

Chalk Eating in Middle Georgia: A Culture-Bound Syndrome of Pica?

R. KEVIN GRIGSBY, DSW, Augusta, Ga; BRUCE A. THYER, PhD, Athens, Ga; RAYMOND J. WALLER, MSW, Warner-Robins, Ga; and GEORGE A. JOHNSTON, JR., MD, Macon, Ga

ABSTRACT

Background. Although geophagia (earth eating) has been observed and documented in many areas of the world, the specific preference for consuming kaolin is less well known. The ingestion of kaolin, also known as white dirt, chalk, or white clay, is a relatively common type of pica found in the central Georgia Piedmont area.

Methods. We reviewed the literature, made informal contacts with Georgia physicians, and arranged semistructured interviews with 21 individuals with a history of chalk eating; we gathered both quantitative and qualitative information.

Results. Kaolin ingestion appears to be a culturally-transmitted form of pica, not selectively associated with other psychopathology.

Conclusion. Kaolin ingestion appears to meet the DSM-IV criteria for a "culture-bound syndrome."

PICA IS DEFINED as the persistent eating of non-nutritive substances and is listed in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) as an axis I psychiatric disorder that is usually first diagnosed in childhood.¹ Historical accounts reveal a wide range of substances and materials involved in pica,^{2,3} such as ice (pagophagia), paint chips (plumbophagia), burnt matches (cautopyreiophagia), and feces (coprophagia). While various causes of pica and associated treatment strategies are described in the literature,⁴ there is a paucity of literature addressing specific types of pica.

Garfinkel⁵ reported that pica is common in the mothers of patients who have childhood pica, but pica is not just limited to children and/or their mothers. Pica is not uncommon among certain subgroups of people, such as individuals with mental retardation^{6,7} and pregnant women.⁸ In relation to pica in pregnancy, Smulian et al⁹ argued that cravings of certain items may or may not seem abnormal to either the patients or the health care provider due to cultural acceptance of unusual behaviors in pregnancy. They reported

that a significant proportion (14.4%) of pregnant women from a rural area in Georgia have some pica behavior.

Bronstein and Dollar⁸ reported that in Georgia, though pica has diminished in frequency, it still persists and may be the cause of anemia in many of our pregnant patients. Others have reported that pica is not correlated with hunger, anemia, or helminthic problems.^{9,10} Clearly, medical complications related to pica are in part a function of the frequency, quantity, and nature of the non-nutritive substance ingested.

We studied a particular type of pica, the ingestion of kaolin, which is also known as white dirt, chalk, or white clay. Kaolin is a naturally occurring clay used in the manufacture of ceramics, as a coating or filler for paper and textiles, and as an ingredient in medications used to treat diarrhea. Kaolin ingestion is a relatively common type of pica found in the central Georgia Piedmont area, though it is not exclusive to this area.^{8,10,11}

A review of the literature, informal contacts with physicians practicing in Georgia, and interviews with a group of people who engage in this behavior suggest that kaolin ingestion may represent a culture-bound syndrome.¹² This is defined in the DSM-IV as ". . . recurrent, locality specific, patterns of aberrant behavior and troubling experience that may or may not be linked to a particular DSM-IV category."¹ Most examples of culture-bound

From the Department of Psychiatry and Health Behavior, Medical College of Georgia, Augusta; School of Social Work, University of Georgia, Athens; Phoenix Community Service Board, Warner-Robins, Ga; and Mercer University School of Medicine, Macon, Ga.

Reprint requests to R. Kevin Grigsby, DSW, Medical College of Georgia, Department of Psychiatry and Health Behavior, Augusta, GA 30912.

syndromes found in the literature involve non-western societies, with few illustrations from contemporary North American or European localities.

Although two reports of pica in Georgia are available, they are generic rather than specific to kaolin ingestion.^{8,9} A third published case report suggested that physicians practicing in the central Piedmont area of Georgia may routinely encounter patients who eat kaolin and may have to treat serious health complications that can arise from this behavior.¹¹ Informal discussions with several physicians in the central Piedmont area of Georgia, faculty physicians at the Medical College of Georgia in Augusta, and physicians in practice in the Augusta, Georgia, area revealed that each had heard of this problem or had encountered patients who engaged in the ingestion of kaolin. One physician's comment is representative of the experience of the others: 90% or more of the persons who ingest kaolin are black women. We did this study to gain a better understanding of the features of kaolin eating in central Georgia.

METHODS

Our initial attempts to locate persons who admitted to consuming kaolin proved unproductive. People seemed reluctant to discuss the possibility that they had ingested chalk, which is understandable considering the criteria for a culture-bound syndrome. However, a colleague of one of us (R.J.W.) did acknowledge a history of eating kaolin and said that she knew of others who had eaten it. We recruited this woman, who is black and a licensed practical nurse (LPN), to conduct additional interviews after she was instructed on basic interviewing techniques. She used a semistructured, seven-item, one-page interview protocol, composed by us, based on the literature review and local knowledge (a copy of this protocol is available from one of us (B.A.T.)).

Within 2 days, the LPN completed semistructured interviews with 21 persons who currently consume kaolin or had a history of ingesting this substance. A simple snowball-sampling procedure was used, with those initially interviewed providing the names of additional individuals for the LPN to contact.

