

# What influences health behavior? Learning from caregivers of young children in Viet Nam

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## Abstract

*Globally, the caregiving behaviors that contribute to good nutritional status are well understood; but it is not clear why some caregivers perform these behaviors while others do not. This formative qualitative research was designed to improve understanding about what distinguishes caregivers who practice optimal behaviors from those who do not. This study is a one-time, cross-sectional baseline assessment of factors that affect nutrition-related behavior change. It took place in a rural northern province in Viet Nam. One hundred caregivers of children 6 to 17.9 months of age from five communes were interviewed. None of the five communes were included in the larger prospective study designed to test the impact of the community empowerment and nutrition program (CENP). Four behaviors were examined: feeding the child “positive deviant” foods, feeding the child during diarrheal episodes, washing the child’s hands, and taking the child to the health center when ill. Results indicate that for all four behaviors, favorable social norms distinguished those who practiced each behavior from those who did not. Positive, reinforcing beliefs and attitudes were important determinants of every behavior except handwashing.*

*Likewise, self-efficacy differentiated doers from non-doers for all behaviors except feeding during diarrheal episodes. Findings from this research suggest that fathers and in-laws of non-doers are more likely to fail to advise mothers about infant feeding and health than they are to provide negative advice. By discovering what distinguishes those who practice optimal behaviors from those who do not, researchers, program planners, and others are better equipped to develop targeted interventions that lead to positive behavior change.*

**Key words:** Behavioral determinants, positive deviance, infant feeding, norms, attitudes, elicitation procedures, Viet Nam

## Background and rationale

Viet Nam has some of the highest rates of childhood malnutrition in the world. In a 1998 national survey of children under five years of age, 39% were underweight for their age, 34% were stunted (low height-for-age), and 11% were wasted (low weight-for-height) [1, 2]. Inadequate breastfeeding and complementary feeding and poor hygiene are likely major contributors to malnutrition in Viet Nam. Globally, the caregiving behaviors that contribute to good nutritional status of children less than five years of age include, among others, early initiation of breastfeeding, exclusive breastfeeding for the first six months of life, appropriate and timely introduction of complementary foods, immunizations, the proper management of childhood illnesses including acute respiratory infection (ARI) and diarrhea, good hygiene, and birth spacing. It is well known that practicing these behaviors can lead to improved nutritional status and health; however, in most settings, it is not clear why some caregivers perform these behaviors while others do not. The purpose of this qualitative research is to understand—through the use of elicitation procedures—how caregivers who practice “positive deviant” behaviors differ from those

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who do not. The current study is part of a larger prospective, randomized intervention trial, which tracked 240 children in program and comparison communities [3]. This study is based on the premise that the more program planners understand the determinants of caregivers' behaviors, the more likely they are to design and implement interventions capable of changing those behaviors on a large scale.

## Program

This study was carried out in a rural northern province in Viet Nam, in preparation for the implementation of Save the Children Federation's programs. Save the Children Federation rehabilitates malnourished children using a "positive deviance" approach [4]. Work outside the home is the primary barrier to exclusive breastfeeding in rural Viet Nam based on insights from mothers who exclusively breastfed and worked. Since 1990, Save the Children Federation/US has used positive deviance among more than 2,500,000 individuals in Viet Nam to reduce severe childhood malnutrition by approximately 75% [5, 6]. "Positive deviants" are well-nourished children from resource-poor households. Save the Children Federation's program identifies positive deviants through growth monitoring of all children less than five years of age, then helps other parents learn how the parents of positive deviant children are able to keep their children well nourished in spite of tremendous poverty. Parents are taught new caregiving skills using hands-on practice in local homes. Through in-home interviews with parents of positive deviant children, local community health volunteers and local health staff identify those behaviors that improve children's nutritional status and health despite poverty. By definition, positive deviant behaviors are those that are practiced by a few individuals in the community, and that contribute to the health of the child. After volunteers, health staff, and caregivers identify commune-specific positive deviant behaviors, volunteers use rehabilitation sessions to encourage caregivers of malnourished children to adopt these practices. These two-week sessions, held in health volunteers' homes or in kindergartens, educate caregivers and promote such locally identified behaviors as feeding children shrimp and crabs, giving them greens taken from local paddies or bought cheaply at local markets, clipping children's fingernails, and washing their hands to reduce the spread of disease.

