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Perspectives from Patients and Healthcare Providers on the Practice of Maternal Placentophagy

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Abstract

Purpose: Placentophagy (maternal consumption of the placenta) has become increasingly prevalent in the past decade among women seeking to promote health and healing during the postpartum period. The purpose of this study was to assess patient and provider familiarity with and attitudes toward placentophagy, as well as patients' willingness to try placentophagy.

Methods: Two cross-sectional surveys with questions regarding placentophagy practice were distributed to healthcare providers and patients. The provider survey was distributed via email listservers to international perinatal professional organizations and to obstetrics and gynecology, nurse midwifery, family medicine, and psychiatry departments at three urban hospitals. Patient surveys were administered in person at an urban hospital in Chicago, Illinois.

Results: Approximately two thirds (66%; $n = 100$) of patients and most (89%; $n = 161$) of providers were familiar with placentophagy. Patients with a history of a self-reported mental health disorder were more likely to be willing to consider placentophagy and to believe that healthcare providers should discuss it with their patients.

Conclusions: Most providers and patients have heard of placentophagy but are unsure of its benefits and/or risks. Further research examining the potential therapeutic efficacy and/or risks of placentophagy is needed.

Keywords: postpartum, mental health, women's health, supplements

Introduction

Placentophagy refers to the act of consuming the placenta after childbirth. The practice of maternal human placentophagy has recently received substantial attention in the media,[1–4] highlighting an increase in the use of complementary medicine and supplements for postnatal problems.[5–7] The placenta can be consumed raw, cooked, or in an encapsulated form. Advocates of placentophagy suggest that it offers a wide array of postpartum benefits, including hormonal balancing, pain moderation, nutritional advantages (such as iron supplementation), increased lactation, improved energy, and prevention of postpartum depression.[8–10]

The placenta is a vascular organ that begins to form in the uterus shortly after conception. During pregnancy, it acts as a conduit between the mother and fetus to provide oxygen to the baby, deliver nutrients, and filter out potentially harmful substances. The placenta is also a major source of steroid and

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peptide hormones that are critical to the maintenance of pregnancy, timing of birth, and fetal development.[11] Many mammals consume the raw placenta immediately after delivery.[12,13] Although an opioid effect from placental consumption has been shown to enhance endogenous pain relief in rats at parturition,[14,15] limited evidence is available to support the benefits and/or risks of the practice in humans.[16–18]

Ritualistic ceremonies surrounding the placenta are prevalent across multiple cultures.[19–22] Chinese and Egyptian historical accounts describe the placenta as having medicinal properties, used for healing and fatigue.[23,24] However, records of maternal consumption of the placenta specifically for postpartum benefits are limited.[22,23] Today, anecdotal reports from women who have engaged in placentophagy span from favorable[25] to strongly adverse.[26]

Prevalence of and attitudes toward placentophagy have been reported in two previous studies. Cremers et al. (2014)[17] conducted an online survey with 216 college students and found that most of the sample was familiar with placentophagy and a small proportion had tried it. Selander et al. (2013)[9] surveyed 189 women who had consumed the placenta in raw or encapsulated form after the birth of one or more of their children. Most women in the study reported benefits and believed consuming the placenta was a positive experience. Approximately half of the women in the sample had experienced symptoms of depression or anxiety after a previous pregnancy (63% reported self-diagnosed mood disorders, while 37% were diagnosed by a professional),[9] which may have motivated them to try placentophagy as a preventive method for postpartum mood management. The postpartum period can be a challenging time for women because of hormonal fluctuations, role changes, and increased stress.[27] Recent statistics show that up to one in five women experience postpartum depression.[28] Providers are often hesitant to prescribe medication to breast-feeding women because of concerns regarding untoward effects on the infant,[29] and pregnant and postpartum women are more likely to prefer nonpharmacologic treatment methods for depression relapse/prevention.[30] To some, consuming the placenta may appeal as a seemingly more natural remedy to address potential depressive symptoms postpartum.

