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Behavioral Study of Handwashing with Soap in Peri-urban and Rural Areas of Peru

By



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Executive Summary

Handwashing with soap plays a key role in strategies to reduce childhood mortality and morbidity associated with diarrhea. In the framework of the Global Public-Private Partnership for Handwashing with Soap, several countries have launched mass media campaigns in an attempt to modify hygiene behaviors and to promote the prioritization of the issue on public health agendas.

This study of handwashing practices using soap in Peru is part of the first phase of the campaign to reduce childhood diarrhea prevalence. It represents the preliminary study designed to collect the information necessary to design an appropriate national media campaign. In addition, the study collected baseline information on handwashing practices and the prevalence of diarrhea diseases and acute respiratory infections. The baseline data will be used to measure the expected changes in behavior, attitudes and knowledge with regard to handwashing with soap after the national media campaign is implemented over the next two years.

Method

This study provides preliminary anthropological and communicational data on handwashing with soap in the household and helps researchers to understand values, meanings and socialization associated with handwashing with soap, from the point of view of mothers who care for small children. This is also a business study of the soap market and mass media consumption patterns. The study used quantitative and qualitative methods to collect data for a representative sample of several regions of Peru.

After three and a half months of intensive work in peri-urban areas of Lima, Arequipa, Chiclayo and Iquitos, as well as in rural areas of the departments of Junín, Cusco and San Martín, the A.B. PRISMA research team completed the analysis of information collected from a variety of sources, which facilitated the comparison of the prevalence of handwashing practices, use of soap as well as soap and mass media consumption, with the underlying assumptions, motivations and attitudes regarding handwashing.

The representative sample for all regions consisted of 500 households with children under the age of five. Field researchers completed: (1) 500 structured observations of behavior, of six hours each during the morning and early afternoon; (2) 500 surveys of mothers or caregivers in the selected households to measure handwashing attitudes and knowledge, as well as soap consumption; (3) 150 schoolchildren interviewed in the schools located in the clusters within the study area; (4) 100 owners of small stores or sales posts selling soap in the sample clusters were surveyed; (5) two focus group discussions and at least six in-depth interviews took place in each area; and (6) five behavior trials of handwashing with soap in the home.

General characteristics of the participating population

Most families in the sample are poor and live in urban areas. Only a third live in rural areas, and 54% of households have at least two unmet basic needs — particularly those related to overcrowding and the lack of sanitation services. The study population has a much higher percentage of unmet basic needs than the national average. Nationwide, 29% of households were found to have at least two unmet basic needs in 2000.

The mothers interviewed and observed are generally young, with a median age of 29, and most are the spouses of the heads of households. The mothers have an average of 10 years of formal schooling. Thirty-nine percent worked during the week preceding the visit. Most are independently employed in the trade and service sectors.

Diarrhea prevalence in children under 10 years was 11% on the day preceding the survey. In 2000, the national average for children under five years was 15% according to the National Demographic and Health Survey (ENDES). With respect to signs of acute respiratory infection on the day preceding the survey, the findings were as follows: prevalence of cough, 46%; congestion or mucous, 60%; and rapid breathing, 4%.

Risk behaviors and handwashing practices observed

In total, 2,959 hours of household observation was completed. A handwashing event is defined as an intention to wash the hands with water, with or without the use of soap.¹ Observation results show that 29% of participants washed their hands after contact with feces, using soap 14% of the time. Regarding risk behaviors handling food, twenty-percent of the individuals observed washed their hands before coming into contact with food, using soap only 6% of the time.²

In the handwashing events observed, individuals rubbed their hands together more than 80% of the time and dried their hands on 50% of the occasions.

The mother is the family member most frequently exposed to risk events related to contact with feces (50%) and food (40%). The observations indicate that mothers are inclined to better handwashing practices related to feces. Mothers washed their hands 33% of the time after coming into contact with feces, using soap only in 19% of the cases. Mothers washed their hands 28% of the time before coming into contact with food, using soap 6% of the time.

¹ In this study, the word soap is used to describe a variety of products used to wash clothing, the body or dishes, such as laundry soap, bath soap, laundry detergent and dishwashing soap.

² According to the findings of case studies of peri-urban zones of Lima, the practice of handwashing in Peru has more than doubled in the past decade.

At the household level, children between the ages of five and 15 years are the second group in terms of handwashing frequency. In risk events involving feces, they washed their hands 29% of the time, using soap 11% of the time. For risk events associated with food, these children washed their hands 17% of the time, using soap 5% of the time.

Available handwashing resources and contexts

With respect to available household resources for the practice of handwashing, almost 60% of the households visited had running water, whether through a public network (43%) or a piped network (15%). All of the households (100%) had used at least one type of soap or detergent in the two weeks preceding the survey. The most commonly purchased products were detergent (90%) and laundry soap (89%). The choice of the type of soap or detergent to use for each chore or activity was associated with the attributes that mothers gave to each product: laundry soap for diapers and baby clothing, detergent for adult clothing, bath soap for bathing and baby skin. It is worth noting that laundry soap was the product most often used during the handwashing events observed.

The most popular bath soap brands among the study participants were Camay (20%), Neko (16%) and Palmolive (9%). The laundry soaps most consumed by the households were Bolívar, (45%), Marsella (12%) and Jumbo (12%). The detergents most consumed were Magia Blanca (22%), Ace (21%) and Ariel (21%).

The locations where signs of possible handwashing activity were observed included the kitchen (71%), patio or courtyard (59%), bathroom (30%), living room, dining room or hallway (11%) and the laundry area (10%). Of the total handwashing events observed (2,037), most took place in the kitchen or patio of the home (38% and 37%, respectively), with few observed in the bathroom (10%).

Factors that facilitate and hinder handwashing with soap

When identifying factors that promote handwashing with soap, different elements or conditions come into play. These are associated with preventing the contamination apparent in the environment and with avoiding negative social control. In a context in which water, soap and handwashing locations are available, the mother becomes the main actor responsible for associating handwashing practices with the concepts that promote the practice in an effort to achieve a sense of cleanliness and to establish the link between health status and dirtiness. Mass and interpersonal media also play a role in promoting the practice, especially in reinforcing the ideal of cleanliness and the women's role in achieving it.

Mothers describe the dirty world as one in which dark colors (black 86%, brown 30%) predominate, there is an odor of sweat (53%) and there are animals that eat garbage or that are on the ground or dirt (pigs 68%, dogs 43% and ducks 17%). The

ground, dirt and sand are elements that form part of the dirty world, as are feces, which are considered disgusting (both those of animals and adult humans). In contrast, the world of clean is one in which white predominates (87%), everything smells like soap (48%) or perfume (42%) and there are no animals.

With respect to the sensation of cleanliness, mothers report that they prefer to feel clean, fresh, agile, alert and happy as opposed to restless, uncomfortable, distressed, sticky and tired, which is how they feel when they are dirty. They generally wash their hands to keep them clean, avoid germs and remove dirt.

The practice of handwashing is reinforced by the concept that being poor does not mean being dirty. It is incorrect to say that the poor people in the study have no resources, because they do have soap and water in the home, as well as handwashing knowledge.

Almost all mothers maintain that dirtiness and feces in particular produce stomach ailments such as diarrhea. Cholera is the disease most closely associated with feces. Therefore, a person must wash his hands to prevent germs or bacteria (understood in general rather than clinical terms) from contaminating food and the mouth. Children are especially likely to come into contact with dirt.

Outside the house, the mother protects herself from the criticism of neighbors, relatives and especially teachers. According to many mothers, if a child goes to school dirty or with dirty notebooks, his mother may be publicly reprimanded. In general, having an unkempt child, that is, one who is unwashed and thin, is synonymous with being careless, one of the worst adjectives used to describe a mother.

By feeling fresh and happy, in other words clean, and by not being sick, a state of integral health is achieved. Moreover, if one is healthy and has the approval of others because he is well groomed, a productive, responsible and healthy person is socially constructed.

Important factors that inhibit handwashing with soap include the multiple household chores of the mother, which compete for the time required to ensure children's cleanliness. Likewise, mothers believe that water and soap resources are limited. This is especially true in rural areas.

In addition, mothers believe they must ration resources because children are fascinated with playing with soap and water and therefore waste them. On the other hand, handwashing with soap more than three times per day is perceived as an exaggeration, and can lead to dry skin and food infused with a soapy smell.

Study results suggest that mothers do not appear to view themselves as contaminators. They report that it is only necessary to use soap when dirt is evident, that washing well with water is sufficient, that they are careful after defecating and therefore do not come into contact with feces, and that they are already in contact

with soap and water when they do laundry, for example, and therefore do not need to wash their hands.

Description of the target audience and media consumption

Mothers make up the primary target audience, both because of their social role as the individuals in charge of caring for the children as well as for their influence in buying soap. With respect to the secondary target audience there are two areas: (1) within the household which includes fathers of children, siblings over the age of five years and maternal grandmothers who support the mother in childcare activities; (2) within the community which includes health care workers who are recognized as an information source by mothers (both for consultation and as a spontaneous source of information).

Mothers believe they are the main people responsible for teaching hygiene habits and that childhood is the best time to instill these habits. They believe that the home is the place to learn these practices. Respondents reported that punishment (physical punishment or verbal abuse) is the most efficient way to teach hygiene practices. Adults are viewed as already developed and therefore difficult to change, although the mothers recognize that they have access to multiple information channels. They report that experimentation is a relatively effective form of adult learning.

Mothers report that the two most important sources of information about the care and hygiene of the child are the health facility and the maternal grandmother.

Six of every 10 women reported participating in social situations with their peers during the month. In rural areas this number increased to eight out of 10.

Regarding media communication consumption, respondents consumed radio slightly more than television. Radio consumption tended to be higher in rural areas (80% versus 76% in urban areas). In contrast, television had a greater presence in urban areas (88% versus 35% in rural areas). In general, consumption of both media dropped during the weekends. Radio consumption fell from 99% during the week to 74% on the weekends. In rural areas, consumption remained constant during the week and on weekends. In terms of programming, the women participating in the survey preferred melodrama. This was evident in their consumption of romantic music, soap operas and the recall of advertising that included related elements (soap opera actors/storytelling).

Women report that they use both media (radio and television) for entertainment (76% radio/88.3% television) and information (44% radio/32% television).

Radio consumption is very fragmented. Respondents listened to more than 50 stations, many of which are local. National radio stations with high consumption rates included RPP (21%) and Radio Caribeña (16%). The analysis at the local level demonstrated the importance of local radio stations, particularly in rural areas

(representing 86% of consumption). In this media, most of the women interviewed (more than 70%) reported a preference for music programs.

With respect to advertising message recall, respondents tended to remember detergent (88%) and laundry soap (71%) commercials. The best recall was for soap opera actor Salvador del Solar (22%) and the cleaning and whitening properties of the products.

The types of music most often recalled were tropical (33%), Andean (25%) and romantic (24%). The main musical personalities recalled were Gianmarco (urban) and Dina Paucar (urban and rural areas).

The secondary audience, defined as fathers of the children, preferred radio (81%) to television (76%). Compared with mothers, fathers had a slightly greater preference for news formats, which explains their higher consumption of RPP.

School-age children had a consumption of over 80% of radio and television. Radio Caribeña was the most popular radio station and América Televisión (54%) was the preferred television station. Cartoons were children's favorite programming (47%).

Conclusions

During their morning routines, Peruvian families wash their hands during critical events associated with feces or food approximately one-fourth of the time. Handwashing with soap is much less frequent, occurring once for every 10 risk events. The presence of soap in all households and running water in more than 50% of them does not guarantee frequent handwashing with soap; however, it does provide a favorable context for a possible future increase of the practice.

A higher percentage of handwashing with soap was observed during risk events involving feces than during risk events involving food. Survey participants' reported knowledge of when handwashing was necessary seems to contrast with their observed behavior. For example, although mothers reported that handwashing was most necessary before eating, they washed their hands more often after coming into contact with feces. This suggests that the automatic reaction to the odor or appearance of feces motivates handwashing more so than does the knowledge of the importance of handwashing before eating. In risk events involving food, mothers washed their hands more frequently at lunchtime than at other times of the day.

This pattern also occurs with school-age children. The children interviewed recalled the need to wash their hands before coming into contact with food more often than after coming into contact with feces. In the observations carried out, however, school-age children washed their hands more frequently during risk events involving feces than during those involving food.

Promoting proper handwashing techniques is not a priority since most participants washed their hands by rubbing them together and dried them in half of the cases.

Laundry soap is the most commonly consumed soap product and the only one whose purchase did not vary significantly in the different areas studied, be it urban or rural. It is the product most often used for handwashing.

Motivations for handwashing with soap involve different elements or conditions associated with preventing the contamination apparent in the environment, as well as avoiding negative social control. In a context in which water, soap and handwashing locations are available, the mother becomes the main actor responsible for teaching handwashing practices, along with the concepts that motivate it, in an effort to achieve a sense of cleanliness and to establish a link between health status and dirtiness. Mass and interpersonal media also play a role in promoting handwashing, especially in reinforcing the ideal of cleanliness and the women's role in achieving it.

Factors that inhibit handwashing with soap include the multiple household chores of the mother, which compete for the time required to ensure children's cleanliness. Likewise, mothers feel that soap and water resources are limited, particularly in rural areas.

Mothers comprise the primary target audience because of their role in caring for children. They are the individuals who practice handwashing most frequently and therefore serve as socialization agents because they perform a practice to be imitated. In addition, mothers transmit explicit messages to encourage handwashing practices. They also choose and buy soap and control its use within the household.

In the household, fathers, siblings over the age of five and maternal grandmothers make up the secondary target audience because they support the mother in child care. In the community, health care workers are targeted because they are an acknowledged source of information, whether selected or spontaneous, for mothers.

Mothers listen to the radio more often than they consume television. They demonstrate a preference for music entertainment over news programs. Radio consumption is distributed among more than 50 radio stations, many of which are local, especially in rural areas. Preferred national radio stations include RPP and Radio Caribeña.

The melodrama genre is preferred by the women, as evidenced by their consumption of romantic music and soap operas, as well as their recall of commercials that include sentimental and tragic stories.

1. Background

The study of handwashing practices in Peru is part of a larger strategy being implemented in different countries to decrease the prevalence of childhood diarrhea, in the framework of the Global Public-Private Partnership for Handwashing with Soap. The behavior study is a formative research project that permits the collection of information necessary to develop an appropriate national communication campaign. It also serves to collect baseline data, which will be used to measure changes in behavior after the communication campaign. The nature of this proposal implies a balance between: (1) a preliminary anthropological investigation into the values, meanings, behaviors and channels of communication and socialization regarding handwashing with soap from the point of view of female caregivers of small children; and (2) a market analysis of the consumption of cleansing products and mass media among the population of the sample.

Diarrhea affects 15% of children under five years of age in Peru, especially in rural areas of the rainforest and highlands, and among children whose mothers have little schooling.³ Lima also reports an alarming incidence of diarrhea. Children living in peri-urban areas of Lima may average up to ten diarrhea episodes per year.⁴ The repercussions of this infection are clearly evident in the retarded growth and development of these children and are closely associated with the chronic malnutrition observed in the Peruvian child population.

Not only does diarrhea affect children's health, it also has an impact on the family economy. In an internal study conducted by PRISMA, it was estimated that the treatment and recovery from an average diarrhea episode required approximately 20% of the monthly income of poor families.⁵ The majority of Peruvians are poor.⁶

To combat diarrhea, actions must be taken to expand access to water and sanitation services. Thirty percent of urban areas and 60% of rural areas⁷ in Peru still do not have water and sanitation infrastructure. Moreover, water and sanitation programs must be accompanied by methodology strategies focused on personal and household

³ Data for the 15 days preceding the National Demographic and Family Health Survey (ENDES) for 2000.

⁴ Lanata, C. "Problems in measuring the impact of Hygiene Practices on Diarrhoea in a Hygiene Intervention Study". In Cairncross, S and Kochar, V. *Studying Hygiene Behaviour*. Sage Publications Inc. 1994

⁵ A.B. PRISMA Study on the economic impact of diarrhea treatment. This research study, which is currently in implementation, indicates that the cost of treatment per diarrhea episode equals 16% and 12% of the monthly income of poor families of the highlands and rainforest, respectively, without taking into account the mother's time. When the mother's time is taken into account, the cost of treatment per diarrhea episode is 25% and 19%, respectively.

⁶ 54.8% of the population is poor, according to the ENAHO survey, fourth quarter 2001

⁷ MoH, Sector Policy Guidelines 2002-2012; Public-Private Partnership for Handwashing with Soap in Peru, 2002; ENDES 1992, 1996, 2000.

hygiene behavior changes.⁸ The technological adaptation of infrastructure alternatives⁹ to ensure their appropriateness and acceptance by beneficiaries is not the only challenge. Individuals with the same economic and sanitation infrastructure conditions may vary significantly in their behavior. Hygiene practices also play a decisive role in fecal-oral transmission.

Handwashing has received significant attention in efforts to promote better hygiene.¹⁰ The protective effect of handwashing at critical times is multiplied when soap is used. Handwashing plays a key role in preventing person-to-person fecal transmission and water and food contamination, even more so because it combats one of the most aggressive enteropathogens: *Shigella*.¹¹

Small-scale studies have found that the presence of soap in the household is a determining factor of protection when it is widely used in household tasks such as laundering and personal bathing, and not even necessarily for handwashing.¹² Additionally, it has proven to be the only protective measure, being more effective than other hygiene practices in a context of multiple contamination channels.¹³

As compared with other preventive measures, handwashing has been shown to have a much greater impact on decreasing the incidence of diarrhea.¹⁴ It is estimated that water and sanitation programs reduce morbidity from diarrhea by less than 25%, while interventions to promote handwashing lead to decreases between 14% and 48%. Thus, combining these measures will lead to a reduction of morbidity due to diarrhea between 35% and 50%.¹⁵

There are few direct observation studies in Peru on the prevalence of handwashing with soap. Three studies were carried out in the 1990s in shantytowns of Metropolitan Lima. Researchers recorded an incidence of 11% to 13% of events associated with the interruption of fecal-oral contamination.¹⁶ Soap and detergent were found in 77.4% of the households studied. Average consumption was 8.9 grams of soap for the three-day observation period.

⁸ CARE- PAS La Educación en Salud e Higiene en los proyectos de Agua y Saneamiento. Lima, 2000

⁹ Almedon, A et. al. Hygiene Evaluation Procedures. Approaches and Methods for Assessing Water and Sanitation- Related Hygiene Practices

¹⁰ Yeager, BAC et.al. "Defecation practices of young children in a Peruvian Shanty Town." Social Science and Medicine, vol. 49; 4, 1999.

¹¹ In the F diagram used to describe fecal-oral transmission routes, handwashing is a secondary barrier that blocks the passage of germs from the fingers to food and directly to the child. Almedon, A. Op.cit.

¹² Peterson, EA et.al. "The effect of soap distribution on diarrhoea: Nyamithuthu Refugee Camp" International Journal of Epidemiology 1998;27:520-524

¹³ Lanata, C. Op. Cit.

¹⁴ Curtis, V. and Cairncross, S "Effect of washing hands with soap on diarrhoea risk in the community: a systematic review," The Lancet. Infectious Diseases. Vol 3, May 2003

¹⁵ Black, RE. Lanata, CF. "Epidemiology of diarrhoeal diseases in developing countries"; Curtis, V. Cairncross, S. op. cit.

¹⁶ Gilman, RH, et al. "Water cost and availability: Key determinants of family hygiene in a Peruvian shantytown" American Journal of Public Health. Nov 1993, Vol. 83, N°11; Huttly, SRA et al. "Observations on handwashing and defecation practices in a shanty town of Lima, Peru" Journal of Diarrhoeal Disease Research 1994 Mar;12(1):14-18; Yeager, BAC et. al. Op. Cit.

In addition, it became mandatory to include questions regarding the specific times in which handwashing was practiced in all assessments of mother-child health in Peru. The goal was to determine the level of handwashing knowledge and indirectly, the times when handwashing took place, following surveys of the population participating in studies or interventions. In a recent nationwide study emphasizing rural areas and urban areas other than Lima, caregivers of children under the age of three years more frequently recognized the need to wash their hands during risk events involving food than during events involving feces.¹⁷

Moreover, market studies in Peru show that the use of soap is very widespread among most population sectors, including low-income groups. More than 96% of the population of Metropolitan Lima uses soap on a regular basis.¹⁸ Estimated consumption of soap or detergents is also high in rural areas, with differences in terms of coverage, sales volumes and variations in the brands used.¹⁹

Health education efforts have included activities to promote handwashing. Government agencies, civil society institutions and the target population have worked together in these efforts. Despite this progress, the information on hand hygiene focuses on bacterial contamination. There are serious obstacles to the successful transmission of concepts that are almost non-existent in the target population, as well as major distortions in terms of graphics and texts.²⁰ In addition, the importance of using soap is not necessarily made explicit in the handwashing messages.

Communicating personal hygiene information is a critical, complex process.²¹ The language, cultural codes, symbols and interests of beneficiary populations must be incorporated.²² It is therefore essential to emphasize motivational factors that contribute to a positive image of the target population, as well as interventions that promote regular handwashing.

Likewise, it is crucial to identify the different communication channels that intervene in the promotion of appropriate practices. At the interpersonal level, previous studies in rural and peri-urban areas of the country found that the size of the social network depends on the age and educational level of the individual, being largest for mothers between the ages of 25 and 40 years with higher educational levels and who speak

¹⁷ A.B. PRISMA PANFAR Evaluation. Final report, 2003 When asked when they should wash their hands, mothers recalled the need to do so after contact with the feces of children or adults in 40.6% of the cases while they reported that handwashing should be practiced during activities associated with food, including food preparation and eating, in 96.2% of the cases.

¹⁸ Apoyo op.cit. Sample of 220 mothers

¹⁹ 86.4% of families surveyed showed the soap in use, while 42.8% mentioned that they use it to wash their hands and for other uses such as laundering and personal bathing. In addition, 78.5% buy local brands of soap weekly, which include San Roque, Lavandina, Lagarto, Negrita, Aroma and Patito. Some mentioned the brands Bolívar, Marsella and Jumbo. While these brands cost between 1.3 and 2.5 nuevos soles, prices for local brands range from 0.5 to 1 nuevo sole apiece. Forty-six families in 10 clusters were interviewed. A.B. PRISMA baseline evaluation on child health and nutrition- Cangallo Province. Study in progress.

²⁰ For example, the text and graphics of manuals such as the PAHO/WHO's Higiene en la vivienda. Serie Educativa: Higiene y salud ambiental. La Paz, second edition, 1999.

