

# Food and Personal Hygiene Perceptions and Practices among Caregivers Whose Children Have Diarrhea: A Qualitative Study of Urban Mothers in Tangerang, Indonesia

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## ABSTRACT

**Objective:** To examine caregivers' perceptions and practices related to food and personal hygiene and its association with diarrhea in children 6 to 36 months of age who suffered recurrent diarrhea.

**Design:** This qualitative study, conducted in March and April 2006, used both in-depth interviews and direct observation data.

**Setting:** Urban Tangerang, near Jakarta, Indonesia.

**Participants:** Twenty-four mothers whose monthly household income was less than \$160 US and had latrines in their homes.

**Phenomenon of Interest:** To examine the relationship between mothers' perceptions and behaviors related to diarrhea, food hygiene, and personal hygiene.

**Analysis:** Interview transcripts were analyzed based on the phenomenon of interest and coded for common themes.

**Results:** Mothers differentiated diarrhea episodes as either disease or nondisease. Most mothers associated the importance of food hygiene with disease prevention, contaminating agents, and health. Mothers commonly wiped cutting boards with a kitchen towel after slicing vegetables, whereas they washed the board with soap and water after cutting raw meat. Mothers perceived that the importance of personal hygiene was for maintaining health and cleanliness. The majority of mothers washed their hands without soap after performing housework and cooking.

**Conclusions and Implications:** Improving mothers' knowledge while incorporating existing perceptions might lead to positive changes.

**Key Words:** hygiene, perception, practice, diarrhea, mothers (*J Nutr Educ Behav.* 2010;42:33-40.)

## INTRODUCTION

Diarrhea is the second leading cause of child mortality worldwide. Each year more than 1.5 million children under the age of 5 die of acute diarrhea,<sup>1</sup> which translates to 18% of deaths of children under the age of 5 between 2000-2003.<sup>2</sup> In Indonesia, the situation is similar. Diarrhea contributed to 18% of the mortality rate in 2006<sup>3</sup> and is the second-leading

cause of death, after respiratory infections, for children under the age of 5.<sup>4</sup> The prevalence of diarrhea among 12- to 23-month-old children in rural Banten province, Indonesia was 19%, with a higher prevalence in urban areas.<sup>5</sup> Seventy percent of all cases of diarrhea in children may be attributed to food contamination.<sup>6</sup> The incidence of diarrhea increases after the introduction of complementary food due to the un-

hygienic preparation of weaning food,<sup>6-8</sup> especially in children aged 6 to 24 months.<sup>1</sup> The combined effects of inadequate sanitation, unsafe water supplies, and poor personal hygiene are responsible for 88% of childhood deaths from diarrhea.<sup>9</sup> As a consequence of poor feeding and repeated infections, one-third of children under the age of 5 in developing countries were estimated to be stunted in 2005.<sup>10</sup> Due to its overwhelming long-term consequences, which affect not only physical growth, but also cognitive ability, productivity, and economic return, tackling diarrhea should be prioritized. Hence, factors contributing to diarrhea among children in the community should be identified.

Several studies have presented the actual causes versus the perceived causes of diarrhea. Three risk factors of diarrhea have been identified: unclean water and food, unhygienic

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doi:10.1016/j.jneb.2009.03.003

practices of caregivers, and poor domestic hygiene.<sup>11-16</sup> Furthermore, perceived causes of diarrhea were thought to be spicy or bad food or water; worms, flies, and germs; child's developmental milestones; and natural causes.<sup>17-22</sup> The knowledge and perception of caregivers guide their food and hygiene practices and their choice of treatment for diarrhea cases. Even then, accurate knowledge may not result in good practice, as in the case of negligence of hand washing in Nicaragua,<sup>16,23</sup> underestimating the importance of hand washing before handling food in Bangladesh and Botswana,<sup>22,24</sup> or the different hand-washing practices depending on beliefs about dirtiness in Peru.<sup>25</sup> In spite of the many-faceted problems surrounding diarrhea, improving food and personal hygiene practices is obviously one of the most effective ways of reducing the burden of diarrhea in children.<sup>26-28</sup> Improved sanitation has reduced diarrheal disease by more than a third in 1 study.<sup>9</sup> Washing hands with soap can reduce the risk of diarrheal diseases by 42%-47%.<sup>29</sup> However, this strategy can be successful only if it is based on current levels of knowledge and perception.<sup>11,19,22,30,31</sup>

Because of limited publications and lack of understanding among the public regarding food and personal hygiene, this study was expected to provide information on why some persons exhibit poor hygiene practices. Understanding why individuals behave in a particular way is very important, as this allows a more effective design and delivery of health intervention messages.