The purpose of this study was to survey patients and providers regarding their familiarity with and interest in placentophagy and to identify perceived benefits and/or risks associated with the practice. Providers were included in the survey to ascertain professionals' knowledge of existing research to support or discourage placentophagy. Ultimately, if patients are interested in pursuing placentophagy as a supplement or alternative to postpartum (mental) health treatment, it is important that providers be aware of this and are able to provide empirically informed advice about the practice.

Materials and Methods

Study design

The study team created two cross-sectional surveys designed to assess patients' and providers' familiarity with and attitudes toward human maternal placentophagy. Electronic consent was obtained from all healthcare providers, and verbal consent was obtained from all patients. Consent forms, surveys, and all study procedures were approved by the Northwestern University Institutional Review Board.

Surveys

The patient survey consisted of 36 questions in multiple-choice format and several free response items. The survey was divided into five key sections: (1) demographic information, (2) knowledge of placentophagy, (3) attitudes toward placentophagy compared with traditional medical treatments (including willingness to try placentophagy), (4) personal use of placentophagy, and (5) personal mental health history, as measured by patients' self-reported responses to survey items (see Supplementary Appendix I for complete list of survey questions [Supplementary materials are available online at www.liebertpub.com/acm]).

The provider survey contained 39 questions, all of which were multiple-choice with optional free text boxes for additional thoughts/concerns. The provider survey asked respondents to indicate their profession, their familiarity with and beliefs about potential risks and benefits of placentophagy, and how frequently they discussed it with patients (see Appendix II for complete list of survey questions). Identifying information was not required on either survey.

Recruitment and procedures

Patients were recruited between June 2014 and January 2015 from Prentice Women's Hospital and the Asher Center for the Study and Treatment of Depressive Disorders, a clinic at Northwestern Hospital specializing in women's perinatal mental health. Patients were eligible for the study if they were female, 18 years old or older, and capable of giving informed consent. A research assistant approached patients in the waiting room of the mental health clinic and in the postpartum unit Prentice Women's Hospital. Interested patients provided verbal consent and were then given the paper survey to complete.

Healthcare specialists were eligible to complete the provider survey if they cared for perinatal women. Surveys were distributed via email to providers at Northwestern Memorial Hospital, University of Colorado Hospital, and Denver Health Medical Center. To reach a large number of providers, surveys were also sent to all members of two professional organizations. The North American Society for Psychosocial Obstetrics and Gynecology email listserver was chosen because of its expansive membership, including professionals who regularly care for perinatal women. Similarly, the Marcé International Society listserver was selected to reach international perinatal providers. Written permission from both of the organizations was obtained before recruitment. Online recruitment occurred between June 2014 and May 2015.

Statistical analyses

Descriptive statistics were calculated to summarize sample demographics and all survey question data. We compared provider responses across five primary occupation types (mental health specialists [psychologists, psychiatrists, and social workers], nurses, midwives, obstetricians/gynecologist and family medicine physicians, and other) by using chi-squared tests or Fisher exact tests when an individual expected cell count was less than five. Provider response distributions across different locations were similarly analyzed by using chi-squared or Fisher exact tests. Patient

responses were compared between participants with and without any history of mental illness diagnoses and by key demographic variables (income, education, and race) by using chi-squared or Fisher exact tests. All statistical tests were two sided, and a p-value less than 0.05 was considered to indicate a statistically significant difference. Analyses were conducted by using R version 3.1.1.[31]

Results

Patient sample characteristics and demographics

Table 1 presents patient sample characteristics and demographics. Participants ($n=153$) identified predominantly as white (66%), married (76%), in their early thirties (mean age, 32.7 years), and having completed a bachelor's degree or higher (78%). Most (84%; $n=124$) had been pregnant at least once, and 34% ($n=40$) of participants who responded reported history of a postpartum mood disorder.