²¹ Concepts of hygiene and disgust are even mentioned in political, social and religious terms as a way to exclude minority groups.

²² CARE-PAS "La Educación en salud e higiene en los proyectos de agua y saneamiento." Lima, 2000.

Spanish. Moreover, in all areas studied, the average size of the network was larger among study participants who watch television. The smallest networks are made up of relatives, while the largest are of friends.²³

With respect to mass media consumption, mothers use radio and television more in peri-urban areas than in rural ones.²⁴ Mothers report that they prefer to listen to the radio in the morning, and to watch television in the afternoon, although there are variations throughout the week. For the Lima audience, these media are used largely for entertainment, in contrast to their use as information sources in rural areas.²⁵

²³ PSNB Encuesta de conocimientos, actitudes y prácticas en salud y nutrición infantil. Lima, Cusco, Piura, Cajamarca. 1997 A.B. Prisma study.

²⁴ ENDES 2000

²⁵ PSNB op.cit.

2. Objectives

This formative research study has the following objectives:

General Objective

To build a body of relevant information on hygiene practices and concepts in different Peruvian populations that can serve to: 1) design an effective communication program on handwashing with soap targeting a specific audience; and 2) obtain baseline data to evaluate the changes resulting from the campaign in handwashing with soap and the prevalence of diarrhea and acute respiratory infection in children under the age of five years.

Specific Objectives

- a. To verify different aspects of handwashing practices, specifying:
 - Handwashing practices
 - The current availability of soap, by type of soap
 - The existence of a location used for handwashing
 - The context in which these practices take place
- b. To identify the factors that motivate, facilitate, hinder or inhibit handwashing and other appropriate hygiene practices.
- c. To determine the population's level of awareness of the link between handwashing and improved family health.
- d. To identify the target audience of the handwashing promotion campaign.
- e. To identify current communication channels.

3. Approach

The conceptual approach for this research topic identifies four areas of interest based on the symbolic field of cleanliness and order as opposed to one of a dirty, messy world.²⁶ Initially, researchers determined that the following factors intervened: (1) available water and soap resources, as well as locations appropriate for handwashing; (2) the meanings, knowledge, attitudes and motivations with respect to handwashing with soap, in which the concepts of cleanliness, appearance, health care, status and sensory cues play a key role. These concepts become practices through: (3) socialization and learning of the practice, through explicit messages as well as observed behavior. The final concept is that (4) communication channels have an impact in all the participating areas.

Available resources

Water, personal cleansing products and an appropriate space-time context are the basic elements required for daily hygiene practices.

Achieving access to sources of safe, nearby water is difficult in environments that do not have this basic need.²⁷ The low-income population perceives that access to water is crucial because of: (1) the vital functions it fulfills for people, plants and animals, “*without water we do nothing*”²⁸; (2) the decrease in women’s or children’s workloads because “*they don’t have to carry water*”; (3) the status reasons “*(...) having water at the front door would make me proud*”; and (4) the health reasons, “*without water, people get sick.*” Nevertheless, it is the amount rather than the quality of the water within the household that families associate with the decrease in the incidence of diarrhea, according to previous studies.²⁹

As previously mentioned, there is a significant demand for soap.³⁰ It is used most frequently for laundering, rather than for personal bathing and handwashing.

²⁶ Douglas, M. Purity and Danger: An Analysis of Concepts of Pollution and Taboo. Routledge Classics, 2002, New York and London.

²⁷ The main political organizations of peri-urban groups in Lima were formed to demand basic services, mainly water and sanitation services.

²⁸ This and the other quotes are by rural inhabitants of Cajamarca and San Martín and were collected by A.B. PRISMA as part of the Integral project for the co-management of rural water and sanitation. Baseline. March, 2003.

²⁹ Gilman, R.H. op.cit. ; Curtis, V. Op. cit. ; Black, R and Lanata, C op. cit.

³⁰ The word soap is used as a simplification of the different types of cleansers that may be used for handwashing in households: hand soap, laundry soap, laundry detergent, dishwashing soap.

The availability of space and time for hygiene practices has to do with the spatial organization of the domestic environment, as well as with the timing of the cleansing routine. Appropriate living spaces do not necessarily include a specific place for bathing and personal hygiene within the home, especially in rural areas. The proximity of the water source plays a role in these contexts by influencing the location where personal cleansing takes place.

Meanings, motivation, benefits

While the above elements are necessary, they are not sufficient. Three main fields of meaning and motivation underlie and guide behaviors: (1) cleanliness; (2) aesthetics and personal appearance; and (3) health. In the case of small children, these categories are included in the concept of “care.” Thus a well-cared for child is one that is clean, healthy and well groomed, in addition to being well fed.³¹

The concepts of cleanliness and dirtiness represent a wide field of meaning. For those who are educated and socialized in a western tradition, the concepts of clean and dirty have been drastically transformed by the knowledge of the transmission of bacteria and microorganisms “so much so that it is difficult to think about dirt except in a pathogenic context.”³² However, underlying this dominant concept is the persistent definition of dirt as a “matter out of place,” which leads to the understanding of order and disorder, where dirt interferes with a pre-established order, and “where order implies the rejection of inappropriate elements.”³³

Thus, the field of dirty covers everything rejected by order, in accordance with the context and circumstance. For example, placing shoes on a tabletop would be considered dirty, but wearing shoes would not. It is a topic with intrinsic sociocultural variations.³⁴ For example, it is more likely that people living in urban areas would perceive keeping guinea pigs in the kitchen as dirty because their notions of spatial order and co-existence between animals and humans (with the related associations between feces and pathogens) are different than those of rural inhabitants.

Cleanliness is also associated with the state of good health, just as dirtiness is related to the appearance of disease, such as diarrhea.³⁵ The “dirtiness” associated with diarrhea is something external, something that comes from outside — from the deficient, dirty environment — through dust, objects or flies. Feces are considered dirty, not necessarily because they contain microbes, but because of their foul odor.³⁶

³¹ A.B. PRISMA Formative research on child care. Final report. 1998. Information collected in Independencia, in Lima’s Northern Cone.

³² Douglas, M. Op.cit.

³³ Douglas, M. Op. cit.

³⁴ But which according to Curtis, V. would also contain elements of genetic transmission, where repelling the dirty would become a protection measure against contamination. Curtis, V. “Dirt, disgust and disease: is hygiene in our genes?” www.lshrm.ac.uk/dcvbu/staff/dirt_article.htm

³⁵ Anderson, A. “El dominio cultural de las enfermedades en Cuyo Grande.” Master’s thesis in anthropology. Catholic University of Peru. Lima, 2001

³⁶ Yeager, BAC et. al. 1999

The notion of dirty is also associated with the presence of dirt particles, stains or unpleasant odors.³⁷

Personal appearance is also directly related to cleanliness. Studies in Lima report significant differences in handwashing habits among children over the age of 10 years as compared with their younger siblings.³⁸ The studies also show that mothers are most careful about their personal hygiene when they groom themselves before going out.³⁹ In addition, other studies have demonstrated that the characteristics of smell, gentleness and freshness are associated with the type of soap desired for handwashing.⁴⁰

Socialization and hygiene practices

Surrounding this set of meanings and values is the role of socialization mechanisms in children's hygiene practices, whether expressly transmitted or indirectly observed in their mothers, caregivers or other individuals in their environment. Since the first years of life are crucial for developing hygiene practices, it is necessary to determine what guidance and information are given to the child, what he can already do and what is expected of him in terms of handwashing behavior.

Communication channels

Different channels of mass media, interpersonal or group communication have an impact on the interpersonal action between mothers and children — the primary target audience — modifying or supporting underlying cultural contents. In this context, the secondary and tertiary target audiences can be identified, which exercise an influence on the actions and attitudes of mothers and caregivers of small children.

In a changing context,⁴¹ different forms of communication exist that are activated by individuals and families.⁴² These communication channels can be: (1) Interpersonal, where social networks outside and within the family become the main support for the mother; (2) Group, which refers to participation — whether formal or informal — in community associations, mothers' clubs, sports clubs, religious or health organizations as well as service and development projects. In these contexts, mothers learn about other experiences and begin to accept new ideas or join new reference groups. Government health and education agencies are included in this category; and

³⁷ Anderson, A. "Sistematización de intervenciones para la prevención de la diarrea infantil". Partial report. A.B. PRISMA

³⁸ Gilman, RH op.cit.

³⁹ Huttly, SRA et. al. op.cit

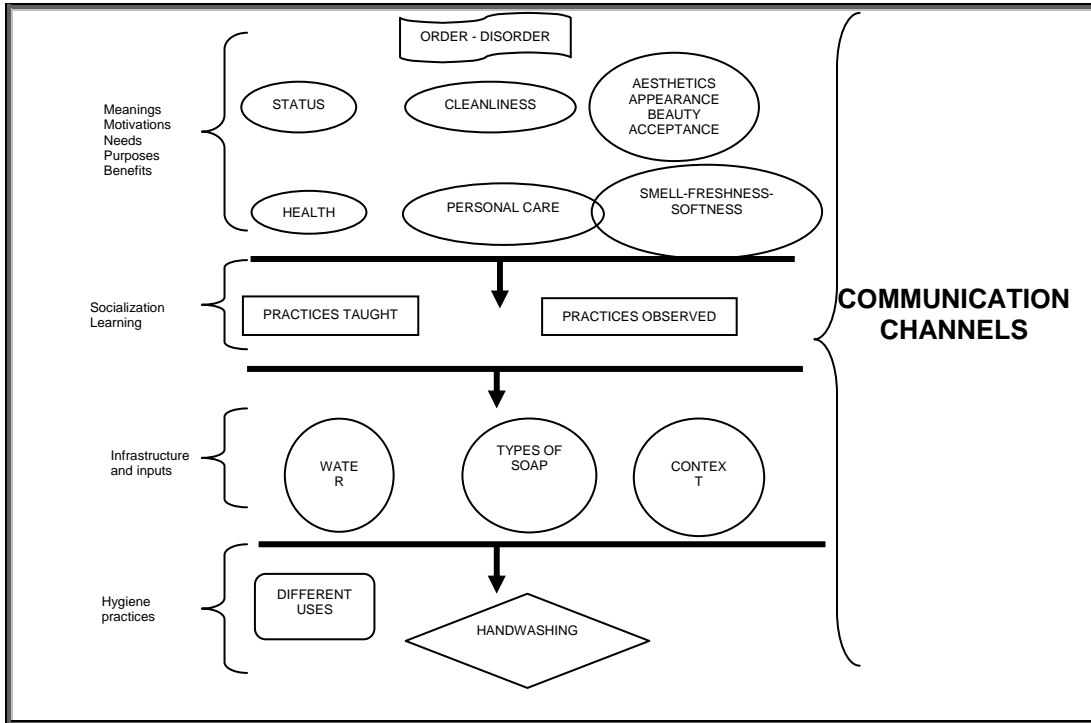
⁴⁰ UNICEF/LSHTM "Happy, Healthy and Hygienic," 1998

⁴¹ Even in rural areas, a process of modernization is evident, which includes expanding coverage of mass media and different public and private services.

⁴² Curtis, V. et.al. "Dirt and diarrhoea: formative research in hygiene promotion programmes," In Health Policy and Planning; 12(2): 122-131. 1997

(3) The mass media, specifically radio, television and print media such as magazines and newspapers.

Diagram 1. Preliminary conceptual diagram



Source: prisma, based on previously mentioned references

4. Method

4.1. Design type

Researchers collected data in an effort to approach the problem from different dimensions and depths. In other words, they collected information on the population that permits describing and measuring patterns of behavior and consumption in the areas studied. In a complementary manner, data were collected on some specific cases to broaden understanding of the findings. This formative research provides an overview in which the processes under study are not only described but also explained. The study emphasized the perspective of the population participating in the study by contrasting the practices observed with discussions on meanings and motivations associated with the practice of handwashing.

Two methodological strategies were combined for this purpose: (1) an extensive survey on the specific topic with a statistically representative population sample; and (2) an in-depth analysis of the more difficult, complex topics.

4.2. Study area

This research study was carried out in: (1) marginal urban areas in Lima's northern cone, as well as on the outskirts of the cities of Arequipa, Chiclayo and Iquitos; and (2) rural areas of the departments of Cusco, Junín and San Martín.

Results have been presented at the level of rural and urban sub-areas only for purposes of exploratory analysis, given that the characteristics and behaviors found differed markedly and could be important for designing future communication strategies.

4.3. Target audience

The target audience was composed of families with children under the age of five years that reside in the aforementioned marginal urban and rural areas. School-age children in the household during the observation period were also observed to learn about their handwashing practices. Children of this age play an influential role in family decisions, for which reason they form part of the secondary audience, along with the spouse, other family members and neighbors.

In addition, individuals responsible for retail sales locations where soap is sold were interviewed to provide information on the consumption of the different household cleansing products.

4.4. Development, organization and implementation of field research

Since the sample design had multiple stages, the field work was organized as follows: Once contacts were established and presentations were made to key authorities in each cluster, families with children under the age of five years were located through household visits, during which mothers were invited to participate in the study. Mothers or caregivers who agreed to participate were listed for subsequent selection for surveys and observations.

4.5. Description of the content and application of methodological techniques

4.5.1. Household surveys

This was a descriptive, transversal study of diarrhea prevalence in children under five, soap use, handwashing practices of caregivers of children as well as mass media consumption.

The study population was composed of women responsible for caring for children under the age of five years residing in the study area.

4.5.1.1. Sample size

The sample was calculated to estimate a prevalence of 50% in the behaviors of soap use in the handwashing practices of the child caregiver. The sample had an estimated sampling error of $\pm 5.5\%$, with a reliability rating of 95%, and further corrected by a cluster sampling design effect of 57%, which produced a total of 500 surveys.

Sample distribution was made on the basis of the representativeness of each area with respect to the study universe. This weighted factor was provided by the National Statistics and Information Institute when the clusters were selected in the areas mentioned. Urban areas such as Lima concentrated the largest proportion of the sample as compared with the departments that provided rural sample information.

Table 1. Sample distribution for the study area, by type of instrument

Areas	Sample		Sub-samples	
	Household surveys	Household observations	School sample	Shop sample
Lima northern cone	130	130	40	28
Junín rural area	30	30	9	9
Cusco rural area	36	36	13	8
Chiclayo peri-urban area	90	90	25	17
Arequipa peri-urban area	84	84	25	17
Iquitos peri-urban area	86	86	26	17
San Martín rural area	44	44	14	8
Total	500	500	152	104

4.5.1.2. Sampling process

A multiphase selection process was used to select the homes evaluated. The sampling frame was the population in the areas selected by the client.

The first phase consisted of a random sample of the household clusters in the selected areas. Thirty clusters were distributed over the entire study area — six in Lima and four in each of the other six selected areas.

During the second sampling phase, researchers selected households within the clusters. During the third phase, a random sample was taken within the households with more than one child under the age of five years.

The sampling frame definition and cluster selection were jointly developed with the National Statistics and Information Institute. The sampling frame was composed of all population centers in the study area. Groups of households comprised the clusters. Eligible households were those with at least one child under the age of five years that was cared for by a woman. Since each area had a different population size, the clusters provided a different contribution to the sample in accordance with their location.

Since population size differed per area in the area of influence, there was a different percentage per cluster in the sample.

4.5.1.3. Units of study

There are three types of units of study: sampling units, observation units and units of analysis.

The sampling units are based on the design of the multiphase sampling. The first sampling unit is the household cluster; the second sampling unit is the household meeting the criteria for inclusion in the study within each cluster.

The units of observation are based on the information of interest. Household forms are used to obtain information from mothers and children under the age of 10 years regarding their knowledge, attitudes and practices with respect to soap use, handwashing and the association of the practice with good health. They are also used to assess mass media consumption, dwelling characteristics and general data on household members.

The units of analysis are the households where the assessment is made.

4.5.2. In-depth interviews

Relevant terms and concepts for understanding the broad subjects of hygiene and cleanliness were derived from other previous techniques that permitted fluidity and spontaneity, as well as the projection of images or photos. With these techniques, the interviewer built with the participant the knowledge, motivational, situational or access elements that form part of the personal and domestic environment of cleanliness and specifically handwashing with soap. The interview was recorded with the consent of the participating mother for later transcription and processing. Forty-eight in-depth interviews were carried out.

4.5.3. Behavior trials

This methodological exercise consisted of persuading a mother to practice handwashing with soap at a critical time, with a recall stimulus, for a period of five days in her home. After the initial visit, researchers again visited on the third and fifth days. Researchers assessed message recall, the practices carried out and the steps followed. Thirty-four household behavior trials were carried out.

4.5.4. Free association

This introductory and exploratory technique was used to identify the words associated with clean, dirty, beauty, grooming and personal hygiene. This technique was incorporated into the household surveys.

4.5.5. Image projection

Using four selected photos depicting groomed and ungroomed children, interviewers asked participating women to state what they did or did not like about the image, and what they thought the person was doing or what was occurring in the scene. Participants' spontaneous responses served as input for future analysis.

4.5.6. Focus group discussions

An average of eight mothers participated in each focus group discussion. The technique was used to learn more about the motivating factors for handwashing with soap. Audio recordings and minutes were made of the sessions. The discussion was

reconstructed in thematic matrixes after each focus group discussion. Sixteen focus group discussions were organized.

4.5.7. Structured observations

Using a structured format, researchers observed the population's daily morning routine. They were instructed to observe the behavior of the child at home and his interaction with other family members. After six hours of observation, researchers provided guidance on some aspects of child nutrition and development.

Field researchers were trained to observe behavior associated with handwashing and were instructed to discreetly talk to mothers or help them with their chores unrelated to critical observation times. The events, times, instruments, verbal or physical cues, previous or subsequent activities, along with other points of interest, were recorded on a standardized form. Critical observation times were divided into events with risk of feces contamination and events with risk of food contamination. Handwashing with or without soap during the aforementioned critical moments was observed in mothers or caregivers, children under the age of five years, the school-age children present and other family members who interacted with the index child.

4.6. Methodological limitations and difficulties encountered

- The main limitation was the time available for the study, which affected the information collection phase. Terms of reference requirements were met. The data collected made it difficult to carry out more in-depth analysis.
- Household observation only covered a specific period of time (six hours), with an emphasis on the morning and early afternoon. This affected the observation of potential defecation events of adults. The existence of bathrooms with doors also limited the observation of handwashing events, particularly in urban areas, where bathrooms had indoor plumbing.
- While the percentage of rejection was small, the initial mistrust of the observer limited her mobility within the home. This was especially apparent in urban households. Applying the household survey after the observation period helped to ensure accurate responses because it gave the field researcher the opportunity to earn the trust of participants during the observation period.
- Some shop employees did not provide information when they learned that researchers did not work for a soap supplier or that they were not going to receive anything in exchange for the information.
- The application of the behavior trial in the home did not provide additional elements for comparing data collected during interviews and focus group

discussions because the information collected was similar to that already gathered.

- The use of the technique of showing photographs at the beginning of the interviews helped establish an atmosphere conducive to conversation. This is noteworthy because no previous relationship existed between researchers and study participants.
- The application of the home observation technique requires extensive training and standard practices among the team of field researchers. Showing videotapes of household observation considerably facilitates the effectiveness of this training and is indispensable for guaranteeing adequate data collection in the households of the sample.

5. Implementation Schedule

To meet study objectives, field work and data entry, processing and analysis were organized within the study design.

5.1. Organization of fieldwork

5.1.1. Pre-pilot phase

This phase began with the pre-pilot testing of the instruments proposed for the study in the marginal urban area of Ventanilla, in Lima. Researchers carried out six household observations and 12 household surveys, three surveys with schoolchildren and three with shop owners. Three mothers were also interviewed using the qualitative interview guide, and two daily morning routines were videotaped in two households, one in Ventanilla and the other in a rural area of Ayacucho. This material was used to adapt the instruments, which were subsequently approved by the contracting agency.

5.1.2. Training-selection phase

Once the instruments were approved, project staff began to train field workers. The process began with the selection of health care professionals, particularly women with previous experience in survey research and working in rural areas of the provinces. The training took place in the A.B. Prisma offices in Lima for 15 consecutive days. Staff strictly adhered to the training schedule, which was from 8:00 a.m. to 7:00 p.m.

Training covered several aspects of body and visual language to enable field researchers to work easily in the households. Training also addressed the objectives and themes of each point on the survey, the sample identification and especially the standardization of the data recorded during the structured observations. To this end, trainees learned key concepts, the contents of each question, as well as how to record data quickly and accurately. The use of videotapes of household observations, among other measures, helped standardize data collection because it enabled researchers to codify the events observed.

Field personnel were also trained in presentation techniques, as well as in the basic use of instruments to assess the psychomotor skills of children under the age of five years. Because researchers could not openly reveal the main purpose of the observation exercise, which was to observe handwashing practices, they justified their

presence by claiming they were observing the interaction between adults and children under five in the household. At the end of the observation period and after the survey was applied, the field worker was instructed to present the mother with her observations regarding the child's psychomotor development, along with some recommendations on nutrition.

Field investigators were selected based on the evaluation of their participation and interest during the training sessions, as well as their performance during the practice interviews, pilot test and daily quizzes on each topic developed. For the final evaluation, punctuality in the planned activities, discipline and overall behavior were taken into account. Fourteen people were selected. Three were also assigned supervisory and coding responsibilities.

5.1.3. Pilot phase

A pilot field investigation was carried out in San Juan de Miraflores District in Flores de Villa, on the outskirts of Lima. The pilot study was implemented for three consecutive days, during which field work was simulated. Households were selected and observations and surveys were carried out. In-depth interviews and focus group discussions were also implemented, and two more household observation sessions were videotaped. As a result of this learning experience, some of the study instruments were modified and observation events and code categories were defined.

At the end of the pilot phase, criteria were again made uniform with the help of the videotapes made in the pilot area of daily situations in which handwashing events and contact with water and soap took place. This effort served to validate the instruments for the subsequent field work.

5.1.4. Field work phase

For the field work, researchers implemented a systematic random sample of the households in accordance with the required cluster quota.

A total of 4,013 households were identified, of which 1,139 were deemed eligible for participation in the study. The households were distributed in seven areas. One hundred and forty-five (13%) of these households chose not to participate in the study. The quantitative field work was completed in 54 calendar days. The team of field researchers was divided into three smaller teams, each of which covered two areas. The entire team worked in Lima's Northern Cone. In this phase, the first information quality control efforts were implemented. The coder checked the instruments, confirming that forms were correctly filled in and that the information was consistent.

