

RESEARCH ARTICLE

Social perceptions of childhood diarrhea in Lubumbashi, Democratic Republic of the Congo: A qualitative study

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Abstract: **Introduction:** Infantile diarrhea remains a public health problem in the Democratic Republic of the Congo, where infant mortality linked to this disease remains high despite the proven efficacy of oral rehydration therapy. This study aims to understand the social perceptions of childhood diarrhea among mothers in Lubumbashi, by examining how they diagnose and treat the disease through both popular and biomedical representations. **Material and methods:** The study was conducted in Lubumbashi, the capital of Haut-Katanga in the DRC, utilizing a qualitative methodology that involved semi-structured interviews with 32 randomly chosen mothers. Selection criteria encompassed the number of children, educational level, religion, and age range (18 to 60). Information was gathered through documents and interviews conducted in Swahili, subsequently translated into French, and analyzed utilizing Jean-Blaise Grize's 'natural logic' to grasp social representations. **Results:** The study revealed that the majority of mothers associated diarrhea with physical signs such as dehydration, watery stools, depressed fontanel, and sunken eyes. Several mothers attributed the diarrhea to cultural causes, such as the consumption of certain foods by pregnant women (e.g. "kabambale") or the practice of breastfeeding by pregnant mothers. Local diseases such as "lukunga" and "kilonda ntumbo" are considered to be specific forms of diarrhea in popular culture. Treatments include traditional remedies such as ash applications and sitz baths. **Conclusion:** Perceptions of childhood diarrhea in Lubumbashi reflect a tension between cultural beliefs and biomedical knowledge, where rehydration is often neglected. The study recommends raising community awareness of the effectiveness of ORT while respecting local beliefs.

Keywords: infantile diarrhea, social perceptions, cultural representations, oral rehydration, traditional medicine

1 Introduction

Diarrhea is generally defined as the passing of loose or watery stools at least three times a day, or more frequently than is usual for the individual affected [1]. Since 1979, the World Health Organisation (WHO) and the United Nations Children's Fund (UNICEF) have adopted oral rehydration therapy (ORT), a simple and inexpensive solution involving the administration of oral rehydration salts to combat dehydration caused by diarrhea [2]. Despite being effective, easy to administer, and cost-effective, childhood diarrhea remains a significant public health issue, especially in the Democratic Republic of the Congo (DRC), where morbidity and mortality rates among children under the age of 5 remain high [3]. The DRC is among the five countries with the highest mortality rates, trailing behind Sierra Leone, Angola, Chad, and Somalia [4,5].

Despite the biomedical advancements in diarrhea treatment, it seems that this approach has demonstrated limitations, especially regarding the acceptance of treatments in specific communities. In this regard, the social sciences provide a supplementary viewpoint by delving into the cultural, psychological, and social aspects of the disease. Embracing the Canadian biopsychosocial model, these fields enable a more comprehensive understanding of diarrhea, encompassing not solely medical factors but also socio-cultural dimensions.

Faced with the paradox of a therapy that is scientifically proven but little adopted, several researchers have revealed that, in African contexts, therapeutic choices are strongly influenced by social perceptions and representations [6]. Etiological and therapeutic patterns are often shaped by the social and spiritual environment in which individuals live [7]. A study carried

out in Benin showed that these perceptions are the result of a syncretism between biomedical knowledge and ancestral knowledge, which has a considerable influence on the way diseases are perceived and treated [8]. Additionally, some research has indicated that the experience of biomedical care acquired during medical consultations modifies and enriches popular knowledge about health and medicines [8,9].

On the basis of this perceptual variation, our study addresses the following question: how is infantile diarrhea perceived by specific mothers in the city of Lubumbashi? The objective is to illuminate the social perceptions of this disease in Lubumbashi, to comprehend how they impact daily management and local therapeutic practices.

2 Materials and methods

2.1 Study framework

Lubumbashi, formerly the capital of Katanga province until its dismemberment in 2015, is currently the capital of Haut-Katanga province. Historically, Lubumbashi had a small population at the beginning of the 20th century, with just 1,300 inhabitants in 1910 [10]. However, the discovery of vast copper deposits in 1906 attracted a large population of immigrants who came to work in the mining industry, transforming the city into a multicultural and cosmopolitan crossroads. Today, Lubumbashi is home to around 2,695,000 inhabitants (2022 statistics) and covers an area of 747 km².

After colonization, the city underwent several crises, including ‘Zairianisation’ and the civil war, which impacted the quality and availability of public services, especially in public health and education. These challenges have led to a rise in the need for health services, resulting in the commercialization of these services. Situated in a temperate tropical climate zone, Lubumbashi has a rainy season from mid-October to mid-April, succeeded by a dry season. This climate favors the spread of pathogens that cause childhood diarrhea [11, 12].