During the course of the program, improvements in children's nutritional status have been rapid and long lasting. In a recent study [7], children who participated in Save the Children Federation's positive deviance program were significantly better nourished than children who did not, two years after Save the Children Federation left the program area. In addition, younger siblings

were significantly better nourished than the younger siblings of children from comparison communities even though they had not directly participated in the program, suggesting that parents not only successfully rehabilitated malnourished children but that they continued to practice healthy behaviors after Save the Children Federation left the community.

## Behavior-change theories

There are numerous theories that provide guidance about the factors that potentially influence behaviors. These include the health belief model [8, 9], the theory of reasoned action [10], Bandura's social cognitive learning theory [11, 12] and others. While differences exist among theories, common factors are evident, including attitudes about the behavior itself; subjective norms; and self-efficacy. Attitudes in turn are influenced by the positive and negative consequences caregivers think may result from performing the behavior. In that regard, theory suggests that people will have favorable attitudes toward the behavior if the outcome of performing the behavior is considered positive and performing the behavior will lead to the expected outcome. With respect to norms, caregivers are potentially influenced by individuals they consider important. Caregivers' behaviors are likely influenced not only by what others expect them to do but also by their motivation to comply with others. Self-efficacy is the belief in one's own capability to perform a given behavior, even in the face of difficulties.

## Methods

This paper describes one approach to theory-based behavior change research known as elicitation procedures. Elicitation procedures rely on qualitative methods to better understand the determinants of behaviors and to identify which determinants are the most appropriate to target in subsequent interventions. Elicitation has been used in other settings to examine such health-related behaviors as condom use among young adults in the United States [13]. This study is a one-time, cross-sectional baseline assessment of factors that affect nutrition-related behavior change. It took place in a rural province in northern Viet Nam, approximately two hours by car from Hanoi. As part of this study, 100 caregivers from five communes were interviewed. "Communes" are administrative units used by the Government of Viet Nam. The communes in the study province have on average about 5,200 inhabitants, typically made up of 12 hamlets (or villages) of 90 to 100 families each. The communes were included in the study because of their geographic dispersion and because of similarities they shared

with communes where Save the Children Federation generally works: poor, low- or midland ecological regions with high rates of malnutrition. Communes scheduled to participate in the prospective intervention trial were excluded from the sampling frame. Twenty primary caregivers with a youngest child between 6 and 17.9 months old were randomly selected from rosters maintained by local commune-level officials from each of the five communes. Rosters were checked for accuracy by the research team.

Because Save the Children Federation's programming had not yet begun in this province, four positive deviant behaviors were selected to represent the behaviors often identified during positive deviance inquiries in similar settings in other provinces. Senior staff at Save the Children Federation identified frequent positive deviant behaviors that had a known link to health status based on research and experience. Results from instrument pre-testing suggested that some behaviors—such as immunizing children—were nearly universal. Because positive deviance excludes universal or nearly universal behaviors, immunization and other common behaviors were dropped from the study. By definition, all behaviors needed to include an action, a time frame, an object, and a context. Definitions for the four positive deviant behaviors were:

- » Feeds child positive deviant foods: at least 2 to 3 times a week, caregivers feed child at least one nutritious food that neighbors sometimes or almost never feed their children.
- » Feeds child during diarrheal episodes: continues to give the child the same amount or more foods and liquids when child has diarrhea (3 or more loose or watery stools in the last 24 hours).
- » Washes child's hands: washes child's hands with water before every meal (but does not necessarily use soap).
- » Takes child to health center when ill: goes with the child to the health center when the child is ill (not necessarily restricted to the last illness episode).