Three field workers worked for 25 days to collect qualitative data.

5.1.5. Data entry phase

After the first week of collecting data in the field, the data entry and information control systems were implemented. In the A.B. Prisma offices in Lima, the field work supervisor checked a random sample of the forms received. In addition, the keyboarding team noted errors in data recording. The data entry phase, including the double entry of information to correct typing errors, lasted 55 days.

Four individuals transcribed the audiotapes of interviews and focus group discussions, a process that took approximately three weeks.

5.1.6. Data analysis phase

After developing the analysis plan, which was validated by the scientific advisor of the Centers for Disease Control, the preliminary data from the first clusters visited were analyzed. This process took place during the first two weeks of October. This preliminary data analysis, which was shared with the Centers for Disease Control, permitted researchers to modify the analysis plan and identify the main themes. After field activities were completed, final tabulations were obtained during the first week of November. All research team members participated in the data analysis and thematic responsibilities were assigned to team members. The research team also analyzed the qualitative data, integrating sources and crossing the necessary information.

6. Relevant Findings

6.1. General characteristics of the population

The 500 families participating in the study averaged five members each, with slightly more women (53%). Most members were of working age (54%). Children under the age of five years accounted for 23% of the total.

Table 2. Distribution of the population by age group

Age group	n	%
Children, birth to 4 years	633	23
Children ages 5 to 14 years	580	21
People of working age (ages 15 to 64 years)	1,510	54
Individuals over the age of 64 years	55	2
Total	2,778	100

Most households had a male head of household (87%) with an average age of 38 years. A large percentage was literate and had a secondary school education (48%). The vast majority had performed paid work in the week preceding the survey (90%), of which 35% were employed as independent workers and 36% were workers in the services, agricultural and trade sectors (Table 3).

Mothers in the participating families were 29 years old, on average, and had completed an average of 10 years of study. Table 3 shows that 52% of the mothers were homemakers during the week preceding the survey, while 37% had performed paid work, mostly in the service and trade sectors. Mothers also were the caregivers of children and were observed and surveyed in this role.

Table 3. Economic activities of the head of the household and the mother caregiver

Characteristic	General population		Head of household		Mother	
	n	%	N	%	n	%
Predominant activity in the week preceding the survey						
Paid employment	925	44	450	90	188	37
Family labor	123	6	9	2	41	8
Homemaking	361	17	13	2	259	52
Study	603	29	-	-	4	1
Others	76	4	28	6	12	2
Total	2,088	100	465	100	500	100
Type of economic activity						
Agriculture	172	16	91	19	23	10
Livestock raising	29	3	6	1	10	4
Industry	125	12	54	12	23	10
Trade	234	22	76	16	84	36
Services	426	40	188	40	91	39
Construction	36	3	27	6	-	-
Others	36	3	23	5	1	1
Total	1,058	100	465	100	232	100

Researchers calculated the index of unmet basic needs using the data on the type of household dwelling and availability of basic services. They estimated that 54% of the households studied had one unmet need, while 18% had two. The main needs or deficiencies are overcrowding (34%), inadequate housing (23%) and the lack of sanitation facilities (17%). Comparing these data with national figures from 2002 revealed that the families participating in the study had a higher percentage of unmet basic needs than the national average.

Table 4. Percentage of households with unmet basic needs (UBNs)

	In the study sample	Nationwide *
Households with 1 UBN	54%	30%
Households with 2 UBNs	18%	11%

*Based on the 2002 ENAHO survey.

Eighty-percent of the households had electric lighting. Families cooked using gas (47%), firewood (30%) or kerosene (17%). Seventy-two percent had a functioning radio and 72% had a color or black and white television set. Nine percent of the households surveyed did not have a radio or television set.

6.2. Prevalence of diarrhea disease and acute respiratory infection

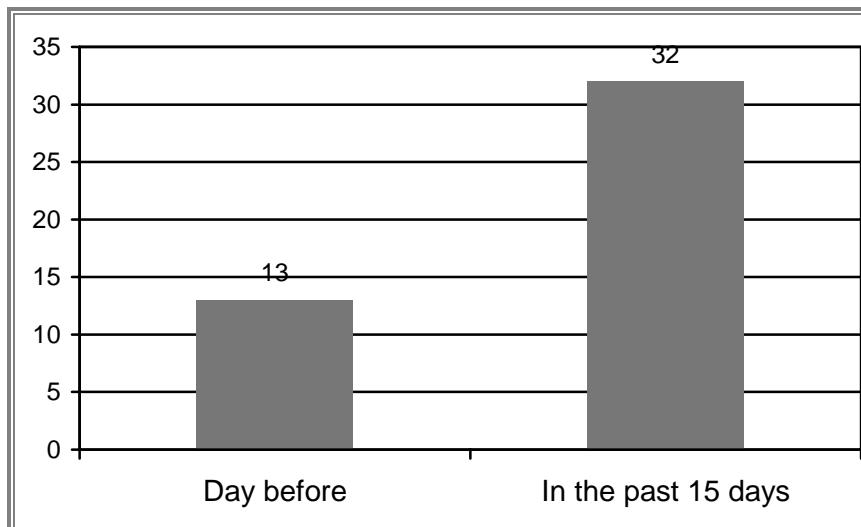
- *Specific objective of this section:* To determine the prevalence of acute diarrhea disease and acute respiratory infection in the child population under five years old, as well as that under 10 years old.

Baseline data for morbidity of acute diarrhea disease and acute respiratory infection in children under the age of five years and also under the age of 10 years are presented below.

Mothers' perceptions of the occurrence of diarrhea in their children during the period under study were closely correlated to the number of liquid stools they reported in their children (Table 14, Annex 1).

The prevalence of diarrhea in children under five years was 13% on the day before the survey and 32% in the two weeks preceding the survey. Compared with national figures (ENDES 2000), this percentage is slightly lower than the national average of 15% for diarrhea in children of that age on the day preceding the survey.

Figure 1: Prevalence of Diarrhea in children under five years of age

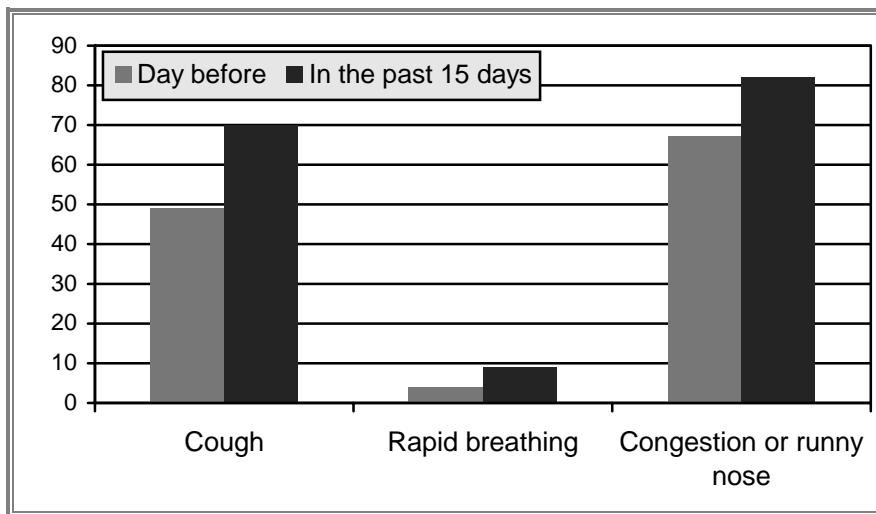


Children under the age of two had the highest incidence of diarrhea, with a rate of 18% on the day before the survey and 39% for the 15-day period preceding the survey (Table 14, Annex 1).

According to mothers, the prevalence of diarrhea in children under the age of 10 years is 11% for the day before the survey, rising to 27% for the 15 days preceding the survey (Table 14, Annex 1).

The study sought to identify the prevalence of three indicators of acute respiratory infection: cough, rapid breathing and nasal congestion or mucous. According to the mothers, for the day before the survey, children under the age of five years had a prevalence of 49% for cough, 4% for rapid breathing and 66% for congestion or mucous. For the two weeks preceding the survey, cough affected 70% of the children, rapid breathing, 9% and congestion, 82%. The child population in this study had a lower incidence of respiratory infection than the population participating in the national 2000 Demographic and Family Health Survey, which found that 20% of the children had a cough and rapid breathing in the two weeks preceding the survey.

Figure 2. Prevalence of acute respiratory infection in children under five years



The under-10 population had a prevalence of cough the day before the survey of 46%, which increased to 66% in the 15 days preceding the survey. Sixty percent of the children had congestion or mucous on the day before the survey, increasing to 75% for the 15 days preceding the survey (Table 14, Annex 1).

6.3. Different elements associated with current handwashing practices

- Specific objective of this section:* To examine the different aspects of handwashing with soap in an effort to respond to the first of the proposal's specific objectives. The data on household observations of handwashing practices in general are presented, followed by a description of the type of risk and social actor involved.

6.3.1. Handwashing behaviors observed

6.3.1.1. Risk events and handwashing in general

During the structured observations in the 500 households participating in the study, field researchers recorded events that included risk activities involving both feces and food, with or without handwashing, as well as handwashing actions associated with activities other than the risk situations mentioned. A handwashing event was defined by the existence of: (1) the intention to wash one’s hands, verbally or physically expressed; (2) the act of handwashing; and (3) the presence of water and soap during the event.

This report describes only the risks events involving feces and food, specifying the social actor involved, the occurrence of handwashing and the use of soap, the location where the practice was carried out, the type of cleansing product used — types of soap or detergent — the handwashing technique employed in terms of parts of the hands involved and the drying of hands. While researchers focused their observations on the mother or child caregiver, they also observed the handwashing behavior of other household members.

The study of handwashing behavior covered 2,959 hours of observation in the 500 households of the sample. A total of 7,723 events were observed. Researchers observed household activities for a median value of six hours, with a median of 14.8 relevant events recorded. During the observation periods, researchers recorded a median of two risk events involving feces and 11 risks events involving food.

Table 5. Median hours of observation

	n	Median	Average	Standard deviation
Observation hours in the household	500	6.00	5.86	0.34
Total events observed	500	14.83	15.45	6.25
Risk activities involving feces	328	2.00	2.15	1.31
Risk activities involving food	500	11.17	12.31	5.36

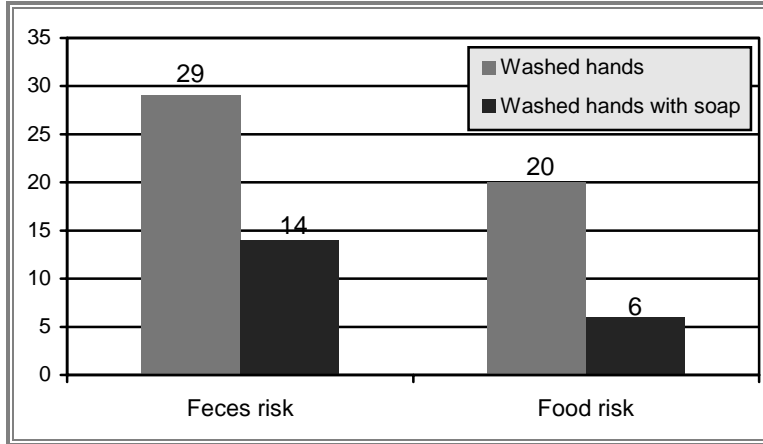
There were more observed risk activities of contact with food than those involving feces. Other types of contacts were observed because they involved contact with garbage or because they encouraged handwashing, such as the case of a child washing his hands after playing in the dirt.

Table 6. Description of activities observed

	n	%
Contact with feces	443	6
Contact with food	5,892	76
Contact with feces and food	263	3
Other contacts	1,125	15
Total contacts observed	7,723	100

Overall, a quarter of the events recorded involved a handwashing event (2,037 / 7,723). Handwashing occurred 29% of the time after risk activities involving feces. Soap was used in 14% of these cases (Table 2, Annex 1). Likewise, handwashing occurred before 20% of total risk activities with food. Soap was used in 6% of these cases (Table 7, Annex 1).

Figure 3. Occurrence of handwashing with soap observed, by risk type



In more than half of the study households, from one to four handwashing with soap events occurred. This appropriate behavior occurred sporadically during the risk activities observed. Furthermore, in many households, no family members were seen washing their hands with soap during the observation period. Very few households regularly practiced handwashing with soap during the observation visit.

Table 7. Frequency of handwashing with soap by household-

	N	%
None	185	39
From 1 to 2 events	184	39
From 3 to 4 events	77	16
From 5 to 11 events	27	6
Total	473	100

Participants washed their hands mainly by running water over them. The water came from a faucet, hose or a pitcher. Participants also frequently submerged their hands in standing water.

Table 8. Distribution of types of water used for handwashing

	N	%
Running water over hands:		
■ From a faucets or hose	811	40
■ From a pitcher	470	23
■ From a river or irrigation ditch	16	1
Water from containers	700	34
Others	40	2
Total	2,037	100

With respect to the type of handwashing observed, most individuals wash by rubbing their two hands together and wetting them completely. Half of the people did not subsequently dry their hands, while the other half used specific cloths, kitchen towels, or their clothes, to dry them. Therefore, drying of the hands appears to be a more widespread practice than is using soap in the study population.

Table 9. Parts of the hands washed and the occurrence of drying in handwashing events

	N	%
Parts of the hands washed:		
■ the two hands	1,802	89
■ the palms	99	5
■ just one hand	89	4
Others	46	2
Total	2,036	100
Forms of drying:		
■ with a cloth/towel	540	27
■ with a kitchen towel	233	11
■ with the clothes	137	7
■ with a body part	58	3
■ does not dry	1,019	50
Others	50	2
Total	2,037	100

6.3.2. Risk activities involving feces

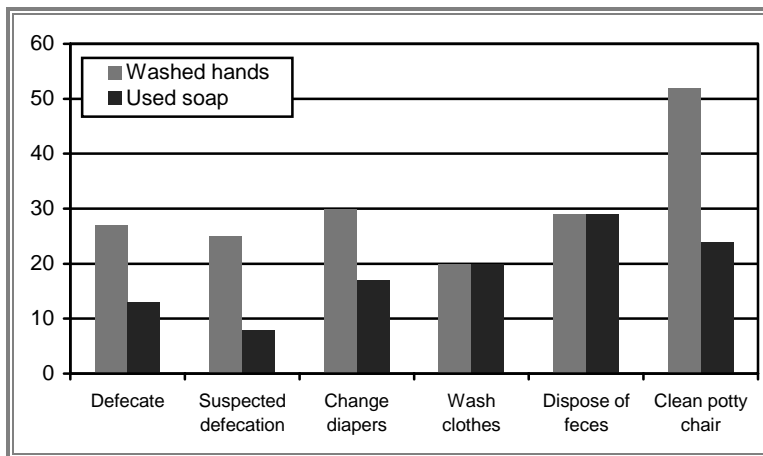
As mentioned, participants washed their hands 29% of the time after risk events involving feces, using soap 14% of the time. The mother or child caregiver was the individual most frequently in contact with feces during the observation visit. Children are associated with these events, specifically in acts of defecation or suspected defecation.

The study design defined six risk activities involving feces to be observed. Observing these activities contributes to understanding handwashing behavior since the results show a different handwashing practice for each activity. These activities refer to contact with feces associated with defecation, changing a child's diaper, washing

clothing contaminated with feces, disposing of feces and cleaning the potty chair or bathroom. Additionally, the category of suspected defecation was used when this action could not be directly observed, but when there were indicators of this activity such as observing an individual carrying toilet paper to the bathroom.

Changing diapers or clothes contaminated with feces were the most frequent actions in this risk category, followed by acts of defecation or suspected defecation (Table 5, Annex 1). Nevertheless, observations of handwashing and soap use suggested that when cleaning a child’s feces, whether this involved cleaning the potty chair, changing diapers or washing feces-contaminated clothes, individuals used soap more often than in events involving their own feces, in other words, when they themselves defecated (Table 6, Annex 1).

Figure 4. Occurrence of handwashing with soap after risk event involving feces



In addition, when mothers used soap to wash their hands after contact with feces, they most often used laundry soap, followed by bath soap.

Table 10. Type of soap used in risk events involving feces

	N	%
Uses laundry soap	47	7
Uses bath soap	33	5
Uses detergent	17	2
Uses another product	10	1
Uses only water	94	13
Does not wash hands	505	71
Total	706	100

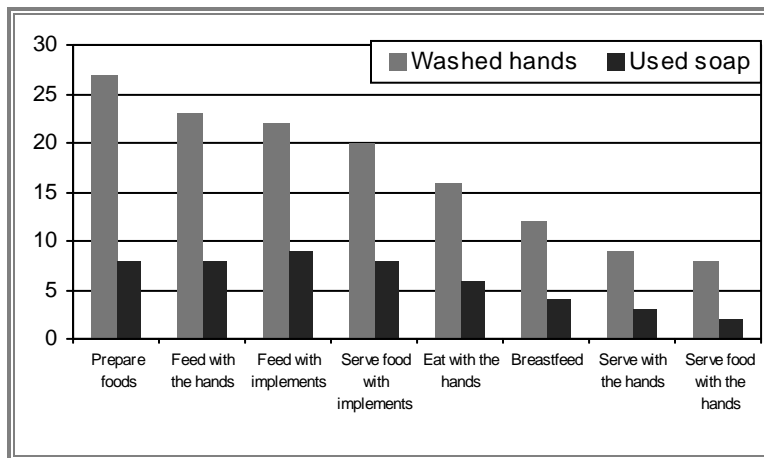
6.3.3. Risk activities involving food

Household observations of risk activities involving food were divided into eight activities. A total of 6,155 events of contact with food were recorded. The household observation form identified the activities of food preparation, child feeding with the

hand, child feeding with an implement, breastfeeding, eating with the hands, eating with an implement, serving food with the hands and serving food with an implement. Eating with the hands and with implements were the most commonly observed risk activities involving food (36% for each activity), followed by those of food preparation and serving foods with implements (Table 11, Annex 1).

Handwashing behavior differed according to the activity. It was observed most frequently just before food preparation, feeding children with implements, eating with implements and serving foods with implements. Soap was used most often in handwashing events associated with eating with implements, preparing foods and feeding children with implements. Laundry soap was used most frequently in these handwashing events (Table 11, Annex 1).

Figure 5. Occurrence of handwashing and use of soap during risk events involving food



In summary, handwashing was generally practiced more often after risk events involving feces than before risk events involving food. Likewise, handwashing with soap was more common after risk events involving feces than before those involving food. Soap was used most often in events with the most visible signs of feces. Study participants tended to wash their hands with soap or detergent more often just before lunch or preparing food.

6.3.4. Risk activities and handwashing practices of the mother observed

In general, mothers are the individuals most involved in risk activities involving food and feces. Mothers washed their hands and used soap more often than other family members.

Risk activities involving feces. The mother was involved in 45% of the total risk events involving feces observed (Table 3, Annex 1). Mothers also washed their hands more frequently (33%) and used soap (19%) more often than other household actors (Table 4, Annex 1). Mother or caregivers came into contact with feces most often

during the following activities: washing feces-contaminated clothing (87%), disposing of feces (86%), changing clothes or diaper (81%) and cleaning the potty chair or bathroom (79%). Mothers were involved in 31% of the observed cases of suspected defecation and 3% of the cases of defecation (Table 6, Annex 1).

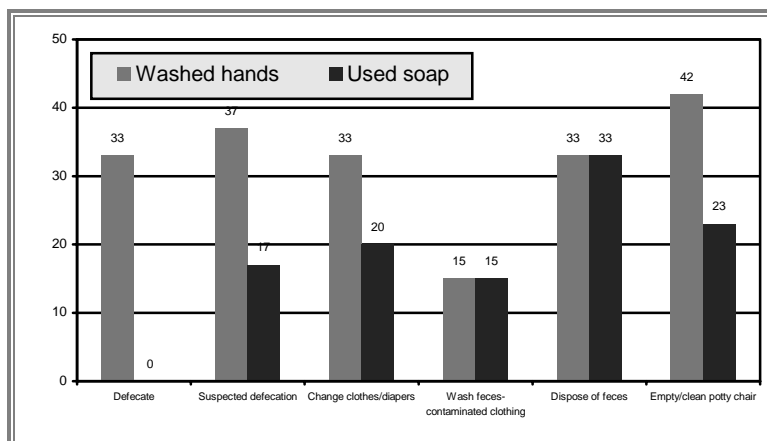
These observations corroborated the information mothers provided regarding the location where their children tend to defecate. A large percentage of children under the age of five (40%) defecated in their diaper or clothing. Children also defecated in the potty chair (26%), bathroom facility with indoor plumbing (16%) and in the latrine or pit latrine (13%). Mothers disposed of child feces directly in the sewer (29%), garbage (27%) and latrine (15%). Mothers placed the feces outside in the open air 17% of the time, disposed of them in the irrigation ditch 4% of the time and buried the feces in the dirt 4% of the time.

Table 11. Location and final disposal of children's feces

	n	%
Location where children defecate		
■ In diaper, clothing	500	40
■ Potty seat	500	26
■ Bathroom	500	16
■ In the area surrounding the house	500	15
■ Latrine /pit latrine	500	13
■ Others	500	7
Final disposal of children's feces		
■ Sewer	110	29
■ Garbage	102	27
■ Latrine	56	14
■ Irrigation ditch	17	4
■ Does not remove them	67	17
■ Buries them in the soil	15	4
■ Others	18	5
Total	385	100

Mothers washed their hands most frequently after cleaning the potty chair, followed by activities of suspected defecation, defecation, disposing of children's feces and changing children's diapers (Table 6, Annex 1). Soap was used most frequently in handwashing after disposing of children's feces, cleaning potty chairs and changing diapers.

Figure 6. Percentage of handwashing and use of soap among mothers during risk activities involving feces



Mothers washed their hands most frequently by running water over them from a faucet or a pitcher. Mothers used laundry soap most often to wash their hands after risk events, followed by bath soap and detergent. Mothers washed their hands in the kitchen, patio or courtyard most often after risk events involving feces.