2.2 Context and type of study

The study occurs in a setting where the interplay of traditional and biomedical knowledge influences healthcare routines. Lubumbashi is marked by significant multiculturalism and a juxtaposition of traditional and Western medicine, within a population frequently encountering challenging living circumstances. Here, an emerging concept of “inhospitable medicine” [13] signifies the increasing skepticism towards the established healthcare system. This investigative qualitative study was conducted from April to May 2022 to address the lack of knowledge regarding social attitudes towards childhood diarrhea in this area.

2.3 Participants

The target population for this study was mothers living in Lubumbashi, who are recognized as primarily responsible for managing children’s health in the home [13, 14]. Men and women without children were excluded from the study. The selection criteria for participants included: the number of children (around 4 on average), level of education, religion, the mother’s professional or gainful activity, the age of the mothers ranged from 18 to 60, with an average age of 48.

The sample size was 32 mothers, randomly selected until reaching an empirical saturation point, where no new information emerged during the interviews. Participants’ consent was obtained, and data confidentiality and respondent anonymity were assured.

2.4 Methodological tools

2.4.1 Literature review

Documentary analysis was employed to collect pertinent information on childhood diarrhea and its social perceptions. This method bolsters the argument by leveraging credible written sources, such as prior studies on health perceptions in analogous settings.

2.4.2 Semi-structured interviews

The main data collection took the form of semi-structured interviews, a preferred method for exploring social representations. This technique makes it possible to obtain information directly from the interviewee, without any active influence from the interviewer. The interview guide was structured around three main dimensions:

- (1) Symptoms or syndromes identified by mothers as associated with diarrhea;
- (2) Mothers' explanations of the causes of these symptoms;
- (3) Therapeutic practices and curative resources used to treat childhood diarrhea.

Although the interview guide was written in French, the discussions with the participants were conducted in Swahili, the local language, and later translated into French for analysis purposes.

2.4.3 Natural logic by Jean-Blaise Grize

The speech analysis was conducted utilizing the "natural logic" method developed by Jean-Blaise Grize. This method facilitated the comprehension of the mental structure of the representations derived from the mothers' speeches, unveiling the cognitive patterns that influence their actions when dealing with childhood diarrhea.

2.5 Data processing and analysis

The data collected was analyzed qualitatively to comprehend mothers' social perceptions of childhood diarrhea. The arguments were structured according to "natural logic" to identify the judgment content shared by the mothers. Out of the 32 participants, all recognized that frequent liquid stools indicate that the child is suffering from diarrhea. Moreover, 22 mothers associated diarrhea with a depressed fontanel, while 15 mothers identified bloody stools as a distinctive sign of this illness. The analysis also unveiled the presence of a structured organization of representations, influenced by cultural beliefs and personal experiences.

3 Results

Using natural logic, we found that mothers in Lubumbashi associate their children's liquid or loose stools with a series of cultural diseases: *lukunga*, *kilonda ntumbo*, *kasumbi*, *buse*, and *kuhara*. The symptoms of diarrhea are thus often reinterpreted and classified in these local categories, all of which have liquid stools as a common denominator, although each is perceived as a distinct disease from a biomedical perspective.

Lukunga is a term used in Luba culture to describe depression of the fontanel in children, often accompanied by popping, a pimple under the roof of the mouth, inappetence, and weight loss. While biomedicine considers this depression to be a sign of dehydration, mothers interpret it as an illness in its own right. They believe it is caused by the pregnant mother eating "kabambale", a scale-less freshwater fish, or by eating at the market during pregnancy. Mothers also report that breastfeeding by a pregnant woman can lead to similar symptoms in the child.

Kilonda ntumbo, translated as "abdominal pain" is a condition associated with rectitis accompanied by prolonged diarrhea. Symptoms include bloody stools, a red anus, and itching. Mothers believe the condition is caused by eating sweets or raw foods such as mango or manioc.

Buse, from the culture of the Lamba tribe in the south of Haut-Katanga province, is a disease caused by malnutrition when a mother conceives before weaning her child. The child has hollow cheeks and a swollen belly, suffers from severe diarrhea, and shows signs of emotional deprivation. Some authors attribute this disease to social neglect, which creates a vicious circle of malnutrition, infection, and weight loss.