In addition to information about whether or not caregivers practiced each of the four positive deviant behaviors, the field guide included questions about sociodemographic characteristics as well as open-ended questions. Open-ended questions included caregivers' perceptions of advantages and disadvantages of practicing each behavior, source and strength of advice about the behavior, what makes it easy or difficult to engage in the behavior and caregivers' perceptions about how able they feel to practice the behavior even in the face of difficulty. Information about co-residence with in-laws was also collected. To ensure that questions were linguistically and culturally appropriate, the field guide was translated into Vietnamese by the senior Vietnamese researchers on the project and reviewed by all interviewers. The research team spent one day pre-testing the field guide. Pre-testing occurred in a

neighboring commune in the same district where elicitation procedures took place. Respondents for pre-testing were selected from government rosters of 6 to 17.9 month old children living in the commune. Analyses conducted as part of a separate prospective study conducted in the same district indicated that government rosters were complete and accurate. Pre-testing took place as part of training, just prior to data collection. The modified field guide was back-translated into English to ensure that the Vietnamese translation preserved the intent of the questions in English.

The two senior Vietnamese researchers identified eligible mothers and their children. Five interviewers with experience conducting in-depth interviews about maternal and child health in Viet Nam were selected and trained over a period of six days. In the last week of September and the first week of October, 1999, the interviewers administered semi-structured questionnaires to caregivers in their homes and recorded their responses, verbatim, on the survey instrument. Most interviews lasted 45 minutes to one hour. Interviews were not tape-recorded.

Once collected, textual data were translated into English and entered verbatim into EpiInfo (Centers for Disease Control and Prevention, Atlanta, Ga., USA). English was used so that the Vietnamese and American researchers could compare coding and interpretation. Data were then exported to an Excel (Microsoft Corporation, Redmond, Wash., USA) spreadsheet where responses were sorted, categorized, and coded, depending upon the type of response caregivers gave. Categories were developed directly from caregivers' responses. The Excel spreadsheet (with coded categories) was then exported to SPSS (SPSS Inc., Chicago, Ill., USA). SPSS was used to calculate frequencies and percents for coded responses as well as close-ended questions from the field guide. SPSS was also used list the actual text of each respondent, thereby preserving the meaning of what had been said. Social norms were scored on a 7-point scale ranging from 1 (very strong negative advice to practice the behavior) to 7 (very strong positive advice). Likewise, self-efficacy was scored on a 7-point scale ranging from "very sure I am unable to practice the behavior" to "very sure I am able to practice the behavior." Because the self-efficacy queries were linked to questions about difficulties practicing positive deviant behaviors, only those individuals who expressed at least some difficulty were asked how able they felt about engaging in such behaviors.

The process researchers used to identify positive deviant behaviors was not the same as the approach Save the Children Federation program staff usually use. Save the Children Federation identifies positive deviants through growth monitoring and wealth ranking [14]. It uses focus groups to establish community norms about feeding, caring and health-seeking behaviors. During focus groups, Save the Children Federation

asks community members about foods that are known to be nutritious but that are given by only a few parents. On the other hand, researchers used in-depth interviews with caregivers to determine whether or not they practiced a given positive deviant behavior. Caregivers were not interviewed on the basis of a positive outcome (adequate nutritional status). Unlike positive deviance, there was no attempt to distinguish between those who were poor and those who were not. Consequently, the number of doers (people who practiced an optimal health behavior) in this research overestimates the number of positive deviant caregivers.

## Results

While in-depth interviews contained a limited number of questions about the sociodemographic characteristics of the sample, it is possible to broadly describe and compare those who did and did not practice a given behavior. Doers and non-doers were similar with respect to mother's age and social class as well as child's sex and number of siblings (table 1). However, caregivers who fed their children positive deviant foods (nutritious food that neighbors sometimes or almost

never feed their children) were more likely than caregivers who did not give positive deviant foods to come from higher social classes.

### Feeds child positive deviant foods

More caregivers (69 of 100) fed their children positive deviant foods ("doers" of this behavior) than non-doers (31 of 100). The most common positive deviant foods were eggs, fish, animal fat, meat, and tofu.

### Beliefs and attitudes

When asked about the positive consequences associated with feeding children such foods, doers considered positive deviant foods to be nutritious and healthy, to aid child development, to ease digestion, and to help avoid diseases (table 2). Responses did not differ markedly by food type.