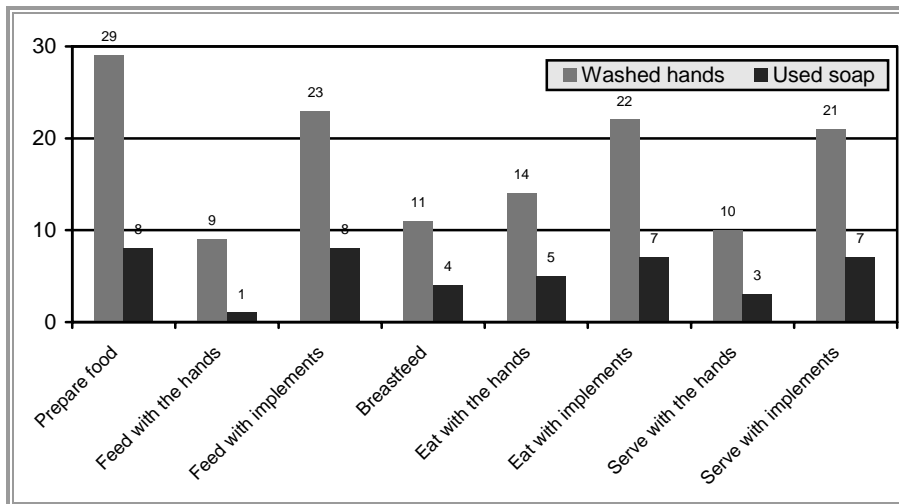
Table 12. Characteristics of mothers' handwashing contexts during risk events involving feces

	n	%
Type of water used		
■ Running water from faucets or hose	331	43
■ Pitcher	172	22
■ Stored in container	251	33
Others	15	1
Total	769	100
Handwashing location		
■ Kitchen	372	48
■ Patio or courtyard	247	32
■ Bathroom	50	7
Other	100	13
Total	769	100
Type of soap		
■ Laundry soap	28	9
■ Bath soap	20	6
■ Detergent	12	4
Washed with water alone	40	13
Other	6	2
Did not wash hands	211	67
Total	317	100

The mother or caregiver demonstrated risk activities involving food. Mothers or caregivers were involved in 40% of the risk events involving food observed (Table 8, Annex 1). Mothers were observed washing their hands in 22% of the events involving food, using soap 6% of the time (Table 9, Annex 1). Preparing food, feeding a child with an implement and serving food with an implement are activities mainly carried out by mothers, as compared with eating with implements or eating with the hands (Table 12, Annex 1).

Mothers washed their hands most often before preparing food (Table 13, Annex 1). This critical moment, as well as events associated with lunch, such as feeding with an implement, eating with an implement and serving with an implement, had the highest percentages of handwashing. Soap use in all of these activities was similar to the overall percentage for risk events involving food.

Figure 7. Percentage of handwashing and use of soap among mothers during risk activities involving food



Mothers used running water more often than stored water to wash their hands. Handwashing most frequently took place in the kitchen. They washed both hands entirely but did not dry them afterwards. Laundry soap was the product most often used for handwashing.

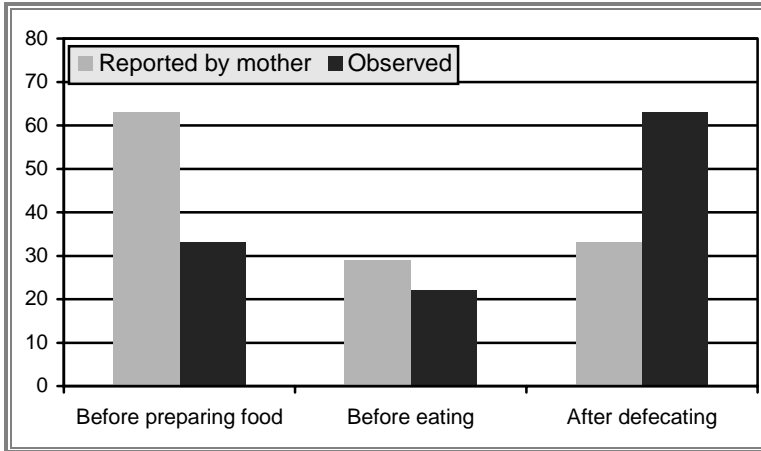
Table 13. Characteristics of mothers' handwashing practices before risk events involving food

	N	%
Type of water used		
■ Running water from faucet or hose	401	46
■ Poured from pitcher	170	19
■ Stored in container	285	33
Others	15	2
Total	871	100
Handwashing location		
■ Kitchen	465	54
■ Patio or courtyard	239	27
■ Bathroom	62	7
Other	102	12
Total	871	100
Type of soap		
■ Laundry soap	137	16
■ Bath soap	64	7
■ Detergent	71	8
Washing with water alone	573	66
Other	21	3
Total	871	100

Handwashing percentages dropped, as did soap use, when mothers served food with their hands, fed children with their hands, ate with their hands and breastfed (Table 13, Annex 1). Half of the occasions when food was eaten with the hands occurred before 11:00 a.m., and 66% occurred before 12:00 p.m., suggesting that the food consumed on these occasions consisted of before-lunch snacks (fruit, crackers, bread).

Mothers washed their hands most often after coming into direct contact with feces and when involved in pre-lunch activities. When mothers were asked about the times they usually wash their hands, however, they reported just the opposite. That is, they recalled handwashing during moments associated with food more often than during those associated with feces. The large number of food-related activities during the day may explain why mothers are more aware of handwashing during those times, why they rationalize more often their handwashing behavior before coming into contact with food, and why they have poor recall of handwashing events during other times of the day. Socialization factors also play a role since verbal reinforcement or actual handwashing was observed when individuals were called to lunch, but these cues were almost non-existent during risk activities involving feces.

Figure 8. Percentage of handwashing reported by mothers, compared with handwashing behavior observed

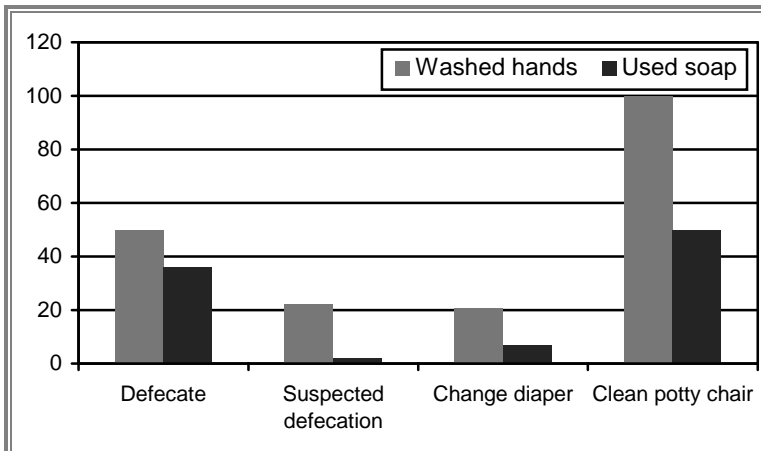


6.3.5. Risk activities and handwashing observed in school-age children

Children between the ages of five and 15 years observed in the home washed their hands much more often than did younger children.

These children were involved in 10% of the occasions in which contact with feces occurred (Table 3, Annex 1). In general, children washed their hands 29% of the time, using soap 11% of the time (Table 4, Annex 1). Children washed their hands most frequently after cleaning the potty chair and after defecating, when they also used soap more often.

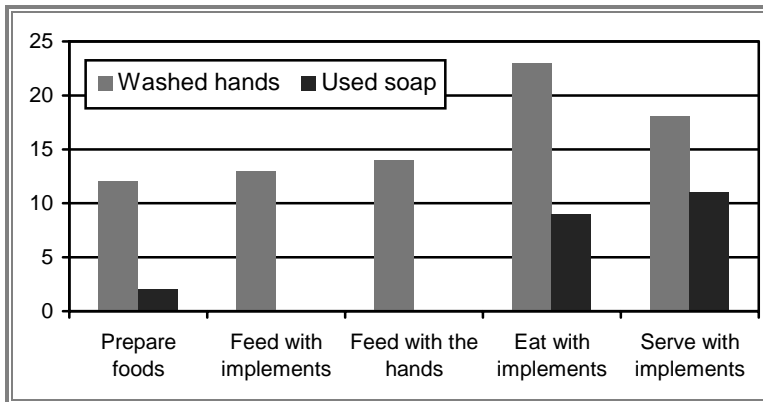
Figure 9. Handwashing practices among children ages 5 to 15 during risk events involving feces



Children between the ages of 5 and 15 were involved in 14% of risk events involving food (Table 8, Annex 1), washing their hands 17% of the time and using soap 5% of

the time (Table 10, Annex 1). These children washed their hands and used soap most often when they prepared food with implements or served food with implements (Table 13, Annex 1).

Figure 10. Handwashing practices among children ages 5 to 15 during risk events involving food



6.3.6. Characteristics associated with handwashing practices

Researchers analyzed the events carried out by mothers or caregivers only. For each of these actors, the type of behavior during the household observation period was determined. Mothers were divided into groups of those who never washed their hands when involved in a particular type of risk behavior, those who washed their hands at least once and those who washed their hands during all risk behaviors according to type of contact, either with feces or food. The results presented below specify the mothers' behavior, associating it with some basic characteristics of the individual and the household. The statistical analysis uses the chi-square test.

6.3.6.1. Association with the unmet basic needs indicator

The handwashing behavior observed after risk events involving feces is not statistically associated with the availability of basic resources in the households. As the following table shows, handwashing differences between families without unmet basic needs and those with two or more unmet basic needs remained relatively constant. A similar percentage of mothers always or never wash their hands, regardless of whether or not they live in households with unmet basic needs. This suggests that there are other elements that motivate some mothers to always wash their hands despite the lack of adequate conditions.

Table 14. Handwashing among mothers after contact with feces according to unmet basic needs of households

Unmet basic needs	Handwashing with soap or detergent among mothers							
	Never		At least once		Always		Total	
	n	%	n	%	N	%	n	%
Without UBNS	67	67.7	5	5.1	27	27.3	99	100
With 1 UBNS	61	76.3	6	7.5	13	16.3	80	100
With 2 or more UBNS	28	82.4	1	2.9	5	14.7	34	100
Total	156	73.2	12	5.6	45	21.1	213	100

In terms of mothers' handwashing behavior before risk events involving food, there is a statistical association. Mothers who never wash their hands are concentrated in households with two or more unmet basic needs, while mothers who wash their hands with soap at least once during food-related events are concentrated in households without unmet basic needs. Mothers who always wash their hands when they come in contact with food were not considered because there were too few of them to justify the analysis.

Table 15. Handwashing among mothers in risk activities involving food, according to unmet basic needs of households

Unmet basic needs	Handwashing with soap or detergent among mothers							
	Never		At least once		Always		Total	
	n	%	n	%	n	%	n	%
Without UBNS	165	721	63	27.5	1	0.4	229	100
With 1 UBNS	140	787	36	20.2	2	1.1	178	100
With 2 or more UBNS	76	844	13	14.4	1	1.1	90	100
Total	381	767	112	22.5	4	0.8	497	100

p<0.03

6.3.6.2. Association with educational level

With respect to the educational level of the mother and father or head of household, the study found that handwashing in risk activities involving feces is significant, being more frequent among mothers with a secondary or higher education. There is a statistically significant correlation with the educational level of the head of the household where the mother lives. The following table shows that mothers who came into contact with feces washed their hands more frequently in households in which the head of the household has a higher educational level. In households in which the father or the head of the household and the mother have a primary school education or less, handwashing with soap was less frequent in risk events involving feces. In other words, there were lower percentages of handwashing with soap observed during all risk events involving feces in these households.

Nevertheless, 18% of mothers and 9% of fathers who had a primary school education or less always washed their hands. This is evidence of the idea mothers expressed

during interviews: that poverty should not be synonymous with poor hygiene (poor but clean).

Table 16. Handwashing with soap or detergent after risk events involving feces among mothers, according to parents' educational level

Mother's educational level	Handwashing with soap or detergent among mothers							
	Never		At least once		Always		Total	
	n	%	n	%	n	%	n	%
Primary school or less	52	78.8	2	3.0	12	18.2	66	100
Secondary school	85	74.6	6	5.3	23	20.2	114	100
Higher education	19	57.6	4	12.1	10	30.3	33	100
Total	156	73.2	12	5.6	45	21.1	213	100
Educational level of head of household								
Primary school or less	68	87.2	3	3.8	7	9.0	78	100
Secondary school	65	65.0	8	8.0	27	27.0	100	100
Higher education	23	65.7	1	2.9	11	31.4	35	100
Total	156	73.2	12	5.6	45	21.1	213	100

p<0.003

There were significant differences associated with the educational level of mothers as well as heads of households in terms of handwashing during risk events involving food. Mothers who always washed their hands were not considered because there were so few of them. The following table shows that mothers who washed their hands with soap at least once before coming into contact with food were the most highly educated, or lived in households in which the head of the households, usually the mother's partner, had the highest educational levels. Most of the mothers with a primary school education or less or who lived in households in which the head of the household had the same educational level, never washed their hands with soap before coming into contact with food.

Table 17. Educational level of parents according to frequency of handwashing with soap or detergent before coming into contact with food among mothers

Mother's educational level	Handwashing with soap or detergent among mothers							
	Never		At least once		Always		Total	
	n	%	n	%	n	%	N	%
Primary school or less	146	84.4	26	15.0	1	0.6	173	100
Secondary school	188	73.4	66	25.8	2	0.8	256	100
Higher education	47	69.1	20	29.4	1	1.5	68	100
Total	381	76.7	112	22.5	4	0.8	497	100
Educational level of head of household								
Primary school or less	152	84.0	27	14.9	2	1.1	181	100
Secondary school	176	73.9	60	25.2	2	0.8	238	100
Higher education	53	67.9	25	32.1	0	0.0	78	100
Total	381	76.7	112	22.5	4	0.8	497	100

p<0.005

6.3.6.3. Association with water supply

Indoor plumbing greatly facilitates the practice of handwashing with soap when there is a risk of contact with feces. The differences observed were statistically significant compared with other water supply options. Having a public network connection outside the home increased the percentage of occasional handwashing — in other words, it was not a regularly practiced habit.

Table 18. Handwashing with soap or detergent after a risk event involving feces among mothers, according to type of water supply

Water source	Handwashing with soap or detergent among mothers							
	Never		At least once		Always		Total	
	n	%	n	%	n	%	n	%
Public connection within the home	61	62.9	5	5.2	31	32.0	97	100
Public connection outside the home	8	88.9	1	11.1	0	0.0	9	100
Well/public standpipe	33	84.6	1	2.6	5	12.8	39	100
Others	54	79.4	5	7.4	9	13.2	68	
Total	156	73.2	12	5.6	45	21.1	213	100

p<0.000

There were significant differences in the handwashing practices of mothers observed depending on the water supply network. Mothers who never washed their hands with soap at these times were concentrated in the group that did not have indoor plumbing. Having water from a public network outside the home did not influence handwashing behavior.

Table 19. Handwashing with soap or detergent before risk events involving food among mothers, by type of water supply

Water source	Handwashing with soap or detergent among mothers							
	Never		At least once		Always		Total	
	n	%	n	%	n	%	n	%
Public water connection within the home	152	71.7	59	27.8	1	0.5	212	100
Public water connection outside the home	23	88.5	3	11.5	0	0.0	26	100
Well/public standpipe	71	78.0	19	20.9	1	1.1	91	100
Others	135	80.4	31	18.5	2	1.2	168	
Total	381	76.7	112	22.5	4	0.8	497	100

The association with the water source was also analyzed in terms of the time required for mothers to collect the resource in order to use it.

With respect to contact with feces, having a nearby water supply facilitated handwashing with soap among mothers in a sporadic or regular manner, as compared with the group of mothers who needed more than a minute to collect the water. This difference is not statistically significant, however. There was a group of mothers who, despite requiring more time to collect water, always washed their hands, suggesting, once again, that structural factors are not the principle motivator for ensuring the desired behavior.

Table 20. Handwashing with soap or detergent after risk events involving feces among mothers, by time required to collect water and return

Time Required	Handwashing with soap or detergent among mothers							
	Never		At least once		Always		Total	
	n	%	n	%	n	%	n	%
None	12	70.6	2	11.8	3	17.6	17	100.0
1 to 5 minutes	53	88.3	3	5.0	4	6.7	60	100.0
6 or more minutes	29	76.3	2	5.3	7	18.4	38	100.0
Total	94	81.7	7	6.1	14	12.2	115	100.0

Neither is there a statistically significant association between the time required to carry water and the practice of handwashing with soap before coming into contact with food.

Table 21. Handwashing with soap or detergent before risk events involving food among mothers, by time required to collect water and return

Time Required	Handwashing with soap or detergent among mothers						Total	
	Never		At least once		Always		n	%
	n	%	n	%	n	%		
None	34	72.3	12	25.5	1	2.1	47	100.0
1 to 5 minutes	112	83.0	23	17.0	0	0.0	135	100.0
6 or more minutes	79	79.8	18	18.2	2	2.0	99	100.0
Total	225	80.1	53	18.9	3	1.1	281	100.0

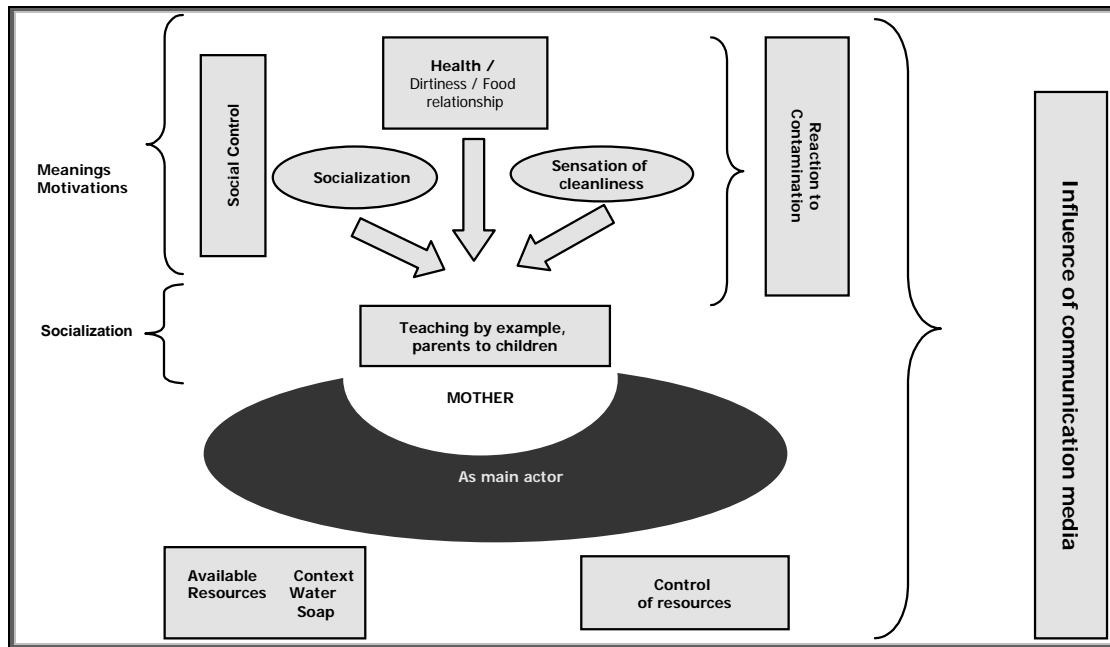
6.4. Elements that motivate or inhibit handwashing with soap

- *Specific objective of this section:* To identify the factors that motivate, facilitate, hinder or inhibit handwashing and other adequate hygiene practices.

As mentioned in the discussion of the conceptual approach, in order to identify the practices previously described, the availability of the elements necessary for handwashing must be considered, with the first consideration being the availability of water and soap, as well as locations for handwashing. Second, studies must consider the body of meanings, concepts and attitudes that favor or inhibit the use of these handwashing resources. Third, the existence of the socialization of handwashing practices permits establishing hygiene behavior in everyday life.

For the population under study, most of the elements mentioned above explain the handwashing practices identified. There is an indirect relationship between available resources and meanings or motivations. The study shows that the mother is the link between all elements, both at the practical and motivational levels. She activates knowledge and attitudes in a general rather than a specific manner, which permits her to address major concerns, such as how to avoid social criticism of her role as a mother and caregiver, as well as to reduce the contamination in her environment. The socialization of hygiene habits serves as a basic mechanism for transmitting concepts such as cleanliness and dirtiness, as well as with respect to the relationship of these practices with health status and food.

Diagram 2. Final summarized conceptual diagram



6.4.1. Available resources for handwashing with soap

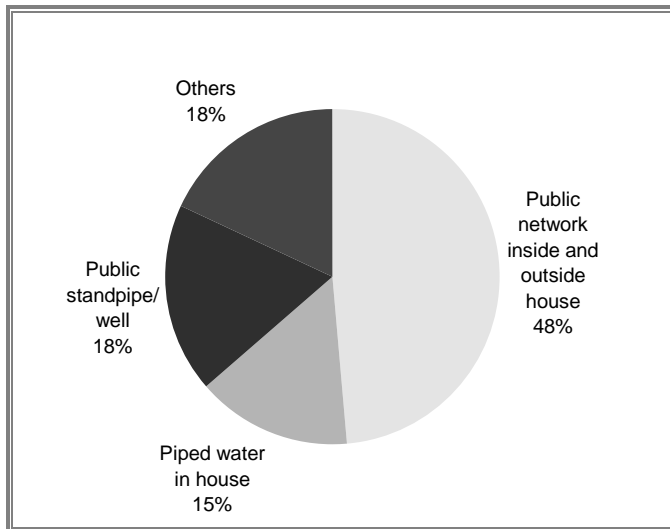
Researchers analyzed data on the availability of water and sanitation facilities, as well as on the purchase and consumption of soap, distinguishing the different products used and identifying geographical differences.⁴³ Researchers then described the aspects associated with the context in which these practices took place, combining observable physical aspects with mothers' perceptions. A favorable context is a necessary but insufficient condition for handwashing with soap. Motivation and initiative are also needed. In addition, restrictions in this context clearly inhibit handwashing.

6.4.1.1. Availability of water and sanitation services

Sixty-three percent of the families in the sample had a public network connection or a piped network within or near the home (Table 24, Annex 2). Sixty-five percent of mothers reported that they required less than five minutes to collect water. Twenty-eight percent of mothers had restricted access to this resource, requiring up to 30 minutes to obtain it (Table 27, Annex 2).

⁴³ As mentioned in the footnote on the methodology, the statistical sample with which the project worked was not designed to be subject to a differential geographic analysis, however, when required, results are presented by urban/rural zone considering that they contribute to the strategy of the initiative. These data (urban/rural) should be viewed as preliminary only, and should not be extrapolated to the entire population.

