esteban-Vasallo et al., 2012) compared with European Union regulatory limits for these metals in beef, pork, poultry, and fish established by the European Commission (2006). The U.S. has not established maximum allowable levels of heavy metals in meat. As shown in Table 1, mean concentrations of some heavy metals in human placentas approach or exceed existing human health standards, although this comparison should be interpreted with caution given the heterogeneity of the populations sampled and dated nature of some of the studies included in the review. Of note, tetraethyl lead in the environment was much more ubiquitous in the 1970s (when one of the studies in the U.S.
was conducted) due to historical use of leaded gasoline. Leaded gasoline is no longer in use in
the U.S., and lead concentrations in placental tissue may be much lower than those reported by
Esteban-Vasallo et al. (2012). Furthermore, the European standards for heavy metals in meat
and fish are based on both health risks as well as levels that are “…reasonably achievable by
following good agricultural, fishery and manufacturing practices” (European Commission,
2006). They can be interpreted as levels below which risks are unlikely, but concentrations in
excess of these values do not necessarily pose health risks.

Despite these uncertainties about the potential for toxicity, it is possible that heavy metals
may be present in placental tissue at concentrations that could have health impacts. It is
important for women who are considering placenta consumption to be informed of the risk of
exposure, especially if they may be exposed to high concentrations of these contaminants due to
proximity to sources of pollutants, such as industrial facilities or air pollution in urban areas.
Some placenta encapsulation specialists advise women who smoke that they may not want to
consume their placenta, as cigarette smoke is a significant source of some of these contaminants
(e.g., Selander, 2015b). Additional studies are needed to characterize concentrations of heavy
metals and other contaminants in the placentas of women who are choosing placenta
consumption.

INSERT CALLOUT #3

Policies Regarding Placentophagy

Given the recent rise in the number of women choosing to consume their placentas, there
is a need for governments and healthcare institutions to develop policies regarding placenta
consumption. Placentophagy has recently received attention from food safety regulators in
Europe, where placenta preparers face a rule change by the European Food Safety Authority that categorizes human placenta as a “novel food,” essentially banning the sale of placenta encapsulation services beginning in July 2014 (Measure, 2014).

There are currently no state or federal regulations about consumption of placenta. Currently, there are also few regulations that address food safety and handling of placenta for individuals who offer placenta preparation services. In New York, people working with human tissue including placentas must be licensed, but other states lack such requirements (McLaughlin, 2011). Some placenta preparer websites state that as certified placenta encapsulation specialists, they adhere to federal safety guidelines and are trained in food safety handling (e.g., Selander, 2015c). However, it is important to note that certification is not currently required or accredited by any government.

State and federal laws regarding handling and disposal of infectious waste may also impact women who choose placenta consumption. Traditionally, the placenta has been regarded as medical waste. The Medical Waste Tracking Act of 1988 defines medical waste as including, among other items “... pathological waste, including tissues, organs, and body parts that are removed during surgery or autopsy” (Medical Waste Tracking Act, 1988). Laws regulating infectious waste in Hawaii and Oregon explicitly allows mothers to take their placentas home from the hospital (LaGanga, 2013; Lauer, 2006; Hawaii Administrative Code, 2007; Oregon Administrative Code, 2015). Infectious waste handling and disposal laws in other states neither allow nor prohibit women from taking their placentas home from the hospital (LaGanga, 2013).

To address issues of liability and to comply with laws regulating the handling and disposal of infectious waste, hospitals have developed policies for release of the placenta to families who wish to take it home. Baergen, Harshwardhan, and Heller (2013) surveyed thirty-
three practicing perinatal pathologists in the U.S. and Canada to investigate policies in place for
the release of placentas from hospitals. Most (66%) respondents stated that their hospitals allow
release of placentas, but 11% of those surveyed reported that their hospitals specifically prevent
release. Baergen, Harshwardhan, and Heller (2013) recommend the following elements be
incorporated into written policies for release of the placenta: (a) information about the value of
pathologic examination and preclusion of subsequent pathologic evaluation once it has been
released; (b) a statement that acknowledges cultural practices involving the placenta but neither
endorses nor condemns such practices; and (c) a statement that cautions families about safe
handling and disposal of human tissue and potential toxic effects of fixatives if they have been
used.