FINDINGS

The representativeness of our 21 respondents with respect to the larger population of

kaolin eaters is unknown. Nevertheless, our group represents the largest series of individuals ever interviewed related to this behavior. All those interviewed were black and ranged in age from 28 to 88 years, with a mean age of 46.5 years. Of the 21 persons interviewed, only one was male. Sixteen persons were living in an urban area, two in a rural area, and three did not indicate whether they were from a rural or urban area. Eleven were interviewed at the hospital where the LPN was employed, eight were interviewed via telephone, two were interviewed at their homes, one at a senior center, and another at her (non-hospital) workplace.

When asked why they ate chalk, eight said they liked the taste, seven said they craved it, and three others answered that they had imitated friends' or relatives' chalk eating. Other answers included to gain weight, it's something to eat, pregnancy, and iron deficiency. The remaining participants reported not knowing why they ate chalk or did not respond to the question. When asked how they acquired chalk, eight reported getting it from friends, neighbors, or family members; five reported getting it directly from the earth; four reported buying it at the store; and two obtained it directly from a kaolin pit mine. One of us (B.A.T.) has seen packages of kaolin for sale in local stores. While the package label said novelty, the sales clerk readily admitted that people eat it. Anecdotally, we know of one instance of a New York resident who makes an annual trip to Georgia for the purpose of purchasing kaolin.

About half of those interviewed reported knowing others who ate chalk, with estimates of their number ranging from four to too numerous to count. Only three reported knowing of men who ate chalk, with estimates ranging from one to three men. Three respondents reported knowing white persons who consumed kaolin (with two knowing only one person each and the third claiming to know 10 white persons who did so). However, many respondents implied that it was absurd to ask if white people ate chalk.

When asked about the taste and feel of the clay, 20 (95%) of the respondents said that they liked its taste. The single male respondent reported that he did not like the taste and had engaged in the behavior only for a short time as a child. Fifteen of the respondents reported that they enjoyed the feel of the chalk as they ate it. One respondent re-

ported that it helped with digestion, but eight others reported that it did not. Seventeen of the respondents reported that ingesting chalk did not make them sick, while the other four reported that they had trouble with constipation after they ate chalk. One participant described having had a friend who ate chalk, had a medical problem, and was told by a physician that if she did not stop eating kaolin that she would die. The friend continued to ingest chalk because she liked the taste and reportedly died.

Fifteen of the 21 participants reported that others knew about their eating chalk, two others specifically reported that others did not know, and three chose not to respond to this question. When asked about what others thought of chalk eating, three reported that others felt positively about it, two reported others feeling negatively about it, eight respondents reported that others did not feel either way, and the remaining eight respondents chose not to answer the question. Fourteen said they knew of others who currently ate chalk, with the numbers ranging from 2 to 30 (mean, 14), suggesting that the behavior is not rare.

DISCUSSION

Our limited data suggest that the eating of kaolin is primarily practiced by black women who were introduced to the behavior by family members or friends, either as children or during pregnancy. Those who began eating chalk during pregnancy typically were introduced to this behavior by their mothers.

We believe that kaolin ingestion is a form of pica that meets the DSM-IV criteria of a culture-bound syndrome. Unlike most examples found in the psychiatric literature, the cultural context of kaolin eating is a contemporary

occurrence in the United States. Apparently, it is not associated with any other obvious psychopathology, though medical complications from an over-indulgence (eg, constipation, anemia, colon rupture) in the practice are not uncommon. It is unknown how common kaolin ingestion is in the general population, but chalk eating is clearly not a widely practiced, culturally sanctioned behavior. Most individuals were not forthcoming in discussing their ingestion of kaolin and recognized that this behavior is seen as unusual from the perspective of the mainstream culture.

References

1. *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV*. Washington, DC, American Psychiatric Association, 4th Ed, 1994, pp 95-96
2. Blinder BJ, Goodman SL, Henderson P: Pica: a critical review of diagnosis and treatment. *The Eating Disorders*. Blinder AC, Chaitlin BF, Chaitlin R (eds). New York, PMA Publishing Corp, 1988, pp 331-344
3. Parry-Jones B, Parry-Jones WL: Pica: symptom or eating disorder? a historical assessment. *Br J Psychiatry* 1992; 160:341-354
4. Lacey EP: Broadening the perspective of pica: a literature review. *Public Health Rep* 1990; 105:29-35
5. Garfinkel PE: Feeding and eating disorders of infancy and early childhood. *Comprehensive Textbook of Psychiatry*. Kaplan HI, Sadock BJ (eds). Baltimore, Williams & Wilkins Co, 6th Ed, 1995, pp 2321-2324
6. Danford DE, Huber AM: Pica among mentally retarded adults. *Am J Ment Defic* 1982; 87:141-146
7. McAlpine C, Singh NN: Pica in institutionalized mentally retarded persons. *J Ment Defic Res* 1986; 30:1971-1978
8. Bronstein ES, Dollar J: Pica in pregnancy. *J Med Assoc Ga* 1994; 63:332-335
9. Smulian JC, Motiwala S, Sigman RK: Pica in a rural obstetric population. *South Med J* 1995; 88:1236-1240
10. Vermeer DE, Frate DA: Geophagia in rural Mississippi: environmental and cultural contexts and nutritional implications. *Am J Clin Nutr* 1979; 32:2129-2135
11. Johnston GA: Geophagia (kaolin ingestion) complicated by colon rupture: a case report. *J Abdom Surg*, Fall 1997, pp 8-9
12. Simons RC, Hughes CC: Culture-bound syndromes. *Culture, Ethnicity, and Mental Illness*. Gaw AC (ed). Washington, DC, American Psychiatric Association, 1993, pp 75-93