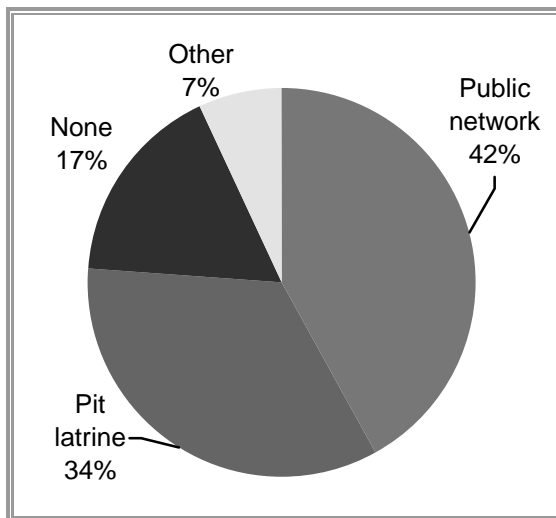
Figure 11. Water supply sources



Moreover, 69% (343/500) of mothers reported boiling water before drinking it to ensure water quality while 28% (140/500) said they did not treat the water.

Sanitation facilities to dispose of human excrement are connected to a public sanitation network in almost half of the households. These facilities are generally located inside the home and are for the exclusive use of these households. Nevertheless, more than half of the families in the study did not have a comfortable, safe way to eliminate feces (Table 18, Annex 2).

Figure 12. Type of hygiene facility available



The study households have favorable water supply conditions and less favorable sanitation conditions. Nevertheless, it is necessary to improve the infrastructure of

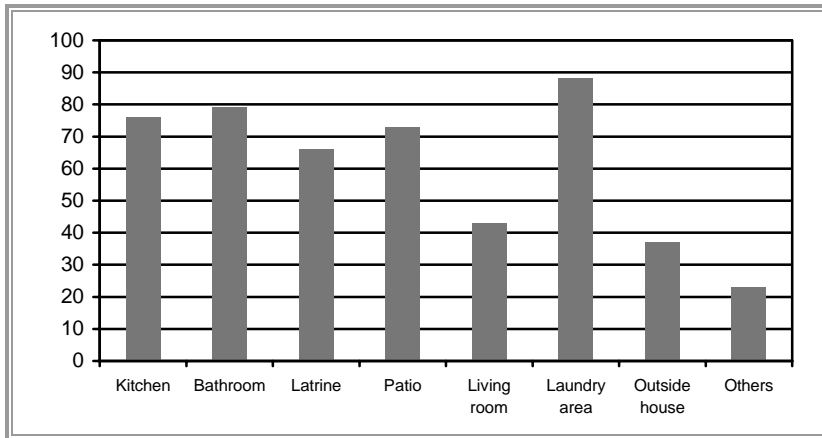
both of these services to ensure access to a safe, nearby water supply, as well as to guarantee efficient, comfortable and safe methods for feces disposal.

6.4.1.2. Availability of soaps and detergents

The presence of soaps and detergents was very high in households and shops of the study area (Table 28, Annex 2). All households (500) reported consuming at least one type of soap or detergent in the two weeks preceding the survey (Table 29, Annex 2). This high level of consumption of soap and detergent was also registered in market studies of previous years.⁴⁴

Household observations also corroborated the presence of soap or detergent in most homes. Different types of cleansing product were located in a variety of places. However, this does not mean that all households have easy access to these resources.

Figure 13. Presence of soap observed in homes, by handwashing location



According to the findings of the consumption questionnaire applied at the end of the observation period, the products most frequently consumed were detergent (89.6%) and laundry soap (89.2%). These were also the products with the highest sales volume in the shops visited.

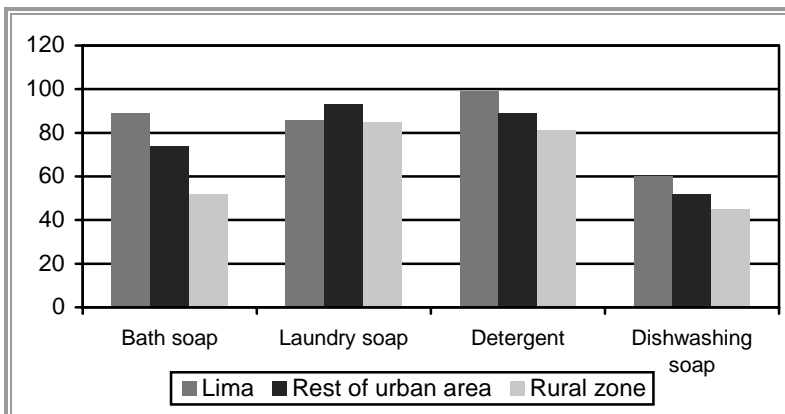
⁴⁴ In a 2002 study, Apoyo S.A. found that 96% to 100% of the households of the five socioeconomic sectors in Metropolitan Lima regularly consumed soap and detergent.

Figure 14. Percentage of reported consumption of soaps and detergents in households and shops



Although the sample applies to the research population as a whole, differentiated information by study area is also presented. This information is not statistically representative in every area, but rather simply an indicator of the market trends for the products in the area. Detergent consumption was highest in Lima while laundry soap had a similar demand in all study areas. Bath soap was mentioned less often than the other products, but it is regularly consumed by a large percentage of respondents. Its consumption varies according to geographic region, with a higher consumption in urban areas, particularly Lima, than in rural areas (51.8%). Among the four products mentioned, dishwashing soap had the lowest level of consumption (52.2%). The consumption trend for this product was similar to that of bath soap: it was higher in Lima than in rural areas (60% and 44.6%, respectively).

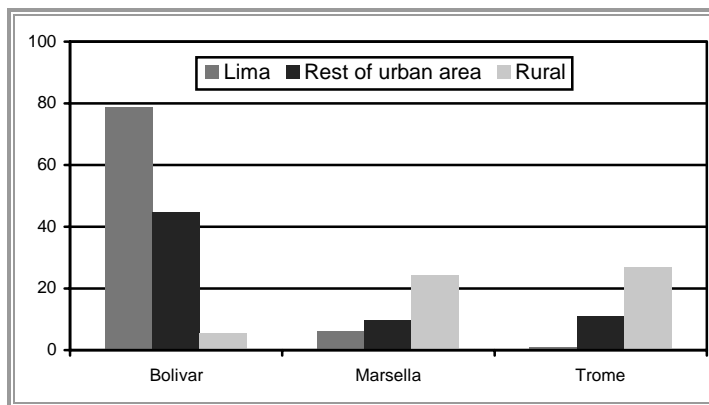
Figure 15. Consumption of types of soap by study area



6.4.1.3. Brand consumption and location in the home

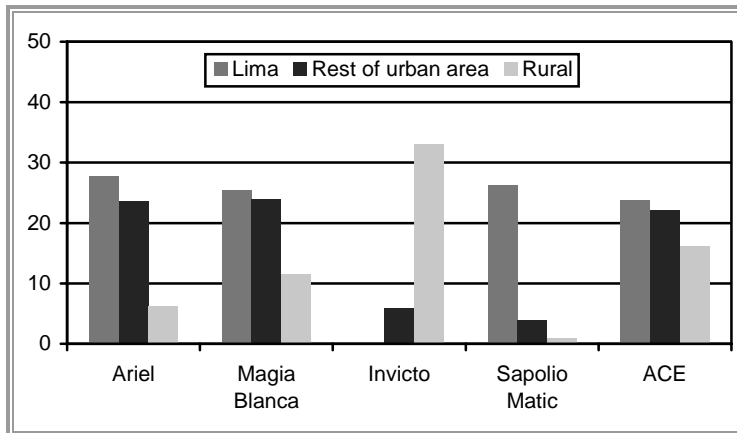
The following brands of soap had the highest consumption: Bolívar, Marsella, Jumbo, Trome and Lavandina (Table 35, Annex 2). These household preferences coincide with the leading brands sold in stores, according to a study commissioned by these soap manufacturers (Table 39, Annex 2). Bolívar soap followed by some of the other brands were found in all washing locations. Washing locations where these brands were found included the kitchen, patio or courtyard and living room, dining room or hallway (Table 34, Annex 2). Regarding the soap brands, the study found that urban households had the highest consumption of Bolívar, while Marsella and Trome had higher consumption among rural households.

Figure 16. Most consumed brands of laundry soap, by area



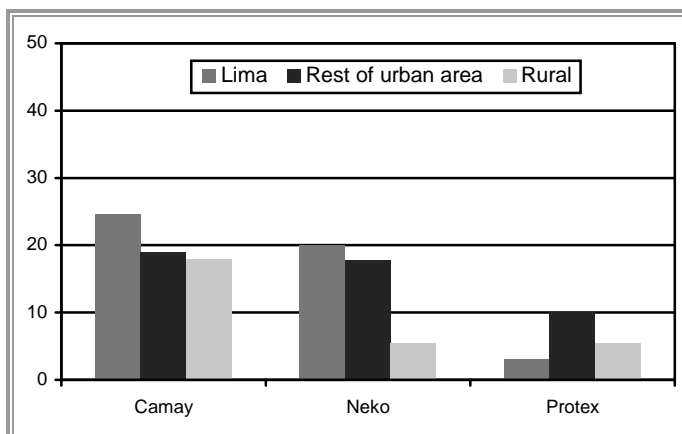
The most consumed detergents by the households were Magia Blanca, Ace, Ariel, Opal and Invicto (Table 36, Annex 2). These preferences in the households coincide with the leading brands in shops according to a study commissioned by these soap manufacturers (Table 40, Annex 2). These detergents were found in all washing locations (in small quantities), particularly in the laundry area (Table 34, Annex 2). Ariel and Magia Blanca are consumed most in urban areas, while Ace is consumed almost equally in both urban and rural areas. Invicto is consumed in households outside of Lima, unlike Sapolio Matic, one of the 10 top selling brands in Lima.

Figure 17. Most consumed brands of detergent in households, by area



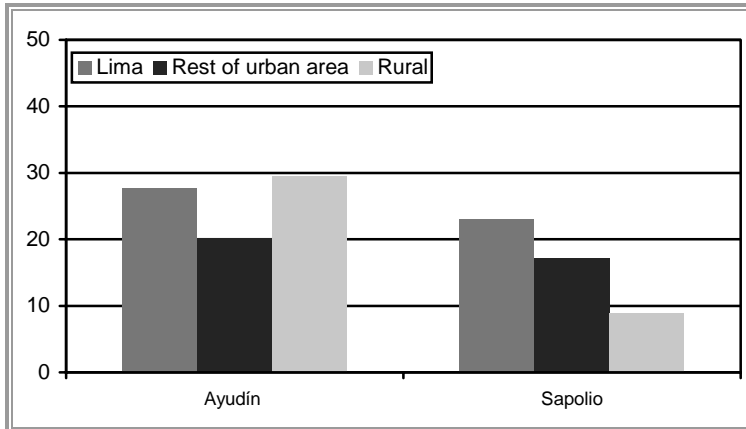
The most consumed bath soap by the households studied is Camay, followed by Neko, Palmolive, Lux, Johnson and Protex (Table 33, Annex 2). These household preferences coincide with the leading brands in stores according to a study commissioned by these soap manufacturers (Table 38, Annex 2). These brands were found in all washing locations in the homes, especially the bathroom, patio or courtyard and the living room, dining room or hallway (Table 34, Annex 2). Consumption of Camay is similar in all areas, unlike Neko, which is consumed less in rural areas, having the same level of consumption as Protex in rural areas.

Figure 18. Most consumed brands of bath soap, by area



Finally, the most consumed brands of dishwashing soap are Ayudín and Sapolio (Table 37, Annex 2). These household preferences coincide with the leading brands in shops according to the report commissioned by these soap manufacturers (Table 41, Annex 2). Although dishwashing soap is less often consumed in rural areas, Ayudín dishwashing soap is consumed by a similar percentage of households in the three areas, while Sapolio is rarely consumed in rural areas.

Figure 19. Most consumed brands of dishwashing soap, by area



6.4.1.4. Uses of soaps and detergents

Mothers spontaneously mentioned that they used soap products for a variety of domestic activities, such as washing clothes, cleansing the body, washing their hands and cleaning sanitation facilities, among others. The study revealed that laundry soap was the most versatile product. Any of the four products could be used for handwashing, although bath and laundry soap were used most frequently. Bath soap is most identified with this practice (54% of respondents reported that they used it to wash their hands), followed by laundry soap (36% of mothers who had it in the home mentioned that they used it for this purpose).

Figure 20. Activities for which the different types of soap are used



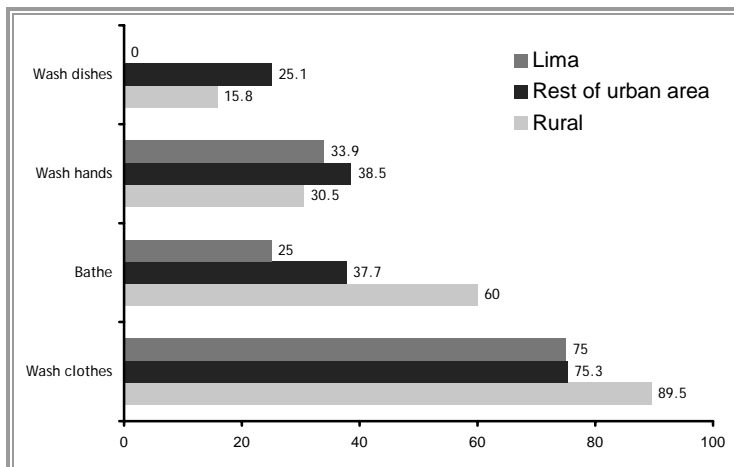
The choice of which soap or detergent to use for each chore or activity is partly related to the attributes consumers recognize in each product. Laundry soap, for example, can be used to wash clothes, especially diapers and baby clothes, since it is considered to be gentler than detergent. If detergent is used to wash the clothes of

small children, it can produce allergies because it is too “strong” for their skin. Bath soap and dishwashing soap are not used for this purpose. However, detergent is commonly used to wash the clothing of adults, who have tougher skin, since it cleans more quickly, is strong and “really gets the dirt out.”

“ ... you need a lot of water when you wash with soap since the clothes have to be really white and all the rinsing uses up the water. Detergent is faster because it doesn't need more than three rinsings. You have to rinse soap more.” (mother from Arequipa)

Regarding the use of these products for bathing or washing the body, mothers again make a distinction based on the type of skin: they prefer to bathe small children with bath soap, and in some cases special baby soap, while adults and older children can use any type of soap, bath or laundry. In rural areas, 60% of mothers that had laundry soap reported that they used it for bathing. The study results showed that laundry soap often replaces bath soap, which is used less often in rural environments. Neither detergent nor dishwashing soap is used to cleanse the body.

Figure 21. Differences in use of soaps, by area



Finally, respondents reported that they prefer to wash dishes (plates, cups, pots and pans, etc.) with dishwashing soap or detergent. These products are perceived to have the ability to remove dirt (grease, grime, etc.). Laundry soap can also be used for this activity, although it is uncommon. In some locations, sand or *Puliton* is mixed with the soap product to “get all the grease out.”

In all of these activities, soaps and detergents are used to clean and to remove dirt, although they are also used for other purposes. Laundry soap is used in some areas as an adult deodorant or as a medicine for animals “*they are given soap when they have a swollen belly. When they give birth, you also to wash them when the babies come out.*” (mother from a rural area of Junín).

6.4.1.5. Locations for handwashing with soap

Handwashing locations are defined as the places in the home where handwashing is practiced or where there is evidence that this practice takes place (presence of water, soap, toothbrush, comb and/or mirror). In the 500 households of the study, the main handwashing locations were as follows: the kitchen (71%), patio or courtyard (59%), bathroom (30%), living room, dining room or hallway (11%), and the laundry area (10%) (Table 23, Annex 2). The discussion will focus on the first three of these locations because they represent the largest percentage of the sample and were the locations most often used during the observation periods. Therefore, of all handwashing events observed (2,037), most took place in the kitchen or the patio of the home (38% and 37%, respectively), with few events observed in the bathroom (9.7%) (Table 22, Annex 2).

When handwashing took place in the kitchen, it was usually far or very far from the location used for defecation (70%) and had a stored water source (60%) or running water from a faucet (39%). Twenty-four percent of households did not have any type of soap or detergent, while the remainder had bath or laundry soap (36%), detergent or dishwashing soap (40%).

The patio or courtyard used as the handwashing location was also far or very far from the defecation location (55%), but less so than in the kitchen. Most had running water in this location (62%) and 27% did not have any soap or detergent present. Laundry soap or bath soap (53%) was found more often than detergents or dishwashing soap (20%).

The bathroom used as the handwashing location was located very close to the defecation site in almost all homes (96%). Most bathrooms had running water (89%) and in 22% of the cases no soap or detergent was found. In the rest of the cases, bath or laundry soap (75%) was observed much more frequently than detergent or dishwashing soap (4%).

It could be said that the farther apart the defecation and handwashing locations are, the greater the presence of detergents and dishwashing soap, because the activities carried out in those locations involve the use of these cleansing agents. Stored water is also more common in those locations. Likewise, the closer the handwashing location is to the defecation site, the greater the presence of soaps and the lesser the presence of other products, since these locations are designed for body care. In addition, these locations are more likely to have running water than stored water.

6.4.1.6. Perception of the context

To understand the context in which mothers and households are located, several approaches were used. That of the mothers, who described the elements and sensations associated with “clean and dirty;” that of field observers, who rated the cleanliness of the houses and family members observed; and the information

collected through observation, where the observed context was described (hygiene facilities, presence of feces and handwashing locations).

Most of the mothers surveyed reported that the kitchen is the handwashing site that requires the most frequent cleaning (72.3%, Table 10, Annex 2). This is due to the presence of contaminating agents such as flies, or to the type of activities that take place there (cooking, feeding) and that requires constant cleaning of the inputs used (dishes, utensils, foods, etc.). The kitchen is cleaned and organized so that “it looks nice,” and the mother “can feel good” (Table 11, Annex 2). The kitchen is the location where home cleaning needs and activities are concentrated. The mother is responsible for cleaning the kitchen, largely because of the association between this space and things that should not be contaminated: food.

Mothers describe the world of dirty as one in which the colors black (85.7%) or brown (29.8%) predominate, where everything smells of sweat (52.6%) or something rotting (20.3%), where there are pigs (67.9%), dogs (43.1%) or ducks (16.7%) that eat garbage, smell bad, are in the dirt or on the ground and spend most of their time outdoors. The ground, dirt and sand are dirty elements, as are feces, which are considered disgusting (both those of animals and adult humans) (Tables 1 and 4, Annex 2).

During the observation periods, animal or human feces were visible in some households. Twenty-four percent of the homes had chicken droppings, 20% had feces of other animals and 2% had human feces. In these cases, 7% of children under the age of five years had direct contact with chicken droppings and 11% had contact with the feces of other animals (Table 20, Annex 2).

In contrast, the world of the clean is one in which the color white predominates (87%), where everything smells of soap (47.5%) or perfume (41.6%), where there are no animals (since 49.1% believe that no animal is clean) or where there are cats (18.6%), since these animals clean themselves, cover their feces and do not eat garbage (Tables 5 to 8, Annex 2).

The dirty and the clean mix in the environment in which these mothers live: there are animals, dirt, feces, soap and water. The value and need to remain clean, to be “presentable,” contrasts with the limitations of the environment and the availability of resources. Children always dirty their hands when they play in the dirt, sand or mud (97%, Table 9, Annex 2), the house gets dirty with dirt and germs and gets messy (Tables 10 and 11), the bodies of children and adults sweat, get dirty and smell bad (Tables 12 to 15, Annex 2). In response, mothers prepare spaces in the house with the resources necessary for handwashing (i.e., handwashing locations). For mothers, caring for their children and ensuring their good health involves grooming and cleaning them (40.2%, Table 16, Annex 2).

Field observers used their own criteria of clean and dirty to classify the homes and individuals they observed during their work. Thirty-eight percent of the homes visited were classified as dirty (very dirty, somewhat dirty and dirty), as were 34% of the

mothers, 42% of children under the age of five years and 41% of children over the age of five (Table 17, Annex 2).

6.4.2. Meanings, motivations and benefits perceived with regard to handwashing with soap

The prevalent practices and resources available to facilitate handwashing with soap have already been discussed. Nevertheless, as mentioned in the conceptual approach, having the necessary resources is not a sufficient motivation for handwashing. It is essential to understand what leads a person to carry out the handwashing practices observed.

6.4.2.1. Motivating elements for handwashing with soap

The crossing of the information collected from observation sessions, interviews and focus group discussions led to the definition of three broad conceptual fields underlying the motivations for handwashing with soap (Diagram 3).

6.4.2.1.1. *Clean and dirty field*

This refers to the conceptions, associations and attitudes mothers have with respect to what they believe is clean and dirty.

Sensation of clean

One of the most important motivators for using soap in handwashing is to achieve a feeling of cleanliness that is associated with the use of this product. This sensation includes making the hands feel soft and pleasant-smelling, but especially the sensation of not being dirty.

The characteristics associated with being dirty or clean refer to both physical and psychological aspects. When dirty, mothers describe themselves as distressed, ugly, depressed, upset, stressed, lazy, and sweaty and say that their whole body itches. In contrast, when they are clean they describe themselves as agile, pretty, alert, happy and intelligent. They report that this state is desirable. Being clean is relaxing. People sleep better, particularly children, when they are clean. In contrast, being dirty is upsetting. They feel ugly when their hands are dirty.

Table 22. Sensations associated with being clean and dirty

When they are clean they feel:	n	%
■ Fresh	500	49
■ Calm		32
■ Good		31
■ Agile		15
■ Happy		15
■ Alert and energetic		9
■ Relieved		9
When they are dirty they feel:		n
■ Restless, annoyed	500	56
■ Uncomfortable		25
■ Bad		18
■ Sticky		14
■ Distressed		11
■ Tired		11

Keeping children clean is also associated with children’s health status. When they are dirty they can even lose their appetite. Providing a sense of freshness and comfort to children is part of the care mothers should provide to their children. Being dirty keeps children from doing well in school. The clean child is a healthy, self-confident one that people will have a positive attitude about.