Conclusion and Recommendations

Proponents of placentophagy claim physical and mental health benefits, including
improved mood, prevention of postpartum depression, increased energy, and improved milk
supply (Selander, 2015a), but there is a lack of strong evidence to substantiate many of these
reports. Some women who have consumed their placentas report improved mood, decreased
fatigue, improved lactation, and decreased postpartum bleeding (Selander et al., 2013). Based on
research on animal models, there may be an analgesic effect from ingesting placenta (Kristal et
al., 2012). Some argue that placenta consumption replenishes nutrients, such as iron and B
vitamins, thus improving symptoms of fatigue and depressed mood (Beackock, 2012). To date,
the risks of placenta ingestion have focused on exposure to contaminants that are known to
accumulate in the placenta, including heavy metals such as cadmium, lead, and mercury (Young
et al., 2012). Other risks may include a possible increase in the risk of thromboembolic events
due to potentially active estrogenic compounds in placental tissue.
Scientific evidence to investigate benefits and risks of placentophagy is in its infancy. There is a need for placebo-controlled, double-blinded trials on the benefits and risks of consumption of placenta capsules, which is the most common form of placenta consumption. Research priorities should include studies that investigate mechanisms of action for proposed benefits and potential risks, with sample sizes large enough to detect rare events such as thromboembolism. Given the apparent rise in prevalence of placenta consumption among postpartum women, obstetric nurses and other women’s healthcare providers should be aware of the practice, be informed on the evidence regarding the potential benefits and risks, know how placenta is being prepared and consumed, and understand the policies and regulations that impact families who choose this option. They should be prepared to discuss potential benefits such as pain relief, improved mood, or increased energy; and possible risks, including contamination with heavy metals, and a theoretical risk of thromboembolism. This knowledge will help obstetric nurses to better counsel women so they can make informed decisions about this apparently growing novel therapy being used by postpartum women.


Maternal Placenta Consumption


Maternal Placenta Consumption


Maternal Placenta Consumption


Table 1

*Heavy Metal Concentrations in Human Placenta Compared to European Union Maximum Levels (mcg/g)*

<table>
<thead>
<tr>
<th>Contaminant</th>
<th>Mean Placenta Concentration (range)</th>
<th>Maximum Level in Meat / Seafood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium</td>
<td>0.0012 - 0.053</td>
<td>0.05</td>
</tr>
<tr>
<td>Lead</td>
<td>0.00118 - 0.5</td>
<td>0.10</td>
</tr>
<tr>
<td>Mercury</td>
<td>0 - 0.09</td>
<td>0.5</td>
</tr>
</tbody>
</table>

*Note:*
Range of mean placenta concentrations from Esteban-Vasallo et al. (2012). Maximum Levels are maximum allowable concentrations in beef, pork, and poultry (cadmium and lead) and fish (mercury) established by the European Commission (2006). Food standards for heavy metals in meat have not been established in the U.S.
Notification: 5th Annual UVU Nursing Research Conference

Francine Jensen [Francine.Jensen@uvu.edu]

Sent: Thursday, February 05, 2015 2:32 PM
To: Emily Hart Hayes

Dear Ms. Hayes,

I am pleased to inform you that your abstract “Maternal Postpartum Placenta consumption: A Complementary and Alternative Therapy Used by Women during the Postpartum Period” was accepted for presentation at the 5th Annual UVU Nursing Research Conference to be held 11 March 2015, in the Grande Ballroom of the Sorenson Center on UVU Campus.

Please return an email to this address confirming your acceptance to present at this conference.

You submitted biographical information with your abstract. If you have anything further you would like included, please send that to me as soon as possible.

Attached you will find information for arriving and checking in, along with a map of UVU for parking purposes.

Thank you so much for your interest in presenting at this conference. We look forward to your presentation to our nursing students, faculty, and distinguished visitors.

Do not hesitate to contact me with further questions.

Francine Jensen
Conference Presenter Coordinator

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Maternal Placenta Consumption: A Novel Therapy Used by Postpartum Women

Emily Hart Hayes, RN, BSN, MS, DNP student
Debra Penney, CNM, MPH, PhD
University of Utah, College of Nursing

Background: Maternal Placenta Consumption

- **Placentophagy**: The practice of consuming the placenta during the postpartum period
- A popular method is **encapsulation**
- Proponents claim **physical and mental health benefits**
- Lack of scientifically rigorous evidence to substantiate these reports

[Bearcock, 2012; Cnemar & Low, 2014; Selinder, Cantor Young, & Banyashek, 2013]
Placentophagy in Nonhuman Mammals

- Nearly universal behavior among mammalian species
- Herbivorous and carnivorous

Why?
- Clean nest area
- Replenish nutrients & hormones
- Maternal hunger
- Temporary carnivorous behavior (Kristal et al., 2012).