Patient survey responses

Table 2 presents key participant responses stratified by demographic variables. Approximately two thirds of patients (66%; $n=100$) had heard about placentophagy, primarily through the media (43%; $n=46$), and 20% ($n=22$) of the sample knew someone who had tried it. Pregnant patients were no more likely to have heard of placentophagy than nonpregnant patients. Participants with a bachelor's degree or higher were significantly more likely to have heard of placentophagy ($p=0.002$), know people who had engaged in placentophagy ($p=0.001$), and to say the benefits of placentophagy outweighed the risks ($p=0.016$). Additionally, white participants and those with household income greater than $100,000 per year were more likely to have heard of placentophagy ($p<0.001$) and more willing to try it in place of prescription medications.

Roughly one quarter (26%; $n=28$) of respondents believed there were benefits to placentophagy, but the majority (70%; $n=75$) said that they were unsure. The most commonly cited motivations listed for engaging in placentophagy were general health benefits (41%; $n=17$) and prevention of postpartum depression (22%; $n=9$). Other listed benefits included improvement of postpartum healing, increased energy, and increased lactation.

Women who reported previous postpartum mental health complications ($n=38$) were significantly more likely to report a willingness to consider placentophagy ($p=0.044$) and more likely to say they would try placentophagy instead of prescription medication ($p=0.003$). See Table 3 for patient responses stratified by history of mental illness.

Provider sample characteristics and demographics

Providers ($n=185$) came primarily from Denver or Aurora, Colorado (30%; $n=55$), and Chicago, Illinois (40%; $n=75$). Providers reported a wide range of occupations (mental health specialists, obstetricians, family practitioners, nurses, and midwives). The average length of time providers had spent practicing in their respective fields was 3 years. Table 4 displays provider characteristics and demographics.

Table 1. Patient Characteristics

Characteristic	*Value*
Mean age ± SD (yr)	32.7 ± 6.0
Race ($n=152$)	
White	100 (65.8)
Black	24 (15.8)
Asian	9 (5.9)
Other or prefer not to answer	19 (12.5)
Ethnicity ($n=153$)	
Hispanic	23 (15)
Not Hispanic	128 (83.7)
Prefer not to answer	2 (1.3)
Relationship status ($n=152$)	
Single	14 (9.2)
Married	116 (76.3)
In a relationship	17 (11.2)
Divorced	3 (2)
Other	2 (1.4)
Education ($n=152$)	
High school	13 (8.5)
Some college	17 (11.2)
Bachelor's degree	58 (38.2)
Post–graduate school	60 (39.5)
Other	4 (2.7)
Annual income ($n=149$)	
<$50,000	38 (25.5)
$50,000–$99,999	27 (18.2)
$100,000–$149,999	34 (22.8)
≥$150,000	50 (33.5)
History of pregnancy ($n=148$)	
Have been pregnant	124 (83.8)
Have never been pregnant	24 (16.2)
Self-reported history of postpartum mood disorder ($n=118$)[a]	
Any mood disorder	40 (33.9)
Baby blues	27 (22.8)
Depression	23 (19.5)
Mania or hypomania	2 (1.7)
Anxiety	20 (16.9)
PTSD	9 (7.6)
Psychosis	1 (.9)
Other	1 (.9)
None of the above	73 (61.9)
Prefer not to answer	5 (4.2)
Heard of Placentophagy ($n=151$)	
Yes	100 (66.2)
No	51 (33.8)
Where did you learn about placentophagy? ($n=107$)	
Provider	7 (6.6)
Acquaintance	24 (22.4)
Media	46 (43.0)
Other/don't remember	30 (28)
Do you know someone who has engaged in placentophagy? ($n=108$)	
Yes	22 (20.4)
No	86 (79.6)

Unless otherwise noted, values are expressed as number (percentage). Percentages were calculated on the basis of the number of participants who responded to each individual question.

[a]Participants were able to select more than one answer choice.

SD, standard deviation; PTSD, post-traumatic stress disorder.