## METHODS

### Study Design and Sampling

The study was conducted in Neglasari subdistrict, Tangerang municipality, Banten province, approximately 20 km south of Jakarta. This subdistrict was chosen based on its high prevalence of diarrhea (20%) among children.<sup>32</sup> Data collection took place during March and April 2006, at the end of the rainy season. A list of households with children aged 6 to 36 months was obtained from the local Integrated Health Post (locally

called *Posyandu*). During initial screening, 62 children suffered diarrhea. However, only 24 children suffered recurrent diarrhea 3 to 4 weeks after the initial screening. Samples were households with monthly income of less than 1,500,000 Rupiah (approximately \$160 US; based on local household minimum wage) and had latrines. Mothers or the main caregivers were the subjects of this study because they could answer questions relating to food hygiene.<sup>24</sup>

### Information Gathering

This qualitative study employed a combination of direct observation and in-depth interviewing to explore each mother's perceptions and practices. The interview and observation guides were tested on 8 households. Saturation of answers was achieved, and guides were revised accordingly. The direct observations were conducted prior to the interviews at each mother's home and focused on food and personal hygiene practices. Observations lasting for 40 to 60 minutes were conducted between 7 and 10 AM and 1 and 3 PM. Observation of food hygiene practices included assessing cleanliness of utensils, food storage, habits of purchasing ready-to-eat food, and food preparation of home-made food and ready-to-eat complementary food. Observation of personal hygiene focused on hand-washing practices during food preparation. The in-depth interviews conducted at each mother's home lasted for 45 to 75 minutes and focused on diarrhea, food, and personal hygiene. First, mothers were asked whether they were familiar with the term diarrhea and its causes. Then, the concept of diarrhea was developed based on the mother's perception. The interviews focused on practices, perception, and knowledge of food and personal hygiene. The study protocol was approved by the Ethical Committee, Faculty of Medicine, Universitas Indonesia, Jakarta.

### Data Analysis

All interviews were audiotaped and transcribed verbatim. Transcripts were analyzed systematically by coding responses and examining for com-

mon themes according to content analysis procedures.<sup>33</sup> The transcripts were analyzed based on 3 major topics: diarrhea, food hygiene, and personal hygiene. A matrix of themes and notable quotations for each interview question was simultaneously developed.

## RESULTS

### Description of Study Participants

The total number of mothers included in this study was 24. The median age of mothers was 20, with a range of 14-40 years. The median age of the children was 16 months, with a range of 7-33 months. Eleven children were boys. Most of the mothers ( $n = 19$ ) had less than 9 years of schooling and did not work outside of the home ( $n = 23$ ). Most of the mothers ( $n = 22$ ) owned private latrines. The 3 main ethnic groups were Betawi (native Jakarta people), Sundanese, and Betawi Benteng (minority group, a mixture of Chinese-Jakarta ancestors) (M. Aruan, oral communication, 2008). Islam is the main religion in the area. Mothers were able to speak the national language, Indonesian.

### Concept, Cause, and Transmission of Diarrhea as Perceived by Mothers

Most mothers ( $n = 15$ ; 63%) recognized that their children had diarrhea based on stool consistency (liquid stool), whereas a few others ( $n = 9$ ; 38%) identified diarrhea by combining stool consistency and frequency (more than 3 times a day). Food items that were believed to cause diarrhea included peas, ice, spicy and sour food, candy, snacks, and coffee (total  $n = 13$ ; 50%). Some mothers ( $n = 9$ ; 38%) believed that the cause of diarrhea was a cold, exposure to dirty environments, or improper food handling. Most mothers ( $n = 19$ ; 80%), however, perceived that diarrhea is also related to a child's physical and motor development milestones, such as crawling, walking, growing, talking, and teething. The concept of diarrhea transmission through unclean hands or child-to-child transmission was recognized by 9 mothers (38%).

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