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Common Behavioral Disorder in Pregnancy: Pica and its Effects

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ABSTRACT
Pica is a persistent desire to eat inedible or non-nutritive substances for over a month. It is a behavioral disorder affecting individuals of all ages, named after the magpie bird. Common types include geophagia, pagophagia, and amylophagia. Pica is common among children and pregnant women and can be attributed to nutritional deficiencies, hormonal changes, low hemoglobin levels, psychiatric disorders, psychosocial and cultural factors, age, marital status, gender, genetic characteristics, and environmental factors. The most common form of pica is pagophagia. Pregnancy often leads to increased desire to eat various materials, including ashes, cigarette butts, and other substances. These substances are consumed for various reasons, including taste, medicinal purposes, advice, thirst, and religious reasons. A recent meta-analysis reported a prevalence of 34% worldwide. This behavioral disorder, known as pica, poses a significant health risk to both mother and baby, causing serious issues like dental damage, constipation, and parasitic infectionsPica behavior in pregnant women can lead to various health issues, including iron deficiency, anemia, maternal death, and fetal distress. Exposure to chemicals like lead, pesticides, and herbicides can also cause fetal distress and mortality. A multidisciplinary approach is needed to manage pica, including nutritional deficiencies, psychological support, and behavioral therapies. Midwives play a crucial role in providing support, care, and education to pregnant women. Strengthening prenatal care can facilitate the identification of women with pica behavior and initiate appropriate treatment, protecting maternal and fetus-newborn health.

1. INTRODUCTION

During pregnancy, it is known that some substances (such as coal, soil) that do not have any nutritional value are consumed for unknown reasons. This situation, the etiology of which cannot be attributed to a reason, is called pica. Pica behavior is considered an eating disorder. Pica is a behavioral disorder seen in all age groups and in almost all cultures. Especially childhood and pregnancy are the periods when the incidence of pica behavior increases [1–3]. The prevalence of this condition, which can be seen in pregnant women in different parts of the world, varies between countries. The most common pica behaviors in pregnant women worldwide: geophagia (swallowing soil/clay), pagophagia (swallowing ice) and amylophagia (swallowing laundry starch) [2, 4]. Geophagia is a behavioral disorder that has been known to exist in our country for many years and studies have reported that this condition is present in 70% of Turkey [5, 6]. Pica behavior is an important public health problem that causes adverse maternal and fetal health problems. In this study, it was aimed to examine pica behavioral disorder in pregnancy, its causes, maternal and fetal effects, treatment and responsibilities of midwives on this issue based on the literature.

2. PİCA DEFINITION

Pica is defined as a person's persistent desire to eat inedible or non-nutritive substances (such as clay, mud, soil, starch, glue, detergent) for more than a month [7]. The word pica means magpie in Latin. This behavioral disorder is named after the magpie bird, which is known for eating almost everything. While the first available medical record of pica is from the 2nd century A.D., pica was only named in the 15th century [8]. According to the newly updated DSM-IV criteria, pica is included in the category of eating disorders affecting individuals of all ages [9]. Studies show that pica is associated with anorexia nervosa and bulimia

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nervosa [10]. In a recent meta-analysis, the prevalence of pica behavior worldwide was reported to be 34% [11]. Although pica is a behavioral disorder that can be encountered in different age groups, it is known that its incidence is higher in children and pregnant women [12]. The most common types of pica are geophagia (swallowing soil/clay), pagophagia (swallowing ice) and amylophagia (swallowing laundry starch) [2, 4]. In a study conducted with pregnant women in Palestine, pagophagia was the most common form of pica, while in another study conducted in Iran, geophagia was reported [13,14]. It was determined that women ate various substances such as ashes, cigarette butts, soap, baking soda, burnt match heads, chewing gum, hair, pieces of paper, paint chips, charcoal, chalk, toothpaste, lemon peel and coffee grounds during pregnancy [13, 15–17].

2.1. Causes of Pica Behavior in Pregnancy

Although the cause of pica behavior is not known for certain, it is suggested that certain situations trigger this behavior. Increased mineral needs and hormonal changes during pregnancy may cause pica to occur. There are nutritional theories that attribute this to mineral deficiencies such as iron and zinc. In particular, geophagia and amylophagia are thought to occur due to mineral deficiency, while pagophagia may be related to low hemoglobin levels or decreased iron stores during pregnancy [8,19]. In addition, psychiatric disorders such as stress, anxiety or obsessive-compulsive disorder, psychosocial and cultural factors, age, marital status, gender, genetic characteristics and the environment in which the individual lives are also known to play a role in the development of pica in pregnancy [8, 19–22].