TABLE 2. PATIENT RESPONSES STRATIFIED BY CHARACTERISTICS

Characteristic	*Has heard of placentophagy*		*Would consider placentophagy*		*Would try placenta vs. prescription medication*		*Should HCPs discuss placentophagy with patients?*			
	n (*% yes*)	*p*-Value	n (*% yes*)	*p*-Value	n (*% yes*)	*p*-Value	n (*% yes*)	n (*% no*)	n (*% maybe/not sure*)	*p*-Value
Income		<0.001		0.430		0.009				0.001
<$100,000 ($n=65$)	26 (40.6)		8 (12.9)		22 (38.6)		27 (45.0)	12 (20.0)	21 (35.0)	
≥$100,000 ($n=84$)	72 (85.7)		11 (13.3)		48 (61.5)		25 (31.2)	4 (5.0)	51 (63.7)	
Education		0.002		0.068		0.210				0.026
Associate's degree or less ($n=33$)	13 (39.4)		3 (9.4)		10 (35.7)		12 (41.4)	8 (27.6)	9 (31.0)	
Bachelor's degree ($n=58$)	42 (72.4)		9 (16.1)		27 (54.0)		19 (35.2)	6 (11.1)	29 (53.7)	
Graduate degree or higher ($n=60$)	44 (74.6)		7 (11.7)		33 (55.0)		21 (35.6)	3 (5.1)	35 (59.3)	
Race		<0.001		0.232		0.020				0.087
Black ($n=24$)	10 (41.7)		2 (8.3)		7 (30.4)		7 (29.2)	7 (29.2)	10 (41.7)	
White ($n=100$)	76 (76.8)		16 (16.5)		53 (58.9)		35 (37.2)	7 (7.4)	52 (55.3)	
Other ($n=25$)	11 (45.8)		1 (4.2)		10 (36.4)		9 (40.9)	3 (13.6)	10 (45.5)	
History of pregnancy		0.642		0.173		0.812				0.610
Have been pregnant ($n=124$)	83 (67.5)		18 (14.8)		59 (51.3)		42 (35.3)	16 (13.4)	61 (51.3)	
Have never been pregnant ($n=24$)	15 (62.5)		1 (4.3)		11 (55.0)		9 (40.9)	1 (4.5)	12 (54.5)	

The *p*-values correspond to the Fisher exact test.
HCP, healthcare provider.

Provider survey responses

The majority of providers (88%; $n=161$) had heard of placentophagy before completing the survey. Most providers who said they knew how their patients' placenta was prepared ($n=150$) reported that it was in encapsulated form (n=94, 63%). A smaller number (37%; $n=56$) reported that it was consumed as tissue or by other means. When asked whether they were in favor of placentophagy, most providers answered ''not in favor, not against'' (40%; $n=69$) or ''I don't know'' (24%; $n=42$). Providers' responses in the ''additional comments'' section of the survey ranged from highly positive to highly negative. One individual asserted that ''It [placentophagy] should be the standard of care for women at high risk for PP [postpartum] depression,'' while another stated, ''This is human remains… It is a blood product and all the regulations covering blood products should apply to placenta.'' Most commonly, providers indicated that they would like more research done to support the benefits and/or risks of the practice.

Table 5 presents provider responses stratified by location. Because of the large number of respondents from the Chicago and Denver areas, location was divided into three categories (Chicago, Denver, other) for analysis. Location and occupation type significantly predicted providers' responses toward placentophagy. Providers surveyed from the Denver area were more likely to be in favor of placentophagy and to have conversations with patients regarding the care of the placenta postpartum. Chi-squared analyses revealed that location was significantly associated with occupation type ($p<0.001$). Because of the large number of zero cell counts for many categories of responses, the stratified test was not feasible in this instance. However, when analyses were stratified by location, provider type remained significantly associated with likelihood of recommendation and being in favor of placentophagy for both Chicago and Denver/Aurora areas. In general, obstetricians/gynecologists tended to be less in favor of this practice and less likely to recommend it to patients, while midwives were more likely than other providers to support placentophagy. Table 6 presents provider responses stratified by occupation type.