While some doers and non-doers said positive deviant foods "ease digestion," others indicated these foods were difficult to digest, especially if given in "large" quantities (table 3). Regarding other undesirable consequences associated with giving children positive deviant foods, both doers and non-doers worried about disease transmission, especially through pork. It should be noted that at the time of interview, there was an epidemic of foot-and-mouth disease transmitted from infected pigs to humans. Doers and non-doers were also concerned about pesticides and about the over-consumption of foods such as animal fat, which was often associated with diarrhea.

### Social norms

About one-third of doers and two-thirds of non-doers said no one gave them advice about what to feed their children. Parents of the husband, the child's father, and mother's parents were all common sources of advice for doers about feeding positive deviant foods. Doers received advice that was strongly or very strongly supportive of giving positive deviant foods. Doers' mean score on a 7-point scale was 6.3. On average, the advice non-doers received was neutral (4.0).

### Facilitators and barriers

Doers reported having an easier time than non-doers accessing positive deviant foods. Doers lived near markets, had family members who provided positive deviant foods, or grew these foods themselves. Thirty-nine percent of doers' responses and 23% of non-doers' answers indicated there was nothing that made it difficult for them to give positive deviant foods. Doers and non-doers who expressed challenges said it was hard to buy positive deviant foods and that they were difficult to prepare. However, non-doers also cited lack of support from in-laws and problems digesting the food as additional barriers.

TABLE 1. Key sociodemographic characteristics (%) of doers and non-doers

	Doers (%)	Non-doers (%)
Feeds child positive deviant foods		
Male	45	55
Only child	42	58
Mother 30 years old or more	28	23
Self-reported social class: medium-high or high***	44	29
Feeds child during diarrheal episodes		
Male	41	52
Only child	48	45
Mother 30 years old or more	26	27
Class: medium-high or high	44	35
Washes child's hands		
Male	48	48
Only child	46	48
Mother 30 years old or more	29	23
Class: medium-high or high	45	32
Takes child to health center when ill		
Male	50	45
Only child	47	48
Mother 30 years old or more	28	23
Class: medium-high or high	40	38

\*\*\*  $p < .001$ .

TABLE 2. Perceived advantages of feeding child positive deviant (PD) foods

Doers ( <i>n</i> = 69)			Non-doers ( <i>n</i> = 31)		
Feeding my child PD foods...	<i>n</i>	%	Feeding my child PD foods...	<i>n</i>	%
Is nutritious Provides vitamins, child is healthy Good for child's bones Enough nutrients Has more protein than meat Has a lot of fat/lard so child will be fat Has a lot of calcium A lot of vitamin A in yolk	57	46	Is nutritious Eggs contain protein Has more protein than meat Has vitamins	21	54
Is healthy Child becomes healthy and intelligent Child plays more Child looks pink (PD food) is healthy for adult so it must be healthy for children too	17	14	Is healthy Child becomes healthy Children who eat lizard all look healthy	4	10
Aids child's development Child grows fast Child will be bright Child can walk faster	11	9	Aids child's development Child grows faster Child can walk sooner	5	13
Eases digestion	10	8	Eases digestion Easy to eat and swallow Good for digestion	2	5
Helps keep the child cool	9	7	Helps keep the child cool	3	8
Helps avoid diseases Will not get diseases that can be transmitted through meat Child has not had diarrhea since started eating rice flour with animal fat/lard No risk of pesticide poisoning	5	4			
Other Full child will sleep well It is made from fish so better than salt Reduces perspiration Easy to prepare Lightens complexion	5	4			
Improves appetite Child does not have good appetite without fat/lard	4	3			
Is easy because child likes these foods Mother thinks it is nutritious because child likes it	2	2			
Do not know	2	2			
None	1	1	None	4	10
Total responses	123		Total responses	39	