The mothers interviewed also mentioned several cultural beliefs regarding the causes of childhood diarrhea: "If a pregnant woman eats kabambale or eats at the market, her child will suffer from *lukunga* and have diarrhea"; "A child breastfed by a pregnant woman can have diarrhea because the milk is spoiled"; "Sexual relations after childbirth or parental disputes can cause diarrhea in the child".

The treatments used by the mothers reflect their cultural beliefs. To treat *lukunga*, they apply ash from the burnt head of the *kabambale*, mixed with palm oil and indigenous salt, to the child's fontanel and under the roof of the mouth. For *kilonda ntumbo*, they recommend mango peel enemas, Vicks suppositories, and sitz baths with burnt banana paste. Finally, for *kuhara*, similar to diarrhea in biomedical medicine, they use rice water or oral serum, sometimes combined with deworming drugs or terramycin.

4 Discussion

The results of this study reveal the significant impact of cultural beliefs on the perception and treatment of childhood diarrhea in Lubumbashi. The reclassification of diarrhea symptoms

into local categories like *lukunga*, *kilonda ntumbo*, *buse*, and *kuhara* demonstrates the profound social and cultural influence on the understanding of illnesses. These findings align with previous research emphasizing the role of social constructs in the uptake and implementation of biomedical interventions in resource-limited settings, especially in sub-Saharan Africa [12, 15].

One of the main findings of this study is that mothers tend to neglect oral rehydration, which is recognized as the most effective biomedical treatment for childhood diarrhea [2]. This omission is linked to cultural interpretations of symptoms, where dehydration, although identified by certain signs such as a depressed fontanel or dry lips, is considered to be a separate illness (such as *lukunga*) rather than a symptom of diarrhea. This phenomenon has also been observed in other contexts, where the dissociation between symptoms and their biomedical interpretation hinders the adoption of standard treatments [16].

Beliefs about the causes of diarrhea, like the consumption of 'kabambale' or dietary practices during pregnancy, reflect a local understanding of the disease based on traditional knowledge. These beliefs result in treatment practices that prioritize traditional remedies, such as applying ashes or using mango bark enemas, over biomedical interventions like oral rehydration therapy (ORT). This finding aligns with Baxerres' research [17] on the impact of traditional knowledge and remedies on treatment decisions in West Africa, where a blend of biomedicine and ancestral medicine influences therapeutic options.

The combination of traditional and biomedical practices, as observed with the use of rice water to treat *kuhara* (similar to biomedical diarrhea), illustrates a hybrid adaptation strategy. These strategies combine ancestral knowledge and biomedical approaches, as noted in the work of Cellucci [18], which explains how individuals navigate between multiple care systems based on the resources available and cultural interpretations of illness.

To reduce infant mortality from diarrhea, it is crucial to consider the cultural beliefs of communities while also emphasizing the significance of oral rehydration. Public health interventions need to be tailored to this cultural context by collaborating with traditional healers and community leaders to effectively incorporate local knowledge into initiatives aimed at addressing diarrhea. Studies conducted by Kouakou Bah [6] have demonstrated that this collaborative strategy can enhance the acceptance of biomedical treatments in settings where cultural beliefs heavily influence healthcare practices.

Collaboration with local health authorities and community leaders played a crucial role throughout this study. By engaging these key stakeholders from the early stages of the research, we were able to gain valuable insights into local practices and the perception of public health programs. This partnership not only facilitated access to participants but also enhanced the relevance and acceptability of the recommendations derived from the study. For future interventions aimed at promoting the use of biomedical treatments, such as oral rehydration therapy (ORT), continued involvement of local authorities will be essential. By combining scientific knowledge with traditional beliefs and incorporating the voices of local communities, we aim to create more culturally appropriate and effective public health programs to combat childhood diarrhea in Lubumbashi.

5 Conclusion

We are witnessing a significant increase in the perceptions surrounding diarrhea, particularly with the inclination to "thermalize" certain illnesses, which adds complexity to social representations. Diarrhea is sometimes perceived as a symptom and other times as a distinct disease. Regardless of biomedical or cultural perspectives, the symptoms mainly coincide in terms of the stool's condition. However, surveys indicate a lack of emphasis on dehydration, likely influenced by cultural beliefs that guide practices towards treatments overlooking rehydration, despite its recognition as the primary solution to diarrhea. This oversight may contribute to the elevated rates of infant morbidity and mortality associated with the illness. This study underscores the importance of a comprehensive, socio-cultural approach to combatting childhood diarrhea in Lubumbashi. Understanding local perceptions and enhancing cooperation between traditional and biomedical healthcare systems are crucial to promote the adoption of effective treatments, such as rehydration, and to decrease infant mortality.

Conflicts of interest

The authors declare that they have no conflict of interest.

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