“So that they feel fresh, comfortable and smell like soap” (chep04)

“If not, they (the children) are distressed because they are hot and sweaty and smell bad” (liep03)

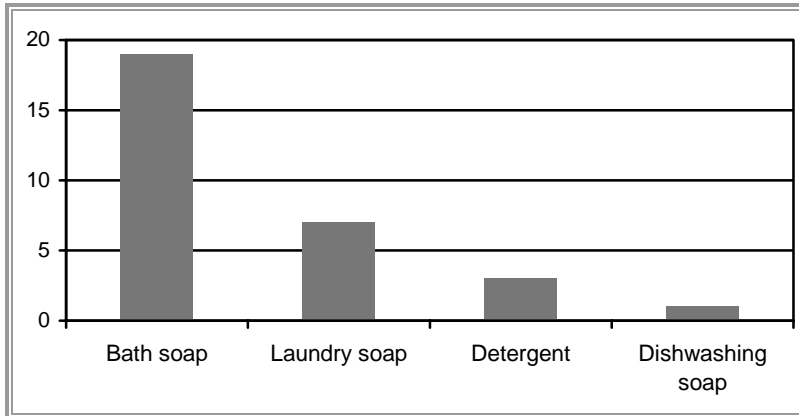
“They don’t feel well when they’re not clean and they don’t do well in school”(juep02)

“Babies are bathed so that they don’t get rashes since they go poop and pee pee every day”(arep05)

Soap leaves the hands soft, clean and pleasant-smelling

In general, soap is thought to produce a feeling of softness, both for clothes and hands. It is appropriate for washing baby clothes, linens and undergarments, and especially for making hands soft, as opposed to detergent, which mothers report is strong and causes dry hands. Soap is considered less strong or harmful for the skin than detergent, which produces allergies in some people, as one mother mentioned: “I’m allergic so I don’t wash with detergent, soap is better”(chep06). Soap is perceived to be better for the hands because it does not cause skin problems. “It keeps the hands soft” (cngf01).

Figure 22. Type of soap preferred for purchase because it leaves the skin soft



Mothers also mentioned that using soap makes their hands smell good. The smell of soap is associated with a clean smell. This is also true for clothing washed with soap. Bath soap also produces a clean, pleasant smell; for some mothers, it is even better than laundry soap. Being “nice-smelling” is a characteristic of clean people and things, and the smell most closely associated with clean is the smell of soap (Table 6, Annex 2).

“When you’re dirty you stink ... when you’re clean you smell good.” (chep03).

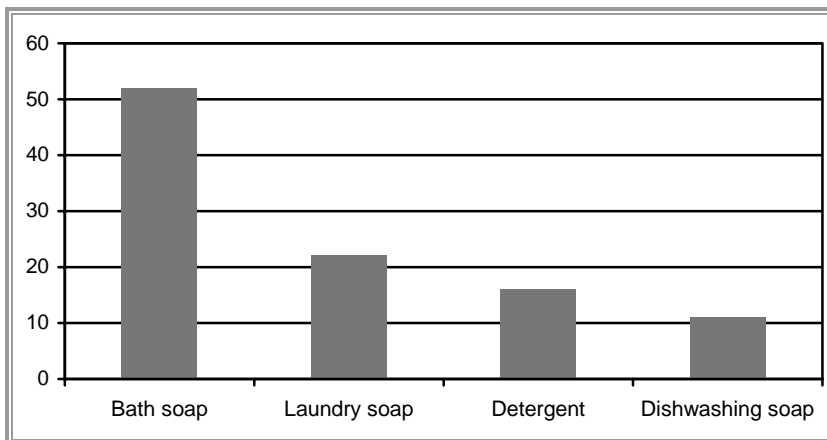
“It leaves [clothes] cleaner and smelling of soap” (iqep02)

“It smells good.” (cuel01).

“I put the clothes in Jumbo soap water ... because it leaves the clothes smelling good”(iqep04).

Fragrance is an important consideration when buying a bath soap

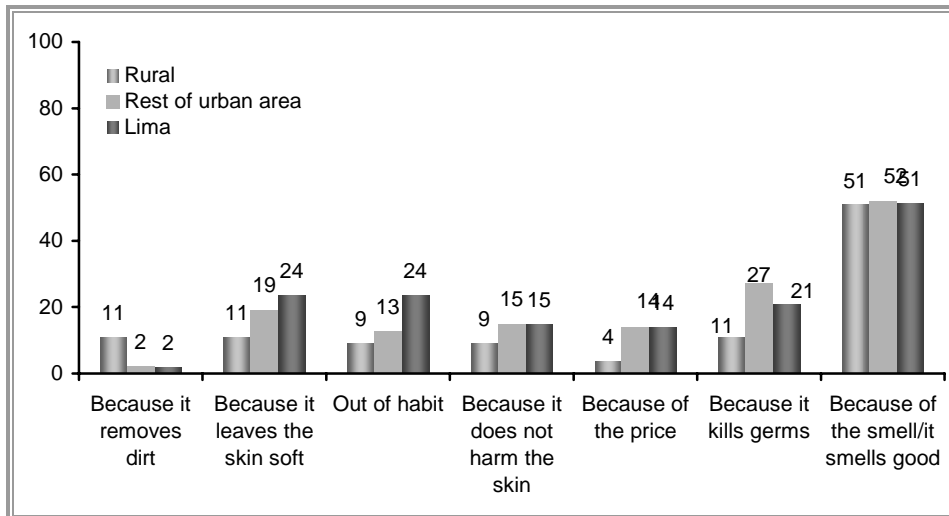
Figure 23. Type of soap preferred for purchase because it has an agreeable smell



As opposed to these “clean” smells, mothers most often associated the smell of sweat with being dirty (Table 2, Annex 2). Being dirty is also associated with sensations and

emotions such as being restless, distressed and upset. In contrast, soap gives a sensation of freshness. This was explicitly expressed when researchers asked mothers to list the reasons for buying bath soap. Mothers responded that the main reason for buying this product was its agreeable smell. The majority did not mention aesthetic reasons (softness and not harmful to the skin). Aesthetic reasons were even less important in rural areas.

Figure 24. Reasons for purchasing bath soap, by area



Women tend to buy laundry soap for economic reasons, “(we buy) bath soap only when there’s money.” Moreover, they dislike the smell of bath soap on their hands when cooking. They believe that the smell of laundry soap is more natural.

Although laundry soap is bought for the purpose of washing clothes, it actually has many more uses than the other products (see previous section on uses of soaps and detergents). It is thought to be gentle, unlike detergent, which is considered “strong.” For this reason, it has a broad field of action that includes washing delicate items (baby clothes and diapers, linens and undergarments) and the body (for bathing and handwashing). Detergent’s field of action is limited by its “strength,” for which reason it is used only to clean very dirty items, such as adult clothing (stains and tough dirt) or facilities (grease, grime, etc.).

Soap removes dirt

Mothers do not want to look or feel dirty or have any sign of dirt. Something is dirty if it looks dirty or has an unpleasant odor such as that of fish or feces. Hands that are sticky, sweaty, greasy or black can elicit responses such as the following: “go wash your hands with soap, you’ve eaten fish” (iqep02). For some respondents, hands should be washed even if they do not look dirty. Using soap reveals dirt that is not initially apparent since the suds turn a different color after removing the dirt.

Using soap removes all the characteristics of dirtiness, as opposed to washing with water alone.

And if you don't use soap?

"That's what makes us clean."

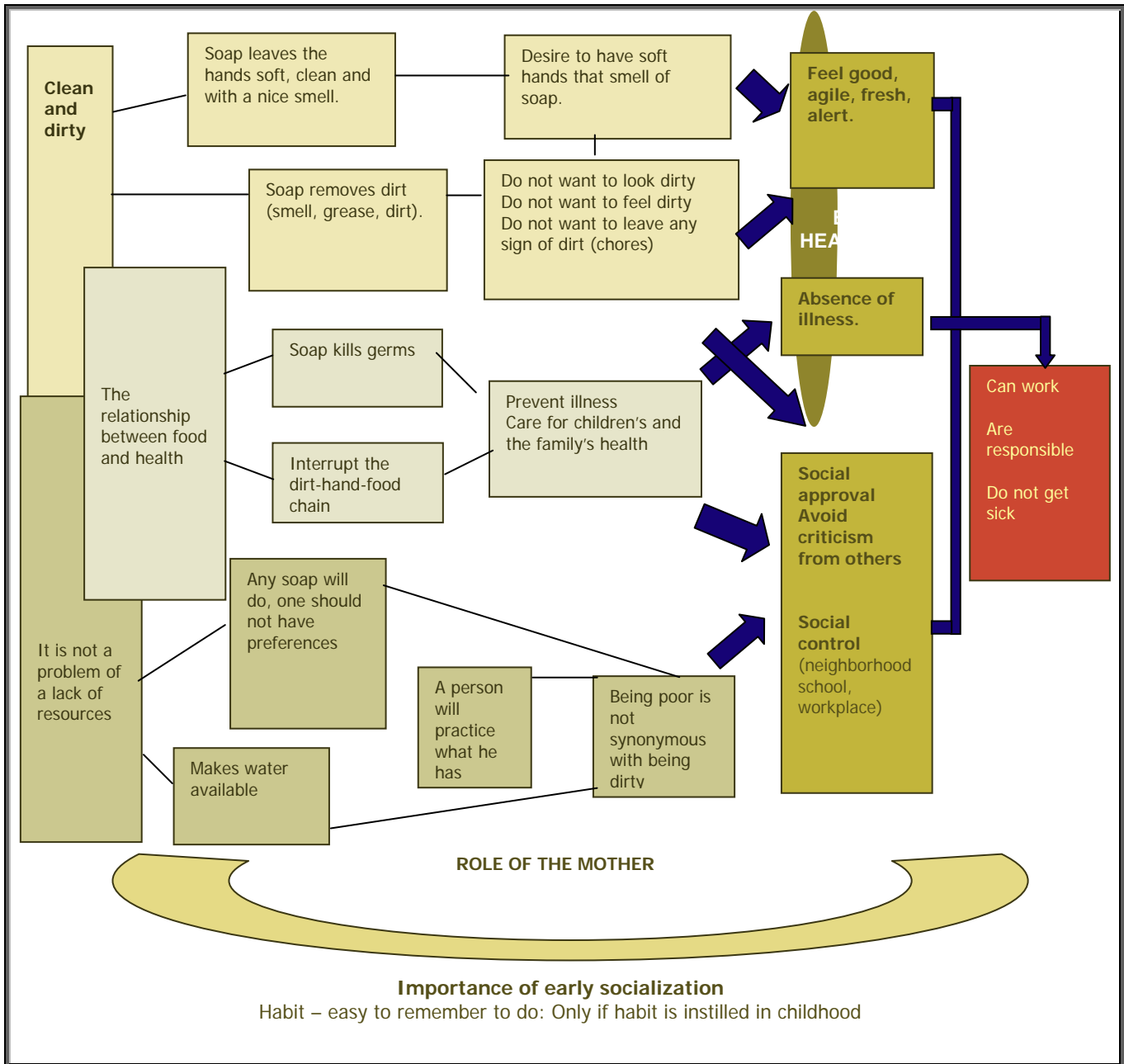
"Soap is what makes us clean, without it ... we would go around dirty, even if we washed with water. The same with our clothes. Soap is clean." (smgf02)

Mothers in the sample believe that water removes some but not all of the dirt. *"Dirt comes out better with soap. Without soap, only a little of the dirt gets out."* The use of water, soap and a comb is associated with being clean. Mothers claim that bathing without soap is unpleasant, as if one had not bathed at all. Dirt, which is also associated with germs, remains if soap is not used. *"Soap is essential for cleaning because it gets the dirt off, the bacteria off the body and if we wash with water only it's as if we hadn't washed" (arep05).* Mothers say they feel ugly if they do not use soap. They even prefer to use detergent for bathing when there is no soap, even though it makes their hair feel rough. For these women, bathing with detergent is better than being dirty, or having the sensation of dirtiness, regardless of whether this means feeling greasy, smelly or sweaty, because *"you have to use soap to get clean."*

Using soap makes the hands feel fresh and pleasant-smelling. It fights grease, sweat and bacteria. It also eliminates the smell of feces, which survey respondents believe is one of the most disagreeable, disgusting odors.

Laundry soap is considered "gentle," for which reason it can be used to wash children's clothes, diapers, linens and undergarments. It is also recognized for its capacity to remove dirt although it is not considered as "strong" as detergent. However, it is viewed as stronger than bath soap. For some mothers, laundry soap kills bacteria better than bath soap, which is "just perfume."

Diagram 3. Detailed conceptual diagram on factors that motivate handwashing with soap



6.4.2.1.2. Health-food relation field. Washing for health.

This section explores how the population perceives the relationship existing between handwashing and improved family health, thereby fulfilling another of the specific project objectives.

Mothers view health in an integral manner in terms of physical, mental and social health. Food plays a key role in health and is associated with care in general and

cleanliness in particular. In this context, handwashing was mentioned spontaneously by 5% of respondents. Forty percent of the mothers mentioned grooming and cleaning the child as crucial for ensuring the good health of the child.

Table 23. Knowledge of measures to ensure children’s good health

	N	%
They must be well-fed	500	71
They must be cared for		56
They must be groomed and cleaned		40
They must receive health care		11
The house must be cleaned		10
They must wash their hands		5

The use of soap in handwashing is also associated with preventing contamination, in other words, with preventing germs or bacteria from reaching the food. Mothers believe that feces-contaminated food is especially disgusting.

Mothers believe that washing the hands with soap prevents illness. They also express the desire to feel clean, that is, happy and fresh. Since respondents have an integral concept of health, the result is a healthy person.

This is why the eyes play a key role in recognizing a child’s health, in determining if they are well cared for: the eyes reflect the mood, which is part of “being okay” and “not being sick.” The mother is assigned responsibility for her children’s health. Cleaning is just one element of caring for a child. Children are cared for by other aspects as well:

- Showing them affection
- Dressing them in clean clothing (even if it is old and patched)
- Bathing and grooming them, brushing their hair and washing their hands
- Feeding them well
- Giving them advice, playing with them, being with them
- Dressing them warmly so they do not catch cold

There is an intermediate point between the well cared for and the uncared-for child. This is a **smiling but sweaty, unkempt child**. This suggests not that the child is uncared for, but that he is **temporarily dirty from playing** (this occurs more in the case of boys than girls).

Preventing disease, caring for children’s health

The smell of dirt itself can affect health. Mothers claim that washing hands helps to prevent illness. Dirtiness and feces are associated with disease, especially those of diarrhea and stomach infections, which is a serious case of diarrhea. They are also associated with cholera, where the connection between feces and disease is clear. Skin infections are also associated with dirt and feces.

Table 24. Diseases that can result from dirtiness and feces

Dirtiness:	n	%
Diarrhea	497	57
■ Stomach infection		39
■ Cholera		25
■ Skin diseases		14
■ Typhoid Fever		11
Feces :		
■ Diarrhea	451	39
■ Cholera		33
■ Stomach infection		28
■ Typhoid Fever		16
■ Skin diseases		13

Mothers believe that diarrhea results mainly from children eating “something dirty” or “some food that made them feel bad,” which also refers to food contaminated with dirt. To a lesser extent, handwashing appears to be associated with the presence of diarrhea, as well as dirtiness and drinking untreated water. Based on this, researchers conclude that for mothers, dirtiness is a cause of diarrhea. Mothers directly associate childhood diarrhea with the consumption of something dirty (because it was dirty, because the child did not wash his hands or because he drank unboiled water).

Table 25. Reasons explaining the occurrence of diarrhea in children

	n	%
■ Because they ate something dirty	496	60
■ Because the food made them feel bad		38
■ Because of infection		18
■ Because they did not wash their hands		16
■ Due to the cold		14
■ Due to dirtiness		13
■ Because they drank untreated water		13

Good health is associated with a clean smell. Washing the hands with soap produces a clean smell. Mothers believe that clean hands do not contaminate food because “*if they don’t wash their hands, they get sick,*” as one mother from Lima said. Nevertheless, some mothers do not have a clear concept of “preventing” or “avoiding” illness. Rather, they believe that something can be done to cure the illness.

They know that cleaning the house and handwashing are important, although they do not explicitly identify them as prevention activities.

Soap kills germs.

Mothers believe that there are germs and bacteria everywhere. In dirt/sand/ground/dust, in flies, garbage and feces, in smells, even on the newspaper. They believe germs are harmful to health, particularly children's health, and therefore must be eliminated. Mothers report that they can kill germs by using bleach, alcohol and soap, but also with just water, if the person washes thoroughly twice. Soap "*cleans our dirt ... destroys the germs,*" according to a mother from Lima. For this reason, although soap is purchased or is intended mainly for washing clothes, some mothers save some of the bar to wash hands or the body.

Among the bath soap brands available, mothers recognize the sub-group of medicated or anti-bacterial soaps, which are made especially to kill germs and bacteria on the hands. Laundry soap is brought into the household to clean clothes, but is also used for handwashing.

Soap interrupts the dirt-hand-food transmission chain.

Mothers are especially concerned about the contamination or dirt that children bring to their mouths. Therefore, mothers know that they should have clean hands before handling food. They also try to ensure that their children do not eat anything dirty.

"You're not going to eat with dirty hands ... you need to eat clean food ... you wash when you go to the kitchen. You wash your hands before eating; otherwise you get a stomach ache." (mother from Lima).

When specifically asked, mothers report that the most disgusting form of contamination occurs when feces comes into contact with food. Flies are the main transmission vehicle, as are people who do not wash their hands after defecating. "*You're not going to eat with dirty hands,*" said one mother from Lima.

Mothers report that they should wash their hands with soap after defecating or coming into contact with feces because feces contain germs that can enter the body or food. Bacteria may be present even when something does not look dirty, which may contaminate the body and therefore make people sick, particularly children. Bacteria can cause intestinal infections, diarrhea, typhoid fever or hepatitis. Some mothers mentioned that the health facility had taught them the importance of washing their hands after coming into contact with feces.

To prevent disease produced from contact with feces, mothers use the following strategies: They clean the areas where feces are present, such as the bathroom; wash their hands; use the bathroom; and clean foods before consuming them. Mothers stressed the importance of avoiding children's direct contact with feces when playing.

Table 26. Measures to avoid contracting illnesses through feces

	n	%
■ Cleaning bathrooms, latrines	493	40
■ Handwashing		37
■ Using the bathroom		22
■ Not allowing children to play with feces		14
■ Washing foods		13

6.4.2.1.3. *Avoiding morally justifying the lack of handwashing with the lack of resources: 'poor but clean'*

Most mothers believe that claiming there is no soap or water is no excuse for avoiding handwashing. Mothers have these resources. If they do not have them on hand, they are able obtain them from other places. The underlying concept here is the predominance of the values of cleanliness and work over deficiencies or poverty. Cleanliness is an obligation, a duty deeply-rooted in these women's belief systems. Being poor does not mean being dirty. Mothers claim that people who do not wash their hands use their poverty as an excuse.

"There are some lazy mothers, they say they're poor, they don't have soap ... but being poor doesn't mean being dirty." (Chep02)

Any soap can be used, there should be no preference. There is always soap.

All mothers report that any soap can be used and that detergent can even be used if no soap is available. They view it as negative to prefer brands or types of soap. Any soap will do, according to mothers. Since they must buy soap anyway to wash clothes, they can use some of it for handwashing. This reinforces the findings for the different reported uses of laundry soap, which was the type of soap most often used for handwashing. Mothers mention using laundry soap for handwashing when asked about the daily uses of this soap.

"You always have to wash your hands, there should always be some Bolívar soap at home for handwashing." (cngf02)

"There is always some. Since I wash every day with soap, there are always pieces left over and we use them to wash (our hands)." (arep02)

Prices vary. Product preferences are flexible.

Mothers are aware that a large soap market exists. Soap is even sold in small pieces of 0.50 nuevos soles each to ensure that households have access to this product.

"You buy a little piece ... when there's money you buy a bar, which lasts a week ... (the pieces last) two days." (iqep05)

The mothers in the sample are aware that they can buy more expensive soaps if they have the money, such as Marsella, which many believe is the best brand. When they have little money, they buy whatever brand is cheapest. The quality criteria used by mothers when choosing soap include good washing characteristics, abundant suds and a pleasant smell. These criteria are flexible if money is tight.

Do you think about the smell when you buy it?

“No, I just buy the cheapest brand.”

“It has to wash well.” (jugf01)

“There are soaps with different prices and smells, but you buy whatever you can.” (cngf02)

Price is one criterion for purchasing laundry soap (especially in rural areas) since mothers report that they spend significant amounts on this product. Almost half of the study participants reported buying laundry soap (43.4%) as well as detergent (52.5%) on a weekly basis (Table 32). There are a variety of soap brands whose prices vary. In addition, soap can be purchased in bars or in pieces, *“You buy what you can.”* Unlike bath soap, fragrance is not a major consideration for laundry soap, but mothers do have some preferences, since they report that some brands have an unpleasant odor (smelling of papaya or fish). They also prefer the less oily brands and the ones that produce the most suds.

“Lagarto doesn’t clean well”

“Misti smells like fish. It’s pure fat, grease.”

“It doesn’t last long...one quick wash and it’s gone. There are no suds. I use Bolívar more.”

“Chuya chuya smells like papaya.”

When mothers bring soap home, they usually divide it to avoid mixing uses.

Many mothers cut the soap into pieces for the different uses in the bathroom and kitchen.

“I put half here and half inside.” (arep05)

“I cut off a piece for the bathroom and the other piece for the laundry.”(chep02)

“I buy Bolívar to wash clothes and cut off a big piece for the bathroom.” (cngf02)

In other cases, mothers prefer to use the soap “leftovers” which remain after laundering for handwashing and bathing. When the soap becomes very small and difficult to use for washing clothes, it is used for personal hygiene.

*“We use what’s left over, that little piece that can’t be used for washing clothes.”
(mother from Chiclayo)*

“There’s always some. There are always some pieces of soap left over from my daily washing.” (mother from Arequipa).

Some mothers report that they cut the bar into pieces to be used for the different functions in different areas, for which reason they preferred separate pieces of soap.

“You’re not going to use the same soap you wash pans with, it would be too rough ... you cut off part for the clothes and another part for the dishes.”(iqgf02)

It is part of what the husband has to give you.

In rural areas where husbands are the main source of household income, the purchase of soap and other household supplies is a demonstration of the husband’s concern for his home and his wife.

Do you sometimes not have enough money to buy soap?

Yes (together)

- *It costs money.*
- *You have to be careful.*
- *When there’s no money for soap, you save some.*
- *You have to save money to buy soap.*
- *There’s always enough, I don’t know where he gets the money to buy soap.*

So women make sure they have it, no matter what?

Yes (together).

- *That’s why you have a husband, so he can bring you soap.*
- *That’s why everyone has to have a husband (laughing).*

So you tell your husband, “bring me some soap”?