TABLE 3. Perceived disadvantages of feeding child positive deviant (PD) foods

Doers ( <i>n</i> = 69)			Non-doers ( <i>n</i> = 31)		
Feeding my child PD foods...	<i>n</i>	%	Feeding my child PD foods...	<i>n</i>	%
None	34	49	None	8	23
May make my child sick May make fever worse May get diseases from pigs May get diarrhea if fat/lard is not fresh May have pesticides Not good if child has sores in mouth	18	26	May make my child sick Salted peanuts cause dry throat, coughing Some diseases can be passed from pigs to human Fat/lard attached, child may have diarrhea May have lots of pesticides	13	37
Makes it difficult to digest Difficult to digest if child eats more than one egg a day Child cannot digest if she eats too much crab	7	10	Makes it difficult to digest Not good for digestion if he eats too often	5	14
Other Child is not fat Resistant to medicines if child is sick	4	6	Other Bile is bitter and poisonous	3	9
Do not know	3	4			
Is not nutritious Not enough nutrition if child eats it alone and too much	2	3	Is not nutritious	1	3
Can make my child too cold/hot Can get hot inside if child eats too much	1	1	Can make my child too cold/hot Child may get "cold" inside and diarrhea	3	9
Does not agree with my child Child does not want to eat much	1	1	Does not agree with my child	1	3
			Is difficult because my child is small Child is too small to get peanuts	1	3
Total responses	70		Total responses	35	

### Self-efficacy

Results presented in table 4 indicate that 93% of doers felt sure or very sure they were able to feed their children positive deviant foods in spite of difficulties.

### Feeds child during diarrheal episodes

There were 27 caregivers who continued to give as much or more foods and liquids during diarrhea as when the child was healthy. Seventy-one did not and 2 were not sure.

### Beliefs and attitudes

Doers of this behavior felt that feeding children as much or more foods and liquids during diarrhea helped avoid dehydration, gave children the nutrients they needed, and kept children healthy. Only one doer mentioned anything negative about feeding children the same amount or more during diarrhea (food is difficult to digest). In contrast, among the 71 non-doers, 76 responses suggested negative consequences about feeding the child as much or more than usual. A major-

ity of non-doers felt that some types of foods—including animal fat, fish, fruits, vegetables, eggs, sugar, and "cold" foods—should be avoided because they aggravated diarrhea. Lard and fish were seen as potentially damaging to children's intestines. Some non-doers also felt that children could not eat or digest as much or more foods and liquids while suffering from diarrhea.

### Social norms

Health workers, doctors, father's parents, and the media all frequently advised doers about the amount of foods and liquids that should be given to children suffering from diarrhea. Most non-doers received no advice. Two-thirds of those advising doers about how much to feed during diarrhea were strongly in favor of giving as much or more than usual. Half of non-doers received very strong positive advice. Mean scores for doers and non-doers were 6.2 and 4.9.

### Facilitators and barriers

There was nothing in particular that made it easy for doers and non-doers to feed as much or more

Table 4. Caregiver’s perception of ability to practice healthy behaviors (self-efficacy)

	Doers		Non-doers	
	n	%	n	%
Feeds child positive deviant foods				
Very sure she is unable	1	1	2	6
Sure she is unable	1	1	18	58
Somewhat sure she is unable	1	1		
Somewhat sure she is able	2	3	1	3
Sure she is able	21	31	1	3
Very sure she is able	42	62	9	29
Feeds child during diarrheal episodes				
Very sure she is unable	1	7	11	28
Sure she is unable			16	40
Somewhat sure she is unable	1	7	2	5
Somewhat sure she is able	1	7	3	8
Sure she is able	10	67	6	15
Very sure she is able	2	13	2	5
Washes child’s hands				
Very sure she is unable			1	3
Sure she is unable			12	39
Somewhat sure she is unable			6	19
Somewhat sure she is able			8	26
Sure she is able	7	50	4	13
Very sure she is able	7	50		
Takes child to health center when ill				
Very sure she is unable			3	13
Sure she is unable			4	17
Somewhat sure she is unable			1	4
Somewhat sure she is able	2	7	3	13
Sure she is able	18	64	11	46
Very sure she is able	8	29	2	8

during diarrheal illness. What made it difficult to feed more? For most doers, nothing. But for some doers and non-doers, children’s crying and lack of desire to eat prevented them from feeding more. Non-doers also reported that the time needed to prepare foods and negative advice from a variety of sources made it difficult for them to feed their children sufficient quantities.

**Self-efficacy**

Results presented in table 4 refer to those caregivers who reported difficulties feeding during illness episodes. Eighty percent of doers and 20% of non-doers felt sure or very sure they could feed as much or more during episodes of diarrhea. Mean scores for doers and non-doers were 5.5 and 2.9, respectively.