In a study conducted with women with geophagia and amylophagia, it was reported that the most important risk factor for pica during pregnancy was race. The risk of pica in black women was found to be four times higher than in white women [23]. Again, in a meta-analysis on the subject, it was observed that the incidence of pica in multiparous women was higher than in other women [11]. In addition, contrary to popular belief, there was no relationship between maternal weight, pre-pregnancy body mass index (BMI) and gestational weight gain and pica [24].

It has been found that women consume these substances during pregnancy for a variety of reasons including taste, odor and mouthfeel, medicinal purposes (such as containing magnesium carbonate), someone's advice, thirst, traditional reasons and religious beliefs [19,25]. Medicinal reasons include calming nausea, creating a laxative effect (magnesium carbonate), quenching thirst (ice) and cooling the body (ice) [25]. Clay eaten in parts of Nigeria has been shown to contain kaolinite and to act as a powerful antidiarrheal; it binds toxins and bacteria and is thought to be able to form a protective layer on the intestinal epithelium [26]. In addition, folk medicine, ceremonial and spiritual practices and customs such as mud rubbing on the body, which are found in many African societies, contribute to high rates of pica [27]. This behavioral disorder, which is commonly seen during pregnancy, is considered to be an important health problem that threatens maternal and fetus-newborn health.

2.2. Maternal Effects of Pica Behavior

Pica behavior can cause many negative health consequences for pregnant women. Studies have shown that pica items consumed during pregnancy cause serious health problems such as dental damage, constipation, intestinal obstruction, parasitic infections, toxemia, hyperkalemia, skin rash, tongue burning, oral cavity injury, stomach burning, electrolyte disturbance, lead poisoning, iron deficiency anemia and maternal death [16, 23, 25, 28–33]. In addition, some studies have shown that pica is associated with stress during pregnancy and increases maternal stress especially in the first trimester of pregnancy [3]. In addition to all these negative effects, it has been determined that the consumption of these substances causes negative consequences on the birth process such as spontaneous abortion, preterm labor, dystocia, stillbirth [34].

2.3. Effects of Pica Behavior on the Fetus

Exposure to pica behavior in the prenatal period can cause significant health problems in the fetus and may even lead to mortality. Possible effects on the fetus in pregnant women with pica behavior may include fetal distress, decreased fetal head circumference, prematurity, low birth weight and mortality due to exposure to chemicals such as lead, pesticides and herbicides [23, 35].

2.4. Treatment of Pica in Pregnancy and Responsibilities of Midwives

Currently, there is no evidence-based treatment protocol for pica. A multidisciplinary approach should be adopted in the treatment of pica in pregnancy. It is the duty of midwives to identify pregnant women with pica behavior in the prenatal period and to provide appropriate counseling. The appropriate treatment method for each individual is determined according to the underlying causes and individual characteristics [19]. Ensuring correct communication at the first encounter with the pregnant woman and in the subsequent process

will facilitate the detection of such a vital situation. With a detailed history, laboratory findings and physical examination, it is possible to quickly initiate the appropriate treatment required by the pregnant woman. Depending on the mineral and iron needs of the pregnant woman, nutritional deficiencies should be met. Regarding the treatment of pica, it has been suggested that the practice can be reversed by consuming iron supplements [32]. If the cause of pica is due to a psychological condition, psychological support should be provided and the pregnant woman should be guided in this regard. Behavioral therapies are the most preferred methods in this process. Caregivers of the child should be warned about the complications of pica up to lead poisoning. Increasing the social support of the family, helping them overcome their difficulties and thus improving the mother-child relationship is an important part of the treatment [36].

3. Conclusion

This study addressed the causes of pica behavior in pregnant women, maternal and fetal effects, treatment management and responsibilities of midwives. Pica is a behavioral disorder that can be treated without causing significant health problems when diagnosed early. Otherwise, it is a serious health problem that may even cause maternal and fetal mortality. In this context, strengthening prenatal care during pregnancy is of great importance. Midwives have many roles and responsibilities in prenatal care. It is possible to detect pica behavior easily by following the current literature using the researcher roles of midwives. With the roles of manager and educator, it can be ensured that this behavioral disorder is treated and the pregnant woman is directed to the unit she needs depending on the reason for pica.

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Conflict of Interest

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Author Contributions

Conception and design of the study: ÇK; Data collection: ÇK; Data analysis: ÇK; Data Interpretation: ÇK; Drafting the article and/or its critical revision: ÇK; All authors have read and agreed to the published version of the manuscript.

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