Discussion

The aim of this study was to characterize healthcare providers' and women's attitudes toward human maternal placentophagy. Unlike other studies to date, this study included both patients and providers, allowing us to capture professionals' knowledge of placentophagy and what they are recommending to patients. Patients' perception of their clinicians' openness and familiarity with alternative treatment modalities influences their willingness to disclose their use of such treatments, which is essential for comprehensive care.[32,33] Results from the provider survey suggest that the popularity of placentophagy varies by region and occupation type. One provider noted that hospital policies for handling the placenta were common in the San Francisco area but were relatively unheard of at her practice in the Midwest. In the literature, the largest survey study of women who had practiced placentophagy came from an encapsulation service company in Nevada, and a large percentage (37.6%) of participants came from the West.[9] The data from the current study indicate that providers from the Denver area were

Table 3. Patient Responses Stratified by Any History of Mental Illness Diagnoses

History of mental illness diagnosis	*No history* (n = *83*)	*History* (n = *38*)	p-*Value*
Has heard of placentophagy (yes)	47 (56.6)	30 (81.1)	0.013
Would consider placentophagy			0.044
Yes	6 (7.4)	9 (24.3)	
No	58 (71.6)	23 (62.2)	
Have not decided	17 (21.0)	5 (13.5)	
Would try placenta vs. prescription medication (yes)	31 (39.2)	23 (72.9)	0.003
Knows someone who consumed placenta (yes)	10 (18.9)	7 (21.9)	0.784
Believes there are benefits (yes)	11 (20.0)	11 (35.5)	0.130
Believes there are risks (yes)	5 (9.3)	2 (6.5)	1.000
Would try placenta vs. OTC supplement (yes)	38 (48.1)	24 (75.0)	0.012
Believes healthcare providers should discuss placentophagy with patients			0.016
Yes	23 (29.5)	21 (58.3)	
No	13 (16.7)	3 (8.3)	
Maybe/not sure	42 (53.8)	12 (33.3)	

Values are number (percentage). The *p*-values correspond to the Fisher exact test.
OTC, over-the-counter.

more familiar with placentophagy and more frequently discussed it with their patients. However, because location was significantly associated with occupation type (e.g., more midwives responded from the Denver area), it is not possible to discern whether location or provider type was a driving factor. It is difficult to discern from these analyses the nature of the relationship(s) and/or any causal pathways between occupation and provider type. Future studies may want to incorporate modeling or stratification to control for confounders.

The findings also suggest that sociodemographic factors play a role in patients' familiarity with and attitudes toward placentophagy. Participants with higher household income (>$100,000) and a bachelor's degree or higher showed a greater willingness to try placentophagy. This is consistent with previous studies[34] indicating that individuals with higher socioeconomic status and education are more likely to have access to and to try integrative medical treatment compared to individuals with lower socioeconomic status/education. Alternative treatments, such as placentophagy, are often accompanied by increased out-of-pocket expenses that are not covered by health insurance.[35] The cost of placenta encapsulation may be prohibitive to some women who would otherwise be interested in the practice and likely affects women's willingness or ability to engage in placentophagy.

Perhaps our most significant finding was that mothers with a history of a postpartum mood disorder were more willing to try placentophagy in place of prescription medication than women with no prior mental health issues. This supports the possibility that women who engage in placentophagy may be motivated to do so to avoid past pregnancy complications, such as postpartum depression. A previous survey showed that 52% of participants did not consume their placenta after the first birth but did so after a subsequent birth,[9] and approximately half (47%) of the participants who reported specific motivations for engaging in placentophagy also reported history of a postnatal mood disorder, mainly depression.[9] Previous studies have also established that pregnant women are more inclined to prefer nonpharmacologic treatment for depression prevention.[30] Thus, placentophagy may be particularly appealing for women who are reluctant to accept prescription medication for mood management.

Although improved energy, mood, and lactation are common self-reported benefits,[9] few studies have investigated the hormone content or presence of toxic minerals in the encapsulated human placenta.[36–38] Available data suggest that several hormones (e.g., estradiol, estriol, progesterone, testosterone)[36,37] and trace minerals (e.g., arsenic, iron, manganese)[38] remain integral in the encapsulated placenta. The mean concentrations of most hormones are low, and the potential to produce a physiologic response that supports claimed benefits are inconclusive. A recent pilot