**Washes child’s hands**

Fifty-six caregivers washed children’s hands with water before every meal; 44 did not.

**Beliefs and attitudes**

Doers washed hands to avoid bacteria, worms, diseases, itches, and infections; and to keep children clean and healthy. A few doers felt washing hands would help keep children cool and make them feel comfortable, help create a good appetite, and “assure” the mother. Like doers, non-doers felt that handwashing would help avoid diseases and infections. Only three of the 56 doers could think of anything negative about washing children’s hands. Their concerns included the fear that children might get cold and that soap might damage children’s thin skin. Like doers, most non-doers could not think of reasons not to wash children’s hands.

**Social norms**

The most commonly cited individuals giving doers advice about handwashing were paternal grandparents, “nobody,” and children’s fathers. Non-doers mentioned “nobody” as the most frequent source of advice. Seventy percent of all doers’ advisors gave very strong advice in favor of handwashing. Fifty-five percent of those advising non-doers offered similarly strong support. However, 27% of doers and over half of non-doers received no advice whatsoever.

**Facilitators and barriers**

Doers were able to wash hands because water was available, they had family support, their children liked water and handwashing was an existing habit (table 5). On the other hand, almost half of all non-doers’ responses suggested there was nothing that made handwashing easy (table 6).

**Self-efficacy**

Fourteen of the 56 doers and 31 of the 44 non-doers expressed difficulties washing hands. Among those expressing difficulty, doers were more likely to be sure or very sure they could wash their children’s hands in spite of challenges (100% vs. 13%). Mean scores were 6.5 and 3.5 for doers and non-doers, respectively.

**Takes child to health center when ill**

Sixty of the 100 caregivers interviewed reported taking their children to the health center when they were ill.

**Beliefs and attitudes**

The positive consequences doers and non-doers most commonly cited for taking the child to the health center were that the practitioner was professional and knowledgeable and that the child could get the exams, diagnosis, treatment, and medicines needed. Doers

TABLE 5. Factors that made it easy to wash child's hands with water before every meal

Doers ( <i>n</i> = 56)			Non-doers ( <i>n</i> = 44)		
Washing my child's hands...	<i>n</i>	%	Washing my child's hands...	<i>n</i>	%
Is easy because water is available Water source next to house Mother gets up early to boil water every day Hot water available so child also washes in winter	25	29	Is easy because water is available Well in front of house Warm water available in winter	6	13
Is easy because the family supports it Father helps to get water Older children can help washing Paternal grandmother can help Everyone in family tells mother to do so	15	17	Is easy because the family supports it Paternal grandparents can help Older child can help washing hands Many people can help	8	18
Is easy because my child likes the water Child likes playing with the water	13	15	Is easy because my child likes the water Child likes playing with water Child is not afraid of water	4	9
Is already a habit Habit of making warm water to wash child's hands	11	13	Is already a habit	2	4
None	10	11	None	21	47
Other Mother is assured when child is clean Mother stays at home Gives child 2–3 baths/day Simple Does not need a lot of water	9	10	Other Clean, helps avoid diseases Convenient	2	4
Does not take much time	4	5			
			Do not know	2	4
Total responses	87		Total responses	45	

felt health professionals' enthusiasm was a plus. Doers mentioned they felt "assured," "the health center is nearby," "almost everyone goes there," and "the child recovers faster." Non-doers were more likely than doers to mention that there were no favorable consequences associated with taking their children to the health center. Twelve of 40 non-doers felt there was nothing good in doing so, compared to one of 60 doers.

Responses from doers (77%) and non-doers (40%) suggested there were no negative consequences associated with taking children to the health center. Some doers and non-doers mentioned delays seeing the doctor, practitioners' lack of experience, misdiagnosis, and mistreatment as negative consequences that happen when sick children go to the health center. Doers and non-doers expressed fear that their children could get sicker on the way to the health center. One mother indicated the child would "get worse on the way there if it is raining." Another said her son's fever would worsen on the way if it was windy. Non-doers also cited a lack of medicine and equipment, bad diagnoses, and the availability of alternative remedies as reasons not to go to the health center.