Yes (several)

- *If you tell your husband to bring soap and he doesn’t have any money.*
- *You don’t wash his pants.*
- *If he doesn’t bring it, how are we going to wash the clothes?*
- *They bring it.*
- *All of them bring soap.*
- *He already knows what soap to buy.*

And if he brings a different brand?

- *You have to wash with what he brings (laughing).*

- *If you don't wash with it, he won't want to bring it, he'll be mad.*
- *He won't want to buy it. (smgf01)*

Families are able to adapt to the availability of water.

A large percentage of the households have only one water outlet in the household. Many must collect and store water. This limitation should not inhibit handwashing, according to the mothers because handwashing does not require much water.

Many mothers are aware of the importance of handwashing.

Another available resource that mothers identify is the knowledge of when handwashing is necessary. They claim that people should wash their hands if they know when to do so. Knowing why promotes the practice. If the mother knows, she does it. She ensures that water and soap are available.

6.4.2.1.4. By keeping the family and the house clean, mothers receive social approval.

To summarize, the mother is responsible for ensuring that children are clean and wash their hands. *“You shouldn't let a child get used to being dirty.”* Society expects the mother to perform this role. According to most mothers, parents communicate the contents and techniques of handwashing to children. They have different ways of doing so, as detailed in the section on communication channels:

“If I don't do it (show her child how to wash his hands), no one will.”(mother from Lima)

The mothers interviewed said they took great care to avoid criticism of their role as mothers. They try to avoid being criticized by others. This social control can originate from the neighborhood, school and the workplace.

Table 27. Mothers' opinions when they see a dirty child

	n	%
His mother does not take care of him	497	65
His parents do not take care of him		14
He has no parents		6
They feel sorry for him		27
He is a very mischievous child		5

Mothers especially fear criticism from their children's teachers. If their notebooks are dirty, if they have signs of dirt on their hands or fingers; or if the child goes to school with dirty hands or other visible body parts, mothers will either be reprimanded in writing, or what they most fear, at parent-teacher's meetings. Some mothers report that they would feel like crying if someone told them their children were dirty.

For mothers, a strong motivator for handwashing is avoiding disapproving looks from others.

“So others don’t look at you, so they don’t call you a pig.” (chep02)

“If you don’t wash they look at you like a pig at the school.” (juep04)

“My relatives and neighbors would look at me.” (liep01)

“You have to wash your hands to go to school, because if not they say ‘your mother is a pig.’” (cuep05)

When the mother has a presentable home and clean, well-cared for children, she receives recognition from relatives and neighbors. Mothers believe that this positively contributes to child-raising.

6.4.2.1.5. *Being fresh, agile, disease-free, healthy and having the approval of others, results in a productive, responsible person who can work and who can serve as an example for others, particularly children.*

The concept of being clean, as demonstrated, is the opposite of being lazy, neglectful and unkempt. A clean person will have an easier time finding work. If a person keeps her body and her house clean, then her work will also be clean. If the person is not responsible with her body and her children, she will be less responsible in her work.

“First people know her, so when the day comes when she needs a job, they know that she is clean.” (Arep05)

“If you don’t wash, if you don’t clean, your children might be like that, too.”

What would be the advantage for a man (of being clean)?

His children and wife would see that he was clean and that he changed into clean clothes.” (chep02)

6.4.2.2. Elements that inhibit handwashing with soap

The data collected support the argument in favor of cleanliness, but also emphasize the complexity of keeping the hands clean. As the person responsible, the mother has a desire for cleanliness that competes with her many household duties, the lack of resources or the limited availability of resources at the right time and the right place. Mothers do not view themselves as contaminators of food because they claim that their multiple household chores obligate them to have their hands in water or in contact with soap.

6.4.2.2.1. *Cleaning is the woman’s responsibility. Mothers do not have support.*

Mothers have overall responsibility for caring for the children and the house. Some mothers believe that their husbands do not wash properly or when they should. Study

participants believe that women are cleaner than men. Ensuring that men are “combed, groomed, changed ... with clean clothes ... also depends on the woman, since she washes and irons his clothes.” (Chep02) In addition, mothers have to practice personal hygiene because they take care of babies and handle food and therefore must have clean hands. The order/disorder of the house is associated with the order/disorder of the children and also with the order/disorder of the daily organization of the household, which is also the woman’s responsibility.

Mothers are also responsible for caring for the children: they are at fault when children are unkempt. Fathers provide support when the mothers are busy, as do grandmothers and other relatives.

Mothers have little support in this responsibility. Not all spouses are helpful. Women often feel pressured because their husbands do not like to see their children dirty.

“The man grabs his machete, takes his ax and goes to the field, coming home only to eat, rest and go to bed.” (smgf02)

Mothers’ multiple chores compete for the time they need for caring for their children and cleaning. Most mothers report that they may forget or be too busy to wash their hands or those of their children.

“Being a homemaker is more work than working at a job because at a job you just do one thing but in the house you have to do a lot of things: wash, cook, and take care of children.” (arep02)

Mothers who work outside the home or in the field find it problematic to take soap with them for handwashing.

The mother was never taught handwashing techniques and does not have the custom of handwashing

One explanation for not washing the hands is a lack of knowledge of the practice or its importance. This is most frequently seen among mothers living in rural areas. They do not know about handwashing because their parents never taught them. Therefore, they have not developed the handwashing habit. People will wash their hands throughout their lives if they are taught as children.

There are mothers who because they are lazy, neglectful or careless, have become used to being dirty.

People can get used to being dirty, just as they can get used to being clean. Some people even use dirtiness as a form of ethnic distinction, to establish their membership in a particular group. This is transmitted as a pattern of behavior from adults to children.

“People get used to being dirty, it doesn’t bother them. Bathing makes them cold.” (arep03)

*“Highlanders don’t wash, they’re filthy and they’re comfortable that way.”
(liep05)*

“Children of dirty parents are dirty and will be dirty adults. Dirty children don’t change.” (chep02)

6.4.2.2.2. *Limited availability of resources. Resources are not on hand, thereby requiring more steps to obtain them.*

Mothers report that they sometimes have no soap at home. There is little money to buy soap frequently or to buy enough soap. Mothers also mention that they do not necessarily replace the soap immediately after it runs out. Family members may give soap as a gift or a contribution, when families have no money to buy it.

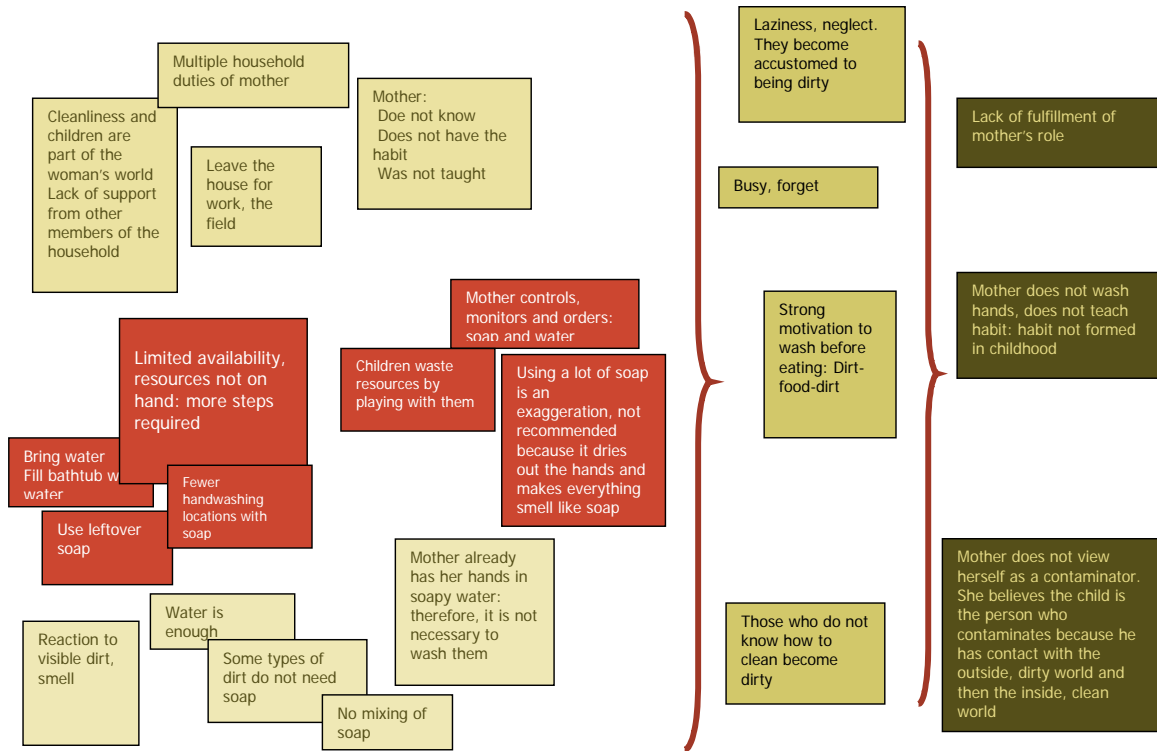
“When my brother doesn’t have enough, I help him out, I support him ... ‘here’s some soap,’ (I tell him) ‘wash your clothes’” (chep03)

“I always have some. The only time I went without was when I built my house. It was sad because I didn’t have any to wash the clothes ... my mother bought it for me. My husband worked but we used the money to buy the roof tiles and straw mats.” (juep05)

While all households reported using soap in the 15 days preceding the survey, not all handwashing locations had soap (see the section on handwashing locations). In other words, there was no soap on hand, especially in locations far from defecation sites.

Although mothers say they prefer bath soap to laundry soap for handwashing, most households had laundry rather than bath soap in the handwashing locations. Few use detergent or dishwashing soap for handwashing (see section on handwashing practices). This suggests that the price of bath soap is one of the limitations for having it in the home, even though mothers prefer this product for handwashing. Elements of social prestige also come into play here because washing and bathing with bath soap is more acceptable than using laundry soap for these purposes. Detergent and dishwashing soap are the least desirable products for handwashing. Although they cost less and are present in the household, they are rarely used for personal hygiene.

Diagram 4. Detailed conceptual diagram of the factors inhibiting handwashing with soap



When soap is brought home, it is usually cut into pieces to avoid mixing uses.

The presence of soaps in different locations in the household occurs, in part, because bars of laundry soap are usually cut into pieces to be placed in the different areas. This provides separate soap pieces for different tasks, such as washing clothes and bathing. Some mothers believe that the germs the soap removes from the clothes can subsequently pass to the body if the same piece of soap is used for bathing. Thus there is a perception that soap can also spread germs from clothing to the body or the hands, for which reason separate pieces are preferred.

“You can’t use the same soap for the clothes and for the body ... clothing has a lot of germs, dirt and things, you know?” (cngf02)

“The coordinator told us not to use the same soap for everything; the germs from the clothes stay in the soap.”

While mothers view the practice of dividing soap into pieces for clothes washing, bathing or kitchen chores as a positive thing (*“I put half here and the other half inside.” (arep05)* *“I cut a piece for bathing and another for washing clothes.”*), researchers believe that this practice limits the availability of soap for handwashing because mothers report that *“You’re not going to use the same soap you wash pans with.. it will be all gritty ...one part is for the clothes and the other is for the dishes.” (iqgf02)*

Water is not easily accessible.

Some mothers must carry water, particularly in rural areas. Even in urban areas, running water is available in a single outlet in the household, and not necessarily near the defecation site (see section on handwashing locations). Therefore, households have limited access to water, which restricts children's access in particular because they must be bathed in a bathtub. In this situation, the mother or other household members must perform more steps to ensure a water supply. When they are in the field with no nearby water source, it is almost impossible to carry along water just for handwashing.

"We eat when we're all dirty."

"We eat with mud on our hands when we are out harvesting. We have no choice but to eat with dirty hands." (mothers from Junín and Cusco).

Children waste soap.

Because soap is viewed as a daily necessity, the mother must take care of it and keep it away from the children. Mothers report that young children love to play with soap and water. This means that mothers must observe children as they wash their hands, adding to their already heavy workload. They have difficulty keeping a constant eye on the children. In addition, handwashing opportunities are restricted because mothers control the use of soap and water. As a result, handwashing as an automatic habit is less frequent, being limited to specific times during the morning.

Using a large amount of soap is an exaggeration.

Some mothers believe that washing hands with soap several times per day is harmful because it dries the hands and leaves them smelling like soap just before they handle food, which is undesirable because the soap could get into the food.

Mothers agree that detergent is not good for the hands. Detergent is used almost exclusively for washing clothes (59%) (Table 31, Annex 2). It is considered "strong" for both hands and clothes, since it can harm the skin, burning or drying it. For this reason, mothers prefer to use soap or wear gloves when doing laundry.

"I'm allergic so I don't wash with detergent; soap is better." (mother from Chiclayo).

6.4.2.2.3. *Reaction to visible dirt*

Some types of dirt do not need soap

Water is enough.

Many mothers report that if they do not have soap or forget to use it, they can obtain adequate results by washing their hands with water two times. Some even claim that it is easier to wash without soap and that they feel clean without soap.

“You wash twice with water. You have to know (how to do it).” (mother from Lima).

“You wash even if it’s just with water.”(mother from San Martín)

“Just water, but you have to do it twice.” (mother from Chiclayo)

“It is easier with water only.” (mother from Junín)

“You can be clean without soap.” (mother from Chiclayo)

The hands do not spread germs, flies do.

Mothers believe that the hands, especially those of adults, do not spread germs. Children, however, are in contact with several sources of contamination, and bring dirt from the outside into the house and contaminate the food, for which reason they may suffer from diarrhea. However, mothers point to flies as the main culprits in food contamination. Flies bring more illness and germs than hands do.

Mothers already have their hands in water, for which reason they do not need to expressly wash them.

Since mothers are frequently in contact with water and soap or detergent during the course of their chores, such as washing the clothes, they believe that their hands are clean, or at least washed, for most of the day.

Tolerance for different types of dirt

Most mothers believe that dirt is something that can be seen. They distinguish between slightly dirty (soil, for example) and very dirty (grease or feces). The level of dirtiness of certain elements is measured in terms of how easily the dirt can be removed by washing. The dirtiest things (grease, fish, banana resin, etc.) require the use of stronger cleaning agents (detergent, bleach).

Mothers believe that there is no need to wash the hands with soap if they do not look or smell dirty. This is reinforced by the fact that mothers do not distinguish between those who use or do not use soap for handwashing. Individuals who wash with soap and those who do not appear to be equally clean.

Infant feces do not produce disgust. Some mothers believe that they do not contain germs and do not smell because they are composed of pure milk. Once the child begins to consume food, his stools begin to take on the characteristics of adult feces. Nevertheless, the household observations demonstrated that when mothers changed diapers or disposed of babies' feces, they tended to use soap to wash their hands more often.

Result: The mother does not view herself as a contaminator

Mothers believe that children are the people who get the dirtiest and also the ones who produce the most dirt because they are in contact with dirty, harmful elements. Children are more exposed to dirt because they play with animals and dirt and even pick up animal feces because they do not know any better. Mothers report that their field of action is the domestic environment, which is clean, unlike the outside, which is dirty. Germs come from outside. Children are considered to be the people who spend the most time outside.

*“We all come and go, we leave germs on the ground, things that may be dirty. They touch them with their hands and may put their hands in their mouths.”
(chep06)*

According to the survey data, respondents believe that hands are the parts of the body that require most frequent washing, other than the genitals, particularly in children.

The risks of contaminating the hands with feces when changing diapers or children's clothing with feces are minimal, according to the women interviewed, because it depends on the skill of each mother. The risk increases when the child has diarrhea. Mothers perceive that the hands will get dirty if they smell like feces or if they come into contact with feces.

When washing soiled diapers, the act of washing also cleans the hand. If the mothers had to wash in the kitchen beforehand, they would have had to wash their hands with soap.

After the mother defecates or cleans a baby's bottom, she does not believe she is dirty because she cleans herself carefully. Mothers report that they are at a greater risk of getting dirty if they have diarrhea.

6.4.3. Teaching the practice of handwashing

6.4.3.1. Caring for children and teaching the behavior

In the sample, 92.4 % of mothers report that they are the main people responsible for caring for children (Table 1, Annex 3) and for teaching hygiene behavior (Table 2, Annex 3). Sixty-four percent of the time, mothers used the strategies they learned as children to teach their own children.

In focus group discussions and in-depth interviews, mothers talked about how they learned the practice. The learning is divided into two periods (Chart 1, Annex 3):

The world of children. The handwashing habit is most successfully taught in the home. It is the place where the habit is developed through daily repetition by the mother. Therefore, families⁴⁵ recognize mothers as the authority in this area, and believe that teaching personal hygiene is a legacy the mother passes on to her children. Women report that childhood is the time to teach the practice: *“They end up being like they were taught, if they were dirty growing up, they’ll stay that way when they’re big; if they were clean, they’ll stay that way.”* (Women, Arequipa, arep 02).

Mothers’ preferred methods for teaching handwashing include punishment, stressing the dignity of cleanliness and communicating their own experience.

- **Punishment.** The mother takes action so that the child will carry out the behavior. Mothers believe that physical or verbal abuse is effective. *“You have to smack them to teach them, pull them by the ear to get them to wash their hands, but you shouldn’t hit them too hard.”* (Women, Lima CNGF 2).
- **The dignity of cleanliness.** Mothers appeal to cleanliness as a characteristic of dignity. *“My mother used to always say that even though we were poor, we held our heads up high, we were clean and honorable. It didn’t matter if our clothes were old, we were clean, even if we washed with just water. I got that from my mother.”* (woman, Junín, CNPE 01).
- **Mother’s experience.** The mother brings her family experience, which gives her the authority to teach the practice to others.

The school is also recognized as a place that influences the socialization of the practice and are conscious that this support is useless if handwashing is not practiced at home. Teachers are the school authorities in teaching this practice. The teachers help the children learn by doing, but they do not necessarily explain how to perform this practice or why it should be done.

The adult world.- Mothers believe that efforts to instill the behavior in adults are largely unsuccessful.⁴⁶ They identify at least four different channels of handwashing information⁴⁷:

- **The health facility** establishes patterns of action (what should be done) through meetings and informative talks. Mothers recognize the authority of health facilities with respect to cleaning and hygiene topics.

⁴⁵ It is interesting to note that women recognized that men sometimes assumed women’s roles and taught hygiene behavior. A Junín woman said, *“...my brother combed our hair before sending us to school. He was the one who taught us. My mother of course told us to wash up, but she left early and arrived late (...) our brother would hit us if we didn’t (wash), he was the one who cooked, he was the woman.”*

⁴⁶ Mothers always talked about this in the third person. They did not seem to believe that others could change.

⁴⁷ The references to these channels coincide with the individuals or institutions that women recognize nearby sources for seeking information on health and childcare. See the section on social networks and opinion leaders.

- The neighborhood and the school use social sanction (what must be done) by punishing the child or calling attention to the mother in the case of the school. Neighbors harshly berate mothers, calling them “*careless, lazy, pigs,*” which is considered to be a criticism of their role as mothers. Teachers are the voices of authority at school while other mothers are the voices of authority in the neighborhood.
- The mass media were mentioned only in Lima and Arequipa. The voice of authority is not the medium itself (the journalist) but rather the physicians who provide advice on mass media programs (radio or television). Mothers learn by “seeing” or “hearing” what the authority says.
- Domestic work Some women who work in other homes as domestic employees stated that other homes could be a source of information. The employer, whose authority is based on her experience, shows the mother how to do things. Apparently, this appears to be the most effective channel.

Surprisingly, mothers reported that their children would have an influence on changing their behavior. Mothers report that when a child under their care criticizes them for not washing their hands, their voice has authority and causes “shame” since it proves that the adult is being irresponsible.

The study also investigated the ways in which mothers responsible for teaching this habit behave with their children. When asked how children learn to wash their hands with soap, most mothers responded that what was learned at home was essential for defining future behavior.

Mothers said that teaching the practice of handwashing was a gradual process:

- The process begins before a child understands (at age two, approximately). Mothers help them wash their hands and administer the handwashing supplies.
- Between the ages of three and four years, the mother perceives that the child understands about handwashing but feels it is necessary to observe him washing his hands. This coincides with the average age that mothers believe children can wash their hands by themselves — 3.6 years (Table 3, Annex 3). Mothers give the necessary supplies to the children and monitor their use.
- Finally, at the age of 10 years, approximately, mothers order children to wash their hands and punish them if they disobey. They give the children the necessary handwashing supplies.

Mothers believe that children should wash their hands before eating, after using the bathroom and when they are visibly dirty.

In the perception of mothers, two factors influence this process, either hindering or supporting it:

1. The child's personality (docile, rebellious), his learning capacity and his sense of responsibility.
2. Gender. Girls are thought to have a longer learning period than boys. Even adolescent girls can change since they can feel "embarrassed." This refers to the social norm that establishes that a woman must be "clean."

Clearly, it is the mother who is responsible for teaching this practice to children. Mothers say they are strict because they are responsible for the process. In contrast, fathers help through example. Since they are not responsible for teaching handwashing, they tend to be more permissive. Aunts and uncles, grandmothers and siblings also provide support in the process.

Mothers report using a variety of methods to instill the habit in children: correcting behavior,⁴⁸ punishing, as well as monitoring the activity and the proper use of resources. They also serve as an example, and use play, experimentation, persuasion and humor to teach children, as well as by making negative comparisons with others. The observation results were as follows: mothers ordered their children to wash their hands 62% of the time, explaining the practice on only 27% of these occasions (Table 4, Annex 3) and using reward only 3.9% of the time (Table 5, Annex 3)

The reasons mothers gave for why a child should practice handwashing were structured around the semantics of hygiene.⁴⁹ Three concepts were mentioned frequently: cleanliness, illness and the child's character.

- With respect to the first concept, a semantic relationship is established between cleanliness and the mother's responsibility as the family caregiver; cleanliness and health, and between cleanliness and feeling good (smelling good, smelling clean).
- The second concept mentioned is illness, which is associated with cost in terms of time and money.
- The third concept is the effect that hygiene has on a child's character: it makes them alert (intelligent or "agile"⁵⁰) and affectionate.

The focus group discussions and in-depth interviews enabled researchers to make qualitative observations about the different tones women use to refer to the concept of dirty. Women used a mocking or joking tone when referring to what they considered disgusting or dirty. In this regard, words such as feces or excrement were rarely used or were used in a mocking or humorous tone.

⁴⁸ Correcting behavior is associated with ordering, organizing, demanding, using scare tactics and forcing.

