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Review Article

Placentophagia in Tribal and Modern Societies: Navigating the Thin Line Between Risk and Benefit

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Abstract

Objective: Eating the placenta after birth, or placentophagia, is common in mammals but questionable in humans. There is little scientific evidence to support the claims made by practitioners that it promotes lactation, prevents depression, and aids in postpartum healing.

Materials and methods: This paper reviews the historical background, cultural relevance, ethical considerations, advantages, and potential risks of human placentophagia. The placenta does contain hormones and nutrients, but their efficacy and bioavailability have not been established. Furthermore, safety concerns (such as bacteria and endocrine disturbance) raise doubts about its practice.

Results: Placentophagia is not recommended by the American College of Obstetricians and Gynecologists and the Centers for Disease Control and Prevention because the production of human placentophagy products is unregulated and presents potential health risks.

Conclusion: This review considers the benefits or harms of placentophagia on human health, summarizes recent studies, addresses ethical and medical viewpoints, and emphasizes the need for further research.

Keywords: Culture; Hormonal Balance; Maternal Health; Midwifery; Neonate; Placenta; Postpartum; Tribe

Introduction

Non-human mammals frequently engage in placentophagia, which is the ingestion of the placenta after birth (1, 2). However, many cultures consider the placenta a holy organ rather than a dietary supplement, making human placentophagia an infrequent phenomenon throughout history (3). According to Kristal (1980), this behavior is thought to provide evolutionary advantages such as hormone regulation, pain reduction, and nutrient replacement (4).

In recent decades, placentophagia has been more popular in Western culture, particularly regarding placenta encapsulation, raw eating, or placenta smoothies. Advocates claim that it enhances lactation, increases energy (clinical studies), and avoids postpartum depression (PPD) (5). However, these advantages were not supported by scientific research (6).

Although the healthcare authorities have diverse views against this method (ACOG, CDC 2017), citing practical risks and a dearth of evidence, support for it gained popularity in 2017 (7). However, there are safety concerns with ingesting the placenta, including the possibility of bacterial infection, exposure to heavy metals, and endocrine disruption (8). Depending on their customs, values,

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beliefs, and symbols passed down through the generations, various cultures worldwide honor, value, and discard the placenta in multiple ways after birth (9-11). The historical background, risk and benefit claims, safety concerns, and ethical issues surrounding human placentophagia are all rigorously assessed in this review. This research aims to determine if placentophagia is a legitimate postpartum habit or a possible health risk by synthesizing the related literature.

Placentophagia: Historical and Cultural Perspectives

Placentophagia in the Animal Kingdom: Placentophagia occurs naturally in almost all eutherian (placental) mammals. According to theories, mammals eat their placenta to reduce scents that were able to draw predators, replenish nutrients lost during childbirth, and stimulate maternal behavior through hormonal effects (4). Human placentophagia is uncommon despite these evolutionary advantages in animals, suggesting that cultural rather than biological factors drive this behavior (7).

Placenta-related historical human perspectives: The North Western Territory's Indian tribes near Great Slave Lake have this behavior, according to Dr. E. Y. Davis. Baked placenta is the most exquisite dish in Indian cuisine. After delivery, the placenta is cooked in a prepared oven until it has reduced to half its original size and is surrounded by cord fragments. Only the courageous eat it because they think it helps shape the child and gives them courage and strength. The placenta is consumed by the Kol tribe in the central part of India to support the reproduction process (3). The placenta is considered to have Shakhti (power) in Tamil culture. In Tamil Nadu, some women preserve umbilical tissue as amulets to shield their kids from danger and treat them when needed (12).

Placentophagia: modern western resurgence: Human societies have typically viewed the placenta as a sacred and symbolic organ rather than as nourishment. The placenta is buried as part of a spiritual practice in many cultural traditions, such as the Navajo of North America and the Māori of New Zealand (3).Traditional Chinese Medicine (TCM) has used dried human placenta (Ziheche) as an ingredient in herbal formulations for centuries. Some Indigenous and African groups consider the placenta to be the child's spiritual guardian or "twin."

In Japanese culture, eating the placenta is thought to improve female fertility rates, while in Hungary, women who want to stop conceiving children burn their placentas and dust the cremated remains in their husband's drink to drink (10).

The sixteenth-century Chinese "Compendium of Materia Medica" by Li Shizhen described dried human placenta, or "Zi He Che," to boost energy and vitality levels and treat liver and kidney issues, infertility, and dysfunction (13).

Placentophagia, as opposed to historical avoidance, has become more common in Western alternative medicine and holistic health movements. The influence of celebrities is responsible for this increase. A few public celebrities have advocated placenta encapsulation as a postpartum rehabilitation technique. Proponents of alternative health movements contend that eating the placenta is a "natural" way to restore postpartum hormones and nutrients. At the same time, social media trends and online communities support placentophagia, frequently emphasizing anecdotal benefits rather than scientific data (14). Major health organizations do not support placentophagia because of safety issues; scientific research has not supported these claims despite their popularity (ACOG, 2017).