### **Social norms**

The most commonly cited individuals giving doers advice about taking the sick child for treatment were the child's father and paternal grandparents. However, about 18% of the time doers received advice from no one, and 29% of the time non-doers received advice from no one. Eighty-one percent of all advice to doers and 42% of all advice to non-doers was very strongly supportive of taking children to the health center. Only 4% of advice to doers and 6% of advice to non-doers was against taking sick children to the health center. Mean scores for doers and non-doers were 6.8 and 6.1, respectively.

### **Facilitators and barriers**

Doers found it easy to take the sick child to the health center because they lived close to the health center and because health care professionals were "qualified." Non-doers mentioned these factors as well, though less frequently than doers. Twenty-one percent of responses from non-doers (as compared to 6% from doers) indicated there was nothing that made it easy for them to take their children to the health center when sick. What

TABLE 6. Factors that made it difficult to wash child’s hands with water before every meal

Doers (n = 56)			Non-doers (n = 44)		
Washing my child’s hands...	n	%	Washing my child’s hands...	n	%
None	42	74	None	9	19
I am very busy Busy with rice field Have no time	5	9	I am very busy Busy with work in the field and taking care of many children Maternal grandmother keeps child but cannot wash his hands	18	38
I have to boil water/it is difficult to access water Have to get water from maternal grandparents’ house Need hot water in winter	5	9	I have to boil water/it is difficult to access water Water source is very far Have to get water from a well while still holding child Have to ask neighbor for water	6	13
Child dislikes it Child cries when his hands are taken out of the water	3	5	Child dislikes it	2	4
Takes time	2	4	Takes time	1	2
			Do not know	2	4
			Is not a habit	3	6
			Other Mother forgets When mother’s younger brother feeds child, he does not remember to wash hands Afraid child will get cold	7	15
Total responses	57		Total responses	48	

made it difficult to take children to the health center? For some doers, it was the cost of services (in particular, medicines) and difficulty getting to the health center. Even so, about half of all doers’ responses suggested there were no difficulties taking the child to the health center. Twenty-three percent of responses from non-doers indicated no difficulties. Like doers, non-doers faced difficulty paying for services and transporting children.

**Self-efficacy**

Ninety-three percent of doers and 54% of non-doers expressing difficulties taking children to the health center felt sure or very sure they could do so in spite of these difficulties (table 4). Thirty percent of non-doers felt sure or very sure they were unable to take their children to the health center.

**Additional analyses**

Additional analyses were conducted for the four positive deviant behaviors. Separate analyses about who provided negative advice to caregivers suggest that collectively, doers receive very little negative counsel about practicing any of the four positive deviant behaviors:

across all four behaviors, doers received negative advice five times (three times from the child’s grandparents, once from a neighbor and once from a friend). Non-doers were discouraged from practicing the four behaviors a total of 33 times. The most frequent sources of negative advice, in order, were grandparents (accounting for about half of all negative advice), health workers, the elderly, and other family members.

From a research and programmatic standpoint, it is of interest to know whether a few individuals practice multiple positive deviant behaviors or many individuals practice a few such behaviors. Nearly all individuals engaged in at least one positive deviant behavior. About one-third of caregivers practiced a single positive deviant behavior. A little more than half practiced two or three behaviors, and 10% engaged in all four positive deviant behaviors.

It is also important to determine whether doers clustered in certain communes. Additional analyses suggest that caregivers from one commune were significantly more likely to practice multiple positive deviant behaviors (p values for Tukey’s honestly significant difference test comparing the high scoring commune to the two lowest scoring communes were .032 and .015, respectively). The mean number of positive deviant behaviors

caregivers practiced in each of these communities was 3.6, 2.5, and 2.4, respectively. An examination of the statistical association between behavioral outcomes suggests that only feeding child positive deviant foods and handwashing were correlated; there were no associations between any other behaviors.

## Discussion

Results from this study were used to develop a quantitative index that measures the impact of behavioral determinants—including knowledge, beliefs and attitudes, norms and self-efficacy—on nutrition behaviors. Questions about beliefs and attitudes, including the one below, were developed to evaluate the strength of the caregiver's belief that practicing the behavior would lead to the stated consequence. The construction of questions was based upon the language doers used to describe the consequences of engaging in positive deviant behaviors.

