

Pica- An Enigma of Malnutrition

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Editorial

Pica is an irresistible desire to eat certain non-food items such as clay, kaolin, soil, paint, paper etc. Pica is a Latin word "magpie, a bird known for its large and random appetite. It is an eating disorder and followed as a habitual craving for prolonged period of time. It is often secretly practiced by children and pregnant women [1]. However, it is followed by all people irrespective of race, social class, age and gender in some parts of the world. There are different forms of pica depending upon the material consumed. They are referred as geophagia (intake of clay or dirt); amylophagy (raw starches including pasta); ryzophagia (uncooked rice); pagophagia (ice or freezer frost), lithophagia (stones) etc.

Pica consumption has been studied by many ecologists, nutritionists, and anthropologist in various parts of world and found linked to various factors such as age, gender, culture, religion nutritional deficiencies, stress, and mental development. Though reason for pica is not very clear yet but stressors like hunger, maternal deprivation, family issues, parental neglect, pregnancy, poverty, disorganized family structure and increased exposure or susceptibility to pathogens and toxins are strongly associated with pica [2].

It has been regularly demonstrated with both negative and positive health effects. Pica is not always associated with iron deficiency it is also common among non-iron deficiency pregnant women also. Pregnant women who were engaged in pica have more complaints of abdominal pain and nausea than non-pica consumers [3]. In Malawi, Lakudzala and Khonje [4] observed that the soil is considered an edible soil to provide nutrients like iron, calcium and zinc and contamination with lead and spores of bacteria poses harmful effects on health. Walker et al. [5] demonstrated that pica consumers believe that kaolin or clay absorbs dietary toxins and bacterial toxins associated with gastrointestinal disturbances. Banenzoue [6] hypothesized that it could be due to the presence of aluminum and magnesium in it and pregnant women find kaolin anti nauseating. On the other hand, kaolin often gets contaminated with heavy metals such as lead, cadmium, mercury etc. particularly in hot and humid climates and excessive consumption of kaolin tends to damage nervous system (especially young children) and cause blood and brain disorders [7].

Golden and his team [8-10] did extensive research on among people of Madagascar who are engaged in pica and observed that they belief that eating soil help them to absorb nutrients like iron, zinc and magnesium the soil also acts as a natural deworming. They reported that 53.4% men, women and children were engaged in geophagy; 85.2% amylophagy and 19.0% in other non-food items. In a case study Gupta et al. [11] from India, a 55 year old woman was found with a big impacted lump of the clay in lower esophagus on gastrointestinal endoscopic examination after the complaint of severe chest pain and acute dysphagia. She was eating clay for 3 years while travelling to her

work place where cheap source of clay was used for tailor chalk in a boutique. Another study carried out by a team of Bonglaisin et al. [12] on lead contaminated kaolin consumption during pregnancy. Since lead is able to permeate the placenta therefore, accumulation of lead impairs fetal development. They observed that lead exasperate in iron deficient subjects and sometimes store in bones on prolonged exposure and kaolin-based lead can easily permeate the fetus. They reported that low dose of lead does not enter the cord blood but habitual consumption of kaolin renders the fetus and mother vulnerable to lead toxicity. Further the same group of researchers Bonglaisin et al. [13] did experiments by feeding lead-contaminated kaolin pellets to 12 week-old female albino rats (n=80) and found decreased thyroid iodine content, increased urinary iodine excretion, increased thyroid volume, and normal iodine absorption and but lower level of hemoglobin in blood. There are metal-metal interactions which influence the bioavailability of iron and iodine and the calcium naturally present in kaolin tends to inhibit the absorption and assimilation of iron.

Eventually pica consumers are susceptible to electrolyte and metabolic disorders, lead and mercury poisoning, hypokalemia, parasitic infections, tooth wear, intestinal obstruction and various problems of the gastrointestinal tract. Psychotic comorbidities and micronutrient deficiencies particularly iron, zinc, calcium is common in pica cases. The pica is an ignored cause of malnutrition in the world. In many cases it disappears on its own but in some cases it continues hence the treatment varies considerably. Providing the missing nutrients and managing the medical problems is on one side but pica is associated with behavior and environment particularly heavy metal poisoning through soil, water and food are big issues to think hard. It is influencing brain development of the young generations seriously affecting the many people around the world [14].

References

1. Fawcett EJ, Fawcett JM, Mazmanian D (2016) A meta-analysis of the worldwide prevalence of pica during pregnancy and the postpartum period. *Int J Gynaecol Obstet* 133: 277-283.
2. Fishbain D, Rotondo D (1983) Single case study: foreign body ingestion associated with delusional beliefs. *J New & Ment Dis* 171: 321-322.
3. Young SL, Khalfan SS, Farag TH, Kavle JA, Ali SM, et al. (2010) Association of Pica with Anemia and Gastrointestinal Distress among Pregnant Women in Zanzibar, Tanzania. *Am J Trop Med Hyg* 83: 144-151.
4. Lakudzala DD, Khonje JJ (2011) Nutritive potential of some 'edible' soils in Blantyre city, Malawi. *Malawi Med J* 23: 38-42.
5. Walker ARP, Walker BF, Sookaria FI, Canaan RJ (1997) Pica. *J Roy Health* 117: 280-284.
6. Banenzoue (1992) Reactivity in acid diluted edible clays in Cameroon: Determination of iron and zinc absorbed. University of Yaounde.

7. Bonglaisin JN, Mbofung CMF, Lantum DN (2011) Intake of Lead, Cadmium and Mercury in Kaolin-eating: A Quality Assessment. *J Med Sci* 11: 267-273.
8. Golden CD, Rasolofoniaina BJR, Benjamin R, Young SL (2012) Pica and Amylophagy Are Common among Malagasy Men, Women and Children. *PLoS ONE* 7: e47129.
9. <http://news.harvard.edu/gazette/story/2012/10/unearting-a-dietary-behavior/>
10. Miao D, Young SL, Golden CD (2015) A meta-analysis of pica and micronutrient status. *Am J Hum Biol* 27: 84-93.
11. Gupta M, Sachdeva A, Lehl SS, Singh K (2013) Clay impaction causing acute dysphagia. *BMJ Case Rep* 2013: bcr2013008929.
12. Bonglaisin JN, Chelea M, Tsafack TJJ, Lantum DN, Djiele PN, et al. (2017) Assessment of Haemoglobin Status and Transplacental Transport of Lead and Calcium During Geophagy. *J Nutr Disorders Ther* 7: 204.
13. Bonglaisin JN, Tsafack TJJ, Chelea M, Djiele PN, Mbofung CMF, et al. (2017) Effects of Geophagy on Hemoglobin Level and Iodine Absorption/ Assimilation in Albino Rats. *J Nutr Disorders Ther* 7: 211.
14. Callahan KL (2000) Pica, Geophagy and Rock Art: Ingestion of rock powder and clay by humans and its implications for the production of some rock art on a global basis. SAA conference, Philadelphia.