Proposed benefits of placentophagia: Advocates of placentophagia claim several postpartum health benefits, such as balancing hormones, providing nutrition, and preventing PPD, but current research provides inconclusive or conflicting results.

Hormonal balance and postpartum recovery: Estrogen, progesterone, oxytocin, and Corticotropin-releasing hormone (CRH) are all found in the placenta and may aid in regulating hormone levels after giving birth. A randomized controlled trial discovered no discernible hormonal differences between the placebo and placenta capsule groups (6). Subjective mood gains are reported in a few small-scale trials but lack scientific rigor (15).

Prevention of PPD: As per a midwifery practice webpage, "Recycling this nutritious organ back into your body [postpartum] can help regulate milk production, speed up recovery time, reduce your risk of developing PPD, and generally increase your sense of well-being" (Mason). Placentophagia prevents PPD by maintaining estrogen and progesterone levels postpartum. PPD rates among women who consumed their placenta were not significantly reduced in a study. Common rationale for the practice of placentophagy in industrialized nations includes: increased lactation, recycling of vitamins, nutrients or hormones lost during

childbirth, speeding up healing time; and, also oppose, what doula and lactation consultants refer to on their professional website as "the 'baby blues' [or] serious postpartum depression" (16).

Prevent Postpartum Bleeding: Postpartum bleeding can be lessened by the placenta's production of the oxytocin hormone (2, 5). This result contradicts a study without evidence supporting the claim that placentophagy hinders bleeding following delivery (17).

Nutritional replenishment: Anemia prevention and energy generation are significantly aided by placentophagy (18). Some study claims that the placenta is rich in iron, B vitamins, and amino acids, potentially preventing postpartum anemia. A study suggests that iron bioavailability from placenta consumption is limited compared to iron supplements (19).

Increased breast milk production: According to research studies, placental hormones increase breastfeeding and prolactin levels. Placentophagia may be caused by females consuming hormones from the placenta, which include oxytocin, estrogen, progesterone, adrenocorticotropic hormone (ACTH), Releasing Factor Corticotropin, chorionic gonadotropin, hypothalamic-releasing hormones (GnRH), placental lactogen, placental opioid enhancing factor (POEF), relaxin, and inhibin. The development of the mammary gland and embryo implantation in females depends on estrogen and associated sex hormones. The amniotic fluid contains a variety of hormones, including oxytocin, prostaglandins, androgens, renin, progesterone, corticosteroids, chorionic gonadotrophin, and placental lactogen. Additionally, it has nutritional qualities and antibacterial activity. All these substances support the cow's milk production and help her go from pregnancy to postpartum (15, 20). There is no clinical evidence that eating the placenta significantly increases the amount of breast milk produced (5).

Pain reduction: As per the theory, placenta-derived opioids may have analgesic effects. Animal studies support this theory, but human trials are lacking (4).

Medical benefits: Regenerative stem cells are abundant in placental and umbilical cord blood (International Society for Stem Cell Research, 2008). Among the medical uses are blood malignancies like leukemia or lymphoma, bone marrow failure, blood disorders like sickle cell anemia or thalassaemia, immunodeficiencies, and metabolic abnormalities (21).

Placentophagia risks and safety concerns: Despite its growing popularity, human placentophagia is connected with various health hazards, mainly due to potential contamination, hormone imbalance, and lack of medical evidence. This section investigates the biological, microbiological, and toxicological concerns connected to placenta ingestion.

Bacterial and viral contamination: By acting as a biological filter, the placenta shields the developing fetus from poisons and infections. However, hazards such as Group B Streptococcus (GBS) bacteria are introduced when this organ is consumed after giving birth. An instance of neonatal GBS infection connected to the mother's ingestion of placenta capsules was reported by the CDC in 2017 (17, 19). The baby's frequent illnesses were probably caused in part by the presence of live GBS bacteria in the mother's placenta tablets (10, 17, 18). Studies on pathogenic bacteria have found that processed placenta samples, especially raw and inadequately dehydrated preparations, contain Salmonella, Staphylococcus, and Escherichia coli (E. coli) (15). Risk of HIV and Hepatitis after consuming the mother's placenta, especially raw, could increase the risk of self-reinfection if she has undetected viral infections (6).

Heavy metal and toxin accumulation: Cadmium, mercury, and lead exposure are environmental pollutants that the placenta collects and stores to safeguard the fetus. Placental tissue samples have detectable concentrations of heavy metals that could be harmful if consumed over time. Presently, there are no guidelines for the safe consumption of placenta capsules. Heavy metal content varies depending on the mother's exposure levels, unlike controlled nutritional supplements (17).