Feeding my child eggs once a day will help my child grow healthy fast.

very likely \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ very unlikely

Fixed-item questions to gauge social norms were developed using a two-part question. The first asked about whether an individual important to the mother believed she should practice the behavior and the second part asked how strongly the mother felt about following the advice of the individual.

My mother-in-law thinks I:

\_\_\_ should feed child the same amount when he/she has diarrhea

\_\_\_ should not feed child the same amount when he/she has diarrhea

When it comes to how much I feed the child when he/she has diarrhea, I:

want to do \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ do not want to do what my mother-in-law says

Self-efficacy was measured by naming something non-doers cited frequently as a barrier to adopting a positive deviant behavior and by asking how able the person felt she could practice the behavior in spite of the specific barrier.

Parents in this area tell us that it is difficult to wash children's hands before every meal because parents and grandparents are busy. How able are you to wash your child's hands before every meal, even when you are busy with other work?

very sure I am able \_\_\_:\_\_\_:\_\_\_:\_\_\_:\_\_\_ very sure I am unable

## Conclusions

This qualitative research identified factors that distinguish caregivers who practice optimal behaviors from those who do not. The findings suggest that with the exception of giving positive deviant foods, doers are not necessarily privileged in ways that might keep others from adopting the same behaviors.

Results indicate that for all four behaviors, favorable social norms distinguished those who practiced each behavior from those who did not. Positive, reinforcing beliefs and attitudes were important determinants of every behavior except handwashing. Likewise, self-efficacy differentiated doers from non-doers for all behaviors except feeding during diarrheal episodes.

### Beliefs and attitudes

Results from this study were clear and consistent: doers were able to identify many benefits of feeding positive deviant foods, taking children to the health center, and feeding as much or more during diarrheal episodes. Non-doers rarely mentioned a single advantage of doing so. In future programming, health volunteers may be able to allay non-doers' concerns that positive deviant foods are difficult to digest (especially in large quantities) by continuing to use group-based rehabilitation sessions to demonstrate that children are capable of eating and digesting large quantities of positive deviant foods. Non-doers' concerns that certain foods—including fat, fish, fruits, vegetables, eggs, and "cold" foods—aggravate diarrhea may also be countered by demonstrating that it is possible to give larger quantities of food without increasing diarrhea. Testimonials from doers may also ease non-doers' concerns. Emphasizing what makes it easy to wash children's hands—including the observation that many children enjoy playing with water—can lead to greater adoption of consistent handwashing practices before meals.

### Social norms

Social norms were an important determinant of all four positive deviant behaviors. It is often assumed that husbands and in-laws negatively advise mothers who do not practice optimal caregiving behaviors. Findings from this research suggest that fathers, in-laws and others are more likely to fail to advise mothers about infant feeding and health than they are to provide negative advice. It may be that like mothers, other family members need to "see" the benefits of feeding positive deviant foods, washing children's hands before meals, and so on. Explicit programmatic efforts to include husbands and in-laws are likely to contribute to a supportive atmosphere for practicing such behaviors.

## Facilitators and barriers

In general, doers were more likely than non-doers to identify a variety of factors that facilitated practicing positive deviant behaviors and less likely to name barriers to engaging in positive deviant behaviors. Improved access—to positive deviant foods, to clean water, and to health centers—contributed to doers' ability to practice positive deviant behaviors. Doers were also more likely than non-doers to mention support from in-laws and others for practicing the behavior.

## Self-efficacy

Non-doers' self-efficacy is likely to be greatest when their beliefs and attitudes are largely favorable, when others—including in-laws and fathers—actively encourage them to practice such behaviors, and when they witness the changes resulting from adoption of positive deviant behaviors.

Results from this study suggest that in Viet Nam, program implementers should target in-laws and husbands to improve advice-giving about health behaviors. Non-doers' concerns about practicing positive deviant behaviors might be effectively allayed through group-

based interaction and testimonials from mothers who already practice such behaviors. Non-doers' belief in their own capability to practice positive deviant behaviors may be the greatest when their beliefs and attitudes are largely favorable and when others actively encourage the adoption of new health practices.

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