Placentophagy in Human Cultures

- Conspicuously absent in human cultures
- Systematic review of ethnographic literature
  - 179 cultures worldwide documenting placenta rituals
  - Many placenta rituals involving disposal rituals & practices, and cultural beliefs
  - Only 1 account of maternal placentophagy
- Rare, isolated accounts in the 1900s
  - Claims of decreased risk for maternal infection, anemia, improved lactation
- “...an instance of human consumption of a term placenta following natural childbirth by a member of the counter-culture” (Ober, 1979)

(Kristal et al., 2012; Ober, 1979; Young & Bensyshek, 2010)
Maternal Placenta Consumption

Traditional Chinese Medicine

- **Zi he che** (human placenta) acts on the liver and kidneys, treats deficiencies of the complementary "vital energies" yin and yang, nourishes blood
- Treat insufficient lactation from "...exhaustion of qi and blood"
- **Scientific literature**:
  - Intractable anemia
  - Infertility


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Prevalence & Demographic Characteristics

- **Women choosing placenta consumption were more likely to be...**
  - White
  - Western US
  - College educated
  - Income >$50,000/yr
  - Homebirth

(Selander, et al., 2013)

- **Social Media Survey (Cremers & Low, 2014):**
  - 215 lay people, convenience sampling, self-selected participants
  - 3.3% reported they consumed their placenta
  - 66% had heard of placentophagy

- **Based on a Portland, OR lactation consultation practice:**
  - Estimated 2,000 women in Portland, OR consumed their placentas between 2009-2014.

(Cole, 2014; Cremers & Low, 2014; Selander et al., 2013)
Placenta encapsulation specialists

- Placenta Benefits lists 142 certified placenta encapsulation specialists worldwide
- 53 specialists certified by the Association of Placenta Preparation Arts
- Unknown number of encapsulation specialists who are not certified

(Association of Placenta Preparation Arts, 2013; Google Trends, 2013; Salander, 2013)

“Afterbirth: It’s What’s For Dinner”

- Articles on placentophagy in population news outlets:
  - BBC News England (Devlin, 2014)
  - TIME (Stein, 2009)
  - New York Magazine (Abrahamian, 2011)
  - The Baltimore Sun (Karidis, 2014).
How is Placenta Prepared?

- Most (70-80%) choose encapsulation of raw or cooked placenta
- Can swallow pieces of raw or frozen placenta like tablets, whole, or blended into a drink with juices and fruits

KEEP CALM AND
Drink a placenta Smoothie

(Burns, 2014; Ermeling, 2007; Selander et al., 2013)
Evidence on the Benefits of Placentophagy

- Phenomenological study
- 189 women
- Self-selected participants
- Self-reported benefits
- No placebo

Proposed Mechanisms of Action

- Replenished iron stores increases energy?
  - Placental tissue contains iron
  - No research on placenta consumption and iron

- Not enough evidence:
  - Is there enough iron?
  - Is it absorbable?
  - Is it better than oral iron supplementation?

(Blacklock, 2012; Bradley et al., 2004; Drenchenberg & Papadimitriou, 1994; Wong & Sane, 1990)
Proposed Mechanisms of Action

- B Vitamins reduces baby blues and postpartum depression?
  - Raw placental tissue contains riboflavin, thiamin, and pyridoxine
  - Processing may reduce bioavailability
- Evidence on postpartum depression and B vitamins is mixed
- Not enough evidence

(Beacco, 2012; Ellsworth-Bowe & Corwin, 2012; Ramsay, Neumann, Classical, & Swendseid, 1988)

Improved Milk Supply?

- Studies from the mid-1900s
- Most cited by Sojkova-Pachnerova et al. (1954)
  - 210 women (compared to 27 placebo)
  - Anticipated low milk supply
  - 80% increased breast size and milk production
- Methodological limitations
  - Study occurred in 1 st four days after birth, but lactogenesis II normally occurs in the same time period
  - Differences in group sizes
  - No blinding of researchers
  - Subjective measures of effect
  - Study has never been replicated

(Soykova-Pachnerova et al., 1954; Wallas, 2011)
Pain Relief?

- Rodent models, no studies on humans
- Placental opioid enhancing factor (POEF)
- Enhances endogenous opioids produced by the mother during labor and birth
- Does not work on non-opioid pain relief
- Not species specific

Uncertainties:
- Might effects may extend into postpartum period?
- Applicability of animal research to humans?