Table 4. Provide Characteristics

Characteristic	*Value*
Occupation (*n* = 183)	
Obstetrician/gynecologist	66 (35.7)
Psychiatrist	44 (23.8)
Psychologist	15 (8.1)
Nurse	16 (8.6)
Social worker	4 (2.2)
Midwife	17 (9.2)
Doula	0 (0.0)
Other	21 (11.4)
Time practicing (*n* = 183)	
≤2 yr	60 (32.4)
3 yr	62 (33.5)
4 yr	25 (13.5)
≥5 yr	36 (19.5)
Location (*n* = 183)	
Chicago	75 (40.5)
Denver/Aurora	55 (29.7)
Other US region	37 (20.0)
International	18 (9.7)

Values are number (percentage). Percentages were calculated on the basis of the number of participants who responded to each individual question.

Table 5. Provider Responses Stratified by Location

Response	Chicago ($n=75$)	Denver/Aurora ($n=55$)	Other[a] ($n=55$)	p-Value
Heard of placentophagy (yes)	63 (84.0)	49 (90.7)	49 (92.5)	0.327
Likely to recommend (%)				0.012
Likely	0 (0.0)	6 (12.2)	0 (0.0)	
Neutral	10 (14.1)	6 (12.2)	7 (14.3)	
Unlikely	61 (85.9)	37 (75.5)	42 (85.7)	
You initiate conversation about placenta (yes)	3 (4.1)	13 (24.5)	5 (9.1)	0.002
Patient initiates conversation about placenta (yes)	12 (16.4)	24 (44.4)	13 (23.6)	0.002
Aware of research (yes)	4 (5.6)	6 (12.8)	10 (20.0)	0.047
Aware of institutional policies (yes)	20 (26.7)	24 (44.4)	9 (16.7)	0.007
Risk of harm (yes)	41 (60.3)	30 (66.7)	30 (65.2)	0.778
Risks to mother or infant (yes)				0.054
Harm to mother only	7 (12.5)	10 (22.2)	3 (7.5)	
Risk to both	8 (14.3)	7 (15.6)	14 (35.0)	
Risk to neither	41 (73.2)	28 (62.2)	23 (57.5)	
Consider health of mother				0.029
Yes	9 (12.7)	14 (29.2)	3 (6.0)	
No	5 (7.0)	2 (4.2)	4 (8.0)	
Not recommend	57 (80.3)	32 (66.7)	43 (86.0)	
Postpartum benefits				0.260
Don't know	40 (59.7)	24 (52.2)	29 (60.4)	
No benefits	6 (9.0)	1 (2.2)	5 (10.4)	
Placebo	8 (11.9)	5 (10.9)	7 (14.6)	
Yes	13 (19.4)	16 (34.8)	7 (14.6)	
In favor of placentophagy				0.023
No	21 (28.8)	8 (16.7)	18 (35.3)	
Not sure	49 (67.1)	31 (64.6)	31 (60.8)	
Yes	3 (4.1)	9 (18.8)	2 (3.9)	

Values are expressed as number (percentage).
[a]The "other" category included other US states as well as international providers.

Table 6. Provider Responses Stratified by Occupation Type

Response	*MH specialist* (n=*63*)	*Midwife* (n=*17*)	*Nurse* (n=*16*)	*OB/GYN* (n=*66*)	*Other* (n=*21*)	*p-Value*
Heard of placentophagy (yes)	87.1	100.0	80.0	90.9	85.7	0.391
Likely to recommend						NA
Likely	0.0	29.4	0.0	0.0	5.0	
Neutral	6.8	52.9	33.3	0.0	30.0	
Unlikely	93.2	17.6	66.7	100.0	65.0	
You initiate conversation about placenta (yes)	3.2	47.1	0.0	10.8	20.0	<0.001[a]
Patient initiates conversation about placenta (yes)	14.3	88.2	6.7	30.3	21.1	<0.001[a]
Aware of research (yes)	17.5	25.0	7.1	5.0	10.5	0.093
Aware of institutional policies (yes)	11.3	64.7	12.5	45.5	15.0	<0.001[a]
Risk of harm (yes)	59.6	52.9	53.8	69.0	76.5	0.450
Risks to mother or infant (yes)						0.440
Harm to mother only	7.1	6.7	7.7	23.2	14.3	
Risk to both	26.2	13.3	30.8	16.1	21.4	
Risk to neither	66.7	80.0	61.5	60.7	64.3	
Postpartum benefits						NA
Don't know	66.7	31.2	46.2	53.6	70.0	
No benefits	1.9	6.2	23.1	12.5	0.0	
Placebo benefit	10	6.2	0.0	14.3	5.0	
Yes	13.0	56.2	30.8	19.6	25.0	
In favor of placentophagy						
No	28.8	5.9	14.3	40.0	15.0	
Not sure	71.2	41.2	71.4	60.0	70.0	
Yes	0.0	52.9	14.3	0.0	15.0	