Endocrine disruption and hormonal overload: The placenta contains oxytocin, progesterone, estrogen, and CRH, making it a hormonally active organ (8). However, using these hormones after giving birth might cause unintended hormonal imbalances. For example, too much progesterone or estrogen can disrupt menstrual cycles and ovarian function (6). Breastfeeding issues include hormone residues in placenta capsules, which can interfere with the regulation of the milk supply and result in lactation suppression or engorgement (15).

Lack of standardized processing and regulation: Placenta products, in contrast to pharmaceutical supplements, are not subject to regulations, which results in variations in production techniques. Certain

placenta capsules fail to destroy germs because they are dehydrated at low temperatures. Placenta ingestion is not regulated by the FDA, WHO, or ACOG; instead, safety evaluation is left to individual service providers (ACOG, 2017).

Psychological and placebo effects of placentophagia: While scientific evidence does not strongly support physiological benefits, psychological factors may influence how women perceive placenta consumption.

The Placebo effect in postpartum recovery: Research indicates that placentophagia's alleged advantages might be placebo-driven (15). Expectation bias is one of the factors that contribute to placebo effects. Women taking placenta capsules may anticipate feeling better and recovering more quickly, reinforcing good subjective experiences (5). Online communities' social reinforcement frequently amplifies anecdotal advantages, making distinguishing genuine physiological improvements from placebo effects challenging (19).

Psychological comfort and ritualistic significance: Beyond just providing nourishment, placenta encapsulation has emotional benefits for a few mothers. The custom of eating one's placenta may provide one with a sense of empowerment and control over their postpartum health. Placentophagia is a cultural identity that is associated with "natural" postpartum care in certain alternative health circles (14). Although these psychological aspects may favor well-being, they do not support the idea that eating placenta has any physiological advantages.

Ethical and medical considerations of placentophagia

Ethical concerns in healthcare promotion: The emergence of commercial placenta encapsulation services presents moral dilemmas because of false information and uncontrolled procedures. Although the deceptive promotion of placenta pills has no scientific support, some alternative health providers assert that they can treat PPD, hormonal imbalance, and nutrient deficiencies (6). Women may consume their placenta without receiving appropriate information about the hazards concerning informed consent (8).

Medical organizations' stance on placentophagia: Due to safety and effectiveness issues, prominent health authorities have discouraged placentophagia. There is no proven benefit nor potential harm associated with placentophagia (ACOG, 2017). The health authorities encourage medical professionals to inform new mothers about the probable health hazards related to placentophagia. Due to the possibility of infection, the Centers for Disease Control and Prevention (CDC, 2017) advises against consuming placenta capsules and draws attention to instances of newborn disease caused by the mother's intake of placenta (7, 19).

Future regulatory considerations: The FDA or the WHO has not established placenta processing safety criteria. Medical organizations demand strict rules to stop harmful behaviors and health misinformation (22). Iron, protein, and hormones are naturally found in placental tissue. The precise characteristics of placental tissue composition differ greatly from placenta to placenta. It is impossible to draw any firm conclusions on the bioactivity of placental hormones. However, they may have a physiological impact during the postpartum phase. Although there is little chance of food poisoning or intoxication from the examined samples, these results should be confirmed statistically in a large population to check the generalizability of the findings (23).

Summary of findings

Points to consider

1. Motivate medical professionals to use traditional placental discarding techniques in prenatal care sessions.
2. Teach indigenous women how to handle the placenta when it is being transported from a medical facility to their homes and when it is disposed of at their residence.
3. Healthcare professionals should offer details about handling the particulars based on the approach used, such as a suitable temperature for placenta eating and the extent of the hole for placental burial, considering the various native placenta disposing methods.
4. To avoid transmission of infection, medical professionals ought to provide careful advice on placenta eating.

Final Verdict: Risk vs. Benefit

Although some people find psychological solace and cultural significance in placentophagia, empirical data do not support its use from a medical perspective. When discussing placentophagia with postpartum patients, healthcare providers should exercise caution due to the possible risks and the absence of regulatory monitoring.

Future research directions

The current study concentrated on the microbial colonization of processed placenta preparations with

potentially harmful bacteria, Streptococcus agalactiae (Group-B-Streptococci; GBS) and E. coli, to examine the possible neonatal health risks associated with this behavior (24).

Conclusion

The suggested advantages, hazards, and moral dilemmas of placentophagia were assessed in this review. The main conclusions are that promises of hormonal balance, PPD prevention, and enhanced lactation have not been demonstrated, and there is limited scientific support for the benefits. Instead of being physiologically based, most effects seem to be placebo-driven. Significant safety concerns include endocrine disruption, exposure to heavy metals, and bacterial infections. Uncontrolled placenta encapsulation services raise safety concerns. The Medical Community's Position is that placentophagia has not been shown to have any advantages but may pose health hazards. The CDC and ACOG do not advise placentophagia.

Conflict of Interests

Authors declare no conflict of interests.

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