What about risks?
Thromboembolism?

- Increased risk of blood clots in postpartum period. Exogenous estrogens from placenta could further increase that risk.
- Uncertainties
  - No research on estrogens from placenta and risk of VTE.
  - Unknown quantities of biologically active estrogens remaining after processing.
  - VTE is a rare event; studies with large numbers of participants are needed.

Milk production?

- Estrogen antagonizes prolactin at the hypothalamus.
- Theoretical risk of decreased milk production.
- Uncertainties?
  - No human studies.
  - Animal research on effects of placentalophagy on prolactin levels and lactation is mixed.
  - Widespread placentalophagy in nonhuman mammals suggests inhibition is unlikely.

(CDC, 2005; Hatcher et al., 2011)
Estrogen in Placental Tissue

- Is there enough biological active estrogen in placentas processed for consumption to make a difference?
  - Estradiol present in measurable quantities in fresh and dried human placenta
  - Case study of premature sexual development in girls who used placenta-containing shampoo
  - Not enough evidence and more study is needed

(Ellean-Dawood & Dawood, 1986; Phuapradit, 2000; Tiwary, 1998)

Heavy Metals Contamination

- Heavy metals accumulate in placental tissue
  - Cadmium, lead, mercury
  - Normally eliminated from mother’s body with delivery of placenta
  - Women (and nursing infants) with increased exposure via smoking, industrial pollution, may be at increased risk for toxicity

(Estebaran-Vasallo, Aragonés, Pollan, López-Arribas, & Perez-Gomez, 2012)
Uncertainties with Heavy Metals in Placenta

- Heavy metal concentrations reported by Esteban-Vasallo et al. (2012):
  - Heterogeneous populations worldwide
  - Studies from 1976-2011
  - Tetraethyl lead in the environment was elevated in 1970s
  - Current concentrations of lead and other heavy metals may be lower
- No standards exist for heavy metals in meat in the U.S.
- European standards are based on both toxicological and levels that are achievable (European Commission, 2006).
  - Concentrations < standards mean risks are unlikely, but
  - Concentrations > standards are not an absolute indication of toxicity
Policies & Regulations

- **Food safety**
  - Some training programs state they adhere to federal safety guidelines
  - NY requires licensing if handling human tissue
- **Infectious waste handling & disposal**
  - The Medical Waste Tracking Act of 1988: “...pathological waste, including tissues, organs, and body parts that are removed during surgery or autopsy.”
  - Oregon and Hawaii have exemptions for release of placenta from hospitals (LaGange, 2013; Lauer, 2006; Hawaii Administrative Code, 2007; Oregon Administrative Code, 2013).
  - Other states neither allow nor prohibit release of placenta from hospitals (LaGange, 2013).

Hospital Policies

- Hospitals are potentially liable if they lack clear written policies
- Baergen, Harshwardhan, and Heller (2013) surveyed 33 hospitals
  - 66% allowed placenta release, 11% specifically prevented release
- Recommendation that policies and forms:
  - Includes information about pathologic examination and preclusion of pathologic evaluation once the placenta has been released
  - Acknowledges cultural practices but neither endorses nor condemns them
  - Cautions families about safe handling and disposal of human tissue and potential toxic effects of fixatives if they have been used
Summary and Conclusions

- Proponents of maternal placenta consumption claim mental and physical health benefits – improved mood, energy, lactation.
- There is a lack of scientifically rigorous evidence
- Some women report improved mood, decreased fatigue, improved lactation, decrease postpartum bleeding (Selander et al., 2013).
- Animal models indicate a possible analgesic effect (Kristal et al., 2012)
- Risks may include thromboembolism due to exogenous estrogen and toxicity from heavy metals accumulated in placental tissue
- Policies focus on infectious waste handling and disposal, although most states remain silent on specific exemptions for release of placenta from hospitals

Recommendations

- More research is needed
  - Double-blind, placebo-controlled trials of placenta capsules
  - Sample sizes large enough to detect rare but dangerous events including thromboembolism
- Obstetric nurses and nurse-midwives should be able to counsel women considering this novel therapy regarding:
  - The evidence on potential benefits - pain relief, improved mood, or increased energy; and possible risks - contamination with heavy metals, and a theoretical risk of thromboembolism.
  - How placenta is prepared and consumed, and who prepares it
  - What are the policies and regulations that impact families who choose this option
And then she told me she ate her placenta.
Maternal Placenta Consumption

Appendix F

Final DNP Project Defense Poster