Values are expressed as percentages. Because of low cell counts, actual frequencies are not shown in order to protect participant anonymity. Percentages were calculated on the basis of the number of participants who responded to each individual question. The p-values correspond to the Fisher exact test.
[a]Significant at the 5% level.
MH, mental health; OB/GYN, obstetrician/gynecologist; NA, not applicable.

study identified 14 trace minerals in samples from 28 placentas from healthy female donors that were encapsulated (i.e., dehydrated and pulverized) through a standardized process.[38] Concentrations of iron were high, and potentially toxic elements, such as arsenic and lead, were below established toxicity levels. These data confirm the presence of potential nutrients and toxins, but whether the concentrations are enough to achieve a therapeutic benefit or an adverse effects remains unclear.

As patients continue to independently seek resources for their healthcare, providers may be faced with more questions about placentophagy. The findings from our study suggest that the recommendation to practice placentophagy is mainly advocated by select groups of healthcare providers, primarily midwives. Furthermore, discussion regarding placentophagy is more often initiated by patients themselves than providers. Factors that may influence patients to choose placentophagy over pharmacotherapies include stigma surrounding mental health treatment, concerns of adverse effects of medications when taken while breastfeeding during pregnancy, and the limited safety data available for the majority of medications prescribed during pregnancy.[29] These factors should be explored in future research.

Overall, the number of women in the sample who had considered or engaged in placentophagy was extremely low. Anecdotally, two patients reported having previously considered but not engaged in placentophagy. The prevailing theme among the survey respondents, both providers and patients, was that there is not enough information to make an informed decision about placentophagy. While many providers noted extreme disinclination toward the practice, several expressed high interest in future research that could shed light on the potential benefits and/or risks of placentophagy in humans.

The scope of this study is limited by the patient population surveyed. The majority of the sample was college educated, white, and of high socioeconomic status and lived in Chicago. For these reasons, the sample may not be generalizable to the broader population. Future studies would benefit from collecting survey data from across the nation in order to determine which demographic factors—race, socioeconomic status, and place of residence—significantly affect women's interest in and likelihood of engaging in placentophagy. Additionally, because of collaborations among Northwestern Medicine of Chicago, University of Colorado Denver, and Denver Health Medical Center, a disproportionate number of our providers came from one of these two cities. All patients were surveyed at Northwestern Hospital (Chicago). Finally, data about mental health history were obtained via self-report; ascertaining such information from a medical record would be a more reliable measure.

Conclusions

Women are considering placentophagy as a possible alternative or supplement to medication or other forms of treatment for postpartum depression.[18] Consequently, healthcare providers have a responsibility to be able to give informed recommendations to patients who express an interest in placentophagy. Many providers believe that empirical research is necessary to evaluate the potential risks and benefits of the practice before advising patients about it. In their recent publication, Marraccini and Gorman[39] called attention to many challenges that face researchers looking to design and implement a randomized controlled trial examining the efficacy of placentophagy in humans, including identification of the nutritional properties of the placenta and standardization of placenta preparation, timing of administration, and dosing between participants. Despite these challenges, Marraccini and Gorman underscore the importance of continued research on human placentophagy, as well as the importance of clinician awareness and openness in discussing placentophagy with their patients.[39] Given the growing interest, further studies investigating the physiologic response and related benefits or adverse effects to hormones and minerals present in placenta capsules is warranted.

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