⁴⁹ Semiotics is the study of signs and signification systems. It examines how words establish relationships that develop paradigms or forms of structuring thought. By investigating these relationships, researchers can learn more about these structures of underlying meaning. See the work of Eliseo Veron.

⁵⁰ In Cusco, the Spanish word *ágil* (agile) is used to describe an intelligent child.

Mothers used this same depreciatory tone when speaking about women or homes that were dirty

6.5. Target audience, communication channels and media

Specific objective of this section: To identify the target audience of the communications campaign to promote handwashing and to identify current communication channels.

6.5.1. Primary target audience: mothers

The primary target audience is the population segment that most closely implements the desired behavior or that influences others to do so. In this case, the target audience is mothers responsible for caring for the children and therefore for teaching handwashing behavior. They are also the people who select and buy soap.

Over 60% of survey respondents believe it is the mother's responsibility to make the decision to buy soap and to actually purchase it (Table 6, Annex 3). In addition, the mother is also responsible for administering the soap for handwashing, at least in the case of children.

6.5.2. Primary target audience media consumption Mass media

6.5.2.1. Radio

6.5.2.1.1. Household access to the medium

Seventy-two percent of households have radios (Table 7, Annex 3). Seventy-seven percent of the mothers interviewed reported listening to the radio in the 15 days preceding the survey (Table 8, Annex 3), indicating that they rarely listened to the radio outside of the home. Respondents listened to the radio an average of 5.83 days per week (Table 9, Annex 3).

Analyzing data by region, researchers found that radio consumption was higher in rural areas. Average radio consumption by women in rural areas was 80.4% as compared with an average of 76% in urban areas. (Table 10, Annex 3). In both areas, the home was the listening location in over 90% of the cases (96.7% for rural areas and 94.5% for urban areas).

Consumption was highest between Monday and Friday (98.7%) and lowest on the weekends (Saturday and Sunday) (73.5%, Table 11, Annex 3). This trend is most likely associated with the greater entertainment options offered in the cities.

During the household morning observations, field workers noted that 43.2% of the households turned on the radio at some point, 40.4% did not do so and 16.4% did not have a radio (Table 12, Annex 3).

The results show a consumption marked by a large supply of stations (50 stations were mentioned) and a high consumption migration. Listening preferences were distributed among local, regional (Lima and other regions) and national radio stations. The following radio stations were among the most frequently mentioned by the women in the study: Radio Programas del Perú (RPP), with 21.3%; Radio Caribeña,⁵¹ with 16.3%; Radio Melodía (local Arequipa station), with 7.4%; and Radio Ritmo, with 7.1% (Table 13, Annex 3). In urban areas, RPP (18.3%), Radio Caribeña (20%) and Radio Melodía (9.7%) were the popular stations. RPP has a higher consumption in rural areas (31%) where local radio stations are also popular, including Santa Mónica in Cusco (16.7%) and Radio Tabaloso in San Martín (15.6%). Local radio programming offers different types of music and local news programs (Table 14, Annex 3).

In general, Lima radio stations that broadcast to other regions of the country account for 38.4% of radio consumption while local radio stations account for 52.1%. In rural areas, local radio stations account for 85.6% of consumption, while Lima stations only cover 5.6% (Table 15, Annex 3).

Radio consumption is highest during the morning on weekdays (early morning, 23.2%, morning, 87.9%, afternoon, 62.1% and evening, 26.1%), and on weekends (early morning, 15.5%, morning, 73.9%, afternoon, 55.1% and evening, 19.1%), with lower consumption during the afternoon and evening. In rural areas, radio is consumed throughout the day (Table 16, Figures 1, 2 and 3, Annex 3).

6.5.2.1.2. Most consumed programming

Programming preferences do not vary between weekdays and weekends. Music programs are the most popular (Monday through Friday, 72.9%; Saturday and Sunday, 76%) (Table 17, Annex 3).

Observations corroborated survey results. When the radio was turned on in the home, families listened to music programs 85.6% of the time and news programs 19.4% of the time. Mothers paid little attention⁵² to either type of programming (Table 18, Annex 3). When mothers chose the programming, 33% selected music programs and 31% chose news programs. There was little reported preference for other types of programming, such as the radio novella, humor or sports programs.

⁵¹ Radio Caribena plays northern tropical music.

⁵² A mother was defined as paying little attention when she made no visible sign of active listening. A mother was considered attentive if she made comments, stopped to listen, danced or made some sign that she had been actively listening and responded.

6.5.2.1.3. *Uses of the radio*

Mothers most often mentioned entertainment and information as the reasons why they listened to the radio. During the week, 76% said they used the radio for entertainment, while 44.2% used it for information. On weekends, entertainment usage increased to 78.8% while information usage decreased to 16.3%.

While entertainment programming was preferred in both geographic regions, consumption of news programs was higher in rural areas than in urban areas (46.2% versus 30.3% for weekdays and 19.6% versus 21.4% for weekends) (Table 19, Annex 3).

6.5.2.2. *Television*

Seventy-two percent of the households visited had a television set⁵³ (Table 7, Annex 3). Overall, 75.8% reported having watched television in the two weeks preceding the survey (Table 8, Annex 3), with an average weekly viewing of 6.39 days (Table 9, Annex 3). Television consumption dropped on weekends (from 99% during the week to 73.5% on weekends) (Table 11, Annex 3).

In urban areas, 87.6% of mothers reported television viewing during the 15 days preceding the survey, while 34.8% of women in rural areas watched television (Table 10, Annex 3).

During the household observation sessions, 40% of televisions were turned on, 33.6% were not and 26.6% did not own a television (Table 12, Annex 3).

The most popular stations during the week were: América Televisión (63%), ATV (47%), Panamericana (20%) and Televisión Nacional del Perú (5%) (Table 23, Annex 3). Study participants showed a preference for afternoon (36%) and evening (73.9%) viewing (Figures 1, 2 and 3, Annex 3). Programming shown on the two most popular television stations during peak viewing hours was mainly of the melodrama genre: soap operas (América Televisión) and real-life stories (ATV).

6.5.2.2.1. *Types of programming most consumed*

In general, women preferred to watch soap operas (70.5%), news programs (34%) and movies (13%) from Monday to Friday. On weekends, survey respondents watched movies (45.9%) news programs (19.8%) and comedy shows (8.5%) (Table 24, Annex 3).

Observation results confirmed this information. In the households, 49.5% of the television sets were showing soap operas, 40.2%, cartoons, 23.1%, news programs and 13%, comedy shows (Table 25, Annex 3).

⁵³ Color or black and white television sets. Households may have more than one television set.

On occasions in which it could be determined that mothers chose the programs, they selected soap operas 62.2% of the time, comedy shows 34.6% of the time and news programs 19.6% of the time. Children chose cartoons in 57.6% of the cases.

6.5.2.2.2. *Uses of television*

Entertainment (88.3%) and information (31.9%) were the two uses most often cited by mothers for weekday programming. These figures are similar to those of weekend preferences (78.8% and 19.8%, respectively).

6.5.2.3. Print Media

Fifty-two percent of the women interviewed said they had not read any print media (magazines, newspapers or others) in the 15 days preceding the survey. Forty-one percent had read newspapers, 1.9% brochures, 3.1% magazines while 5.1% had consumed other print media. Of the mothers surveyed, 5.8% claimed they could neither read nor write.

Newspaper readership was as follows: 40.5% read *El Popular*, 12.3% *El Norteño* (a Chiclayo newspaper), and 11.3% *Correo* (Table 27, Annex 3).

6.5.2.4. Community Media Preferences

The survey included questions on mothers' preferences for media characterized by group consumption. These media were not necessarily continuously consumed; rather, they were preferred. Women claimed they paid attention to advertising messages 66.8% of the time, while 61% enjoyed movies, 56.6% puppets and 45.4% theater (Table 28, Annex 3).

In addition, researchers investigated the use of leisure time in an effort to identify the spaces that could be exploited to develop interpersonal communication strategies. Respondents said they stay home or visit another's home (63.2%), go to the park or fairs (15.8%), have no free time (8.6%), attend churches or temples (5.4%) and participate in other activities (7%) (Table 29, Annex 3).

6.5.2.5. Music Consumption

Women prefer tropical (32.6%), Andean (25.2%) and romantic (24.2%) music. In rural areas, Andean music is the most popular (49%), followed by tropical music (27%). Thirty-five percent of urban women prefer tropical music, followed by romantic (29%) and Andean (18%) music (Table 21, Figures 4, 5 and 6, Annex 3).

The most popular Peruvian performers among study participants were pop singer Gianmarco (22.3%) followed by folk singer Dina Paucar (16.1%). In urban areas, 26.9% mentioned Gianmarco while 15.4% mentioned Dina Paucar. In rural areas, women mentioned Gianmarco (4.7%) and Dina Paucar (18.6%), along with folk singer Sonia Morales (10.5%) (Table 22, Annex 3).

In terms of international music, 48% of the women prefer romantic music and 10.5% like rock music.

6.5.2.6. Social Networks And Opinion Leaders

Social networks are defined as the set of similar ties (social relations) with a series of different actors (neighbors, friends, relatives, social institutions, etc.). Latin American studies on message reception demonstrate that social networks are channels⁵⁴ in which the content of mass media messages are discussed. They are also important sources of information.

For this study, researchers used horizontal social networks as a reference, that is, networks whose members are peers of the women (other women with the same characteristics). The study found that 36.8% of the women do not meet with their peers. For those who do meet, social support programs are their main reference: 17.6% participate in Glass of Milk programs; 7% in community kitchens and 3.6% in mothers' clubs. These options are not mutually exclusive. In rural areas, social programs are even more significant: Glass of Milk Program (28.6%), mothers' clubs (15%) and community kitchens (10%). In urban areas, 42% of the women said they do not meet with others, as opposed to just 16% of rural women who claim they do not meet with their peers.

Places of encounter include their own homes or those of relatives (12.4%), schools (11.8%), churches (8.6%) and markets (3.2%). There are no significant differences between rural and urban areas (Table 30, Annex 3).

During the observation periods, only 34% of the women stayed home, while 66% went to different locations, including the market (46%), the house of a relative or neighbor (12%), public institutions (7%), school (5.5%) or other locations (29.5%) (Table 32, Annex 3).

In an effort to identify credible information sources, researchers asked women where they seek information on the care and hygiene of children, as well as the public figures they would trust. Fifty-nine percent of mothers said they would ask health care personnel about child hygiene and care, 11% would ask their mothers and 10% would not consult anyone. With respect to children's hygiene, 46.4% of mothers would ask health care personnel while 26% would ask no one and 11.4% would seek the advice of the maternal grandmother. Corroborating these data, women spontaneously mentioned that health facilities provide them with information on child hygiene 50% of the time, while the maternal grandmother does so 18.7% of the time (Tables 33 and 34, Annex 3).

Seventy-four percent of the women said they would not trust any public figure, 7.1% would trust a political journalist (Cesar Hildebrandt), 5.6% would trust a politician,

⁵⁴ For further information, see the extensive bibliography on the social measurement theory developed by Guillermo Orozco in Mexico, as well as that developed by Jesús Martín Barbero in Colombia.

4.2% would trust an entertainment journalist (Magali Medina), 2.4% would trust a singer and 2.2% would trust a religious leader (Table 35, Annex 3).

6.5.2.7. Consumption and Recall of Commercials for Cleaning and Hygiene Products

Women recalled detergent commercials most often (88.6%), followed by those for laundry soap (70.8%), dishwashing soap (55.3%) and bath soap (53%) (Table 36, Annex 3). Twenty percent of the women in rural areas did not recall any commercials, as compared with only 3% who did not recall commercials in urban areas (Table 37, Annex 3).

The most frequently recalled detergent commercials were those of Ariel (49.8%) and Ace (18.1%). Laundry soap commercials recalled included those advertising Bolívar (76.2%) and Marsella (12%). Bath soap commercials most often recalled were those advertising Camay (36.9%) and Dove (15.8%). Ayudin (33%) commercials had the highest recall for dishwashing soap brands.

Nevertheless, commercial recall was not associated with product consumption. Ace, Ariel and Magia Blanca detergents were found in 21% of households. For bath soaps, Camay (20.2%) had the highest consumption while Dove was consumed by just 2.8% of households. There was a correlation with message recall in the case of Ayudin dishwashing soap, which was present in 24% of the households.

The most recalled elements of these commercials included actor Salvador del Solar (22%) and the cleaning (14%) and whitening (12.7%) properties of the product. The least recalled characteristics included gentleness (1.7), fragrance (2%) and price (4.8%) (Table 38, Annex 3). In rural areas, the most recalled elements were the cleaning (35.7%) and whitening (19.6%) properties, followed by the actor Salvador del Solar (12.5%). In urban areas, Salvador del Solar had the highest recall (23.8%), followed by the whitening (11.4%) and cleaning (10%) properties (Table 37, Annex 3).

The most frequently sited commercials had the following characteristics:⁵⁵

- In general, commercials that told stories had high recall.
- The preferred detergent and soap commercials referred to the role of homemaker. Nevertheless, the most frequently mentioned commercial (Ariel) alluded both to that role and the role of women.
- The preferred detergent and soap commercials mentioned savings and affection for the family.
- The bath soap commercials with the highest recall contained elements of seduction, romanticism and fantasy.

⁵⁵ As part of the study, the commercials with the highest recall were recorded and a brief analysis was made of their content.

6.5.3. Secondary target audience: fathers and siblings

The secondary target audience of the population segment has the capacity to influence the primary target audience in changing practices. To identify this audience, researchers observed the individuals who supported the mother in caring for children under five years, and identified the individuals in which the mother trusts to consult about child care and child hygiene.

Observation results showed that 18.8% of mothers received support from fathers, 17.8% from siblings over the age of five and 15.4% from grandmothers. As stated in the section on social networks and opinion leaders, health care personnel and maternal grandmothers were the sources most often consulted on children's hygiene (Table 33, Annex 3). Observation results reveal that 18.8% of mothers received support from fathers, 17.8% from siblings over the age of five and 15.4% from grandmothers. As mentioned in the section on social networks and opinion leaders, health care personnel and grandmothers were consulted about the care and hygiene of the child (Table 33, Annex 3).

The study asked mothers about the media consumption of the fathers of the children in the sample. Sixth-grade children in schools were also surveyed about their media consumption and the public figures they would trust.

6.5.3.1. Fathers' media consumption

6.5.3.1.1. *Radio consumption*

Eighty-one percent of the men listen to the radio (Table 39, Annex 3). The radio stations most frequently mentioned included local stations (42.4%), RPP (27.8%) and Radio La Caribeña (13.6%) for weekday listening. Weekend consumption patterns were similar, with an increase in K Buena FM, which offers varied programming, including music, contests, magazines and news (36%), followed by RPP (13.5%) and La Caribeña (11.8%) (Table 40, Annex 3).

Fathers consume music (58.6%) and news (43%) programs during the week, according to mothers. On the weekends, consumption of musical programs increases to 61% and news program consumption falls to 24% (Table 41, Annex 3).

6.5.3.1.2. *Television consumption*

Mothers report that 74.6% of fathers watch television. The most watched stations during the week included América TV (49%), ATV (34.6%), Frecuencia Latina (28%) and Panamericana Televisión (18.9%). Consumption decreases on weekends: América TV (36.2%), ATV (25.5%), Frecuencia Latina (17%) and Panamericana TV (14%) (Table 42, Annex 3).

News programs (57.3%) and soap operas (19.6%) were the most viewed programs during the week. On weekends, news programs (27.6%) were the most popular (Table 43, Annex 3).

6.5.3.1.3. Consumption of print media

In the group of fathers of the children surveyed, 69.5% read a newspaper during the 15 days preceding the survey, 27% did not read any publication and 7.8% read magazines, brochures and other publications. Of the fathers, 2.6% cannot read or write (Table 44, Annex 3). According to mothers, fathers prefer the following newspapers: Correo (12.6%), OJO (7.1%) and La Republica (6.3%) (Table 45, Annex 3).

6.5.3.1.4. Musical preferences

Fathers preferred tropical (40.5%), Andean (26.5%) and romantic music (12.5%) (Table 46, Annex 3).

6.5.3.1.5. Media consumption of school-age children

Eighty-six percent of children said they listened to the radio in the 15 days preceding the survey, and 84% said they watched television during the same period (Table 47, Annex 3).

Radio consumption is higher during the week (93.1%) than on weekends (67.7%) (Table 49, Annex 3). Preferred stations include La Caribeña (13.2%) and unspecified local stations (46%) (Table 48, Annex 3). There is no significant variation in consumption on weekends. Preferred listening time is late afternoon/early evening (between 2:00 p.m. to 8:00 p.m.) during the week. On weekends, the schoolchildren listen to the radio anytime from 6:00 a.m. to 8:00 p.m. (Table 50, Annex 3). Most of the children prefer music programs (81.8%) (Table 51, Annex 3).

Children preferred tropical (35.6%) and Brazilian music (29%) (Table 52, Annex 3).

Children reported that they watch television between 2:00 p.m. and 10:00 p.m. during the week and at any time between 8:00 a.m. and 8:00 p.m. on weekends (Table 50, Annex 3). Consumption is higher on weekdays (97.6%) than on weekends (84.3%) (Table 47, Annex 3). They prefer América Televisión (54%), Frecuencia Latina (43%), ATV (29%) and Panamericana (16%) during the week. Weekend consumption patterns are similar: América Televisión (34%), Frecuencia Latina (24%), ATV (22.4%) and Panamericana (10%). These data follow the preferences of mothers, with a similar preference for soap operas (35.5%) (Table 54, Annex 3). Nevertheless, cartoon shows are the most popular among children, with a consumption rate of 47% on weekdays and 49.5% on weekends (Table 54, Annex 3).

7. Conclusions

7.1. Physical conditions and general characteristics of the population

- The households in the sample have better water supply services than sanitation facilities. Both areas require improved infrastructure to ensure access to a safe, convenient water supply, as well as efficient, comfortable and safe methods for disposing of feces.
- There was a statistically significant association between unmet basic needs and the handwashing behavior of mothers before handling food.
- There was a statistically significant association between the educational level of heads of the household and mothers and the mothers' handwashing behavior, both for risk activities involving feces and those involving food.
- There was a significant association between the type of water supply within the household and the handwashing behavior of mothers during risk events involving feces.

7.2. Handwashing practices observed

- There was a higher percentage of handwashing and use of soap in risk events involving feces than in those involving food.
- Most of the individuals observed washed their two hands completely and only half did not dry their hands.
- Within the household, the mother was the actor who most frequently washed her hands, both in risk events involving feces and those involving food.
- Despite the fact that they believe that handwashing is most necessary before eating, mothers washed their hands most often after they came into contact with feces, which suggests that an automatic reaction to the smell or appearance of feces is motivating the practice much more often than is the knowledge of the need to wash the hands before eating.

7.3. Availability of resources

- The high presence of soaps or detergents in the households observed suggests that the problem of not washing the hands with soap is not the result of the absence of this resource.
- Access to water is associated with the possibility of handwashing. In households with running water there was a higher percentage of handwashing observed than in those with a water source outside of the home.
- Detergent is the most commonly used cleaning product in the households observed. Consumption of this product tends to be higher in the capital city. It is placed in the kitchen, patios or courtyards since it is used for activities associated with care of the home (laundry and cleaning of facilities). It is not commonly used for cleansing the body because it is considered a “strong” product that produces allergies or burns the skin.
- Laundry soap is the second most consumed product in the households and the only one whose consumption does not vary according to geographic region (it is similar in Lima, the rest of the urban area and rural areas). Laundry soap is believed to be gentle but capable of removing dirt and therefore has a wider field of action than the other products (it is used for cleaning both the body and the home).
- Bath soap is consumed less than laundry soap and detergent and tends to be used more frequently in urban areas than in rural ones. It is normally located in the bathroom since it is used most often in activities associated with body care.

7.4. Factors that motivate and inhibit handwashing with soap

- When identifying factors that promote handwashing with soap, different elements or conditions come into play. These are associated with preventing the contamination apparent in the environment and with avoiding negative social control. In a context in which water, soap and handwashing locations are available, the mother becomes the main actor responsible for associating handwashing practices with the concepts that promote the practice in an effort to achieve a sense of cleanliness and to establish the link between health status and dirtiness. Mass and interpersonal media also play a role in promoting the practice, especially in reinforcing the ideal of cleanliness and the women’s role in achieving it.
- With respect to the sensation of cleanliness, mothers report that they prefer to feel clean, fresh, agile, alert and happy as opposed to restless, uncomfortable, distressed, sticky and tired, which is how they feel when they are dirty. They

generally wash their hands to keep them clean, avoid germs and remove dirt. Soap is used to kill germs, but above all to keep the hands soft and clean smelling.

- The practice of handwashing is reinforced by the concept that being poor does not mean being dirty. It is incorrect to say that the poor people in the study have no resources, because they do have soap and water in the home, as well as handwashing knowledge.
- Almost all mothers maintain that dirtiness and feces in particular produce stomach ailments such as diarrhea. Cholera is the disease most closely associated with feces. A person should wash his hands to prevent germs or bacteria (understood in general rather than clinical terms) from contaminating food and the mouth. Children are especially likely to come in contact with dirt.
- The mother protects herself from the criticism of neighbors, relatives and especially teachers. According to many mothers, if a child goes to school dirty or with dirty notebooks, his mother may be publicly reprimanded. In general, having an unkempt child, that is, one who is unwashed and thin, is synonymous with being a careless mother.
- By feeling fresh and happy, in other words clean, and by not being sick, a state of integral health is achieved. At the same time, if a person is healthy and has the approval of others because he is well groomed, a productive, responsible and healthy person is socially constructed.
- Factors that inhibit handwashing with soap include the multiple household chores of the mother, which compete for the time required to ensure children's cleanliness. Likewise, mothers believe that water and soap resources are limited. This is especially true in rural areas.
- Mothers believe they must ration resources because children are fascinated with playing with soap and water and therefore waste them. On the other hand, handwashing with soap more than three times per day is perceived as an exaggeration, and can lead to dry skin. It can also contaminate food with a soapy smell.
- Mothers do not appear to view themselves as contaminators because they report that it is only necessary to use soap when dirt is evident, that washing well with water is sufficient, that they are careful after defecating and therefore do not come into contact with feces, and that they are already in contact with soap and water when they do laundry, for example, and therefore do not need to wash their hands.

7.4.1. The primary and secondary target audiences

- Mothers make up the primary target audience, both because of their social role as the individuals in charge of caring for the children as well as for their influence in buying soap.

- The secondary target audience is found in two spaces:
 1. Within the household, fathers of the children, siblings over the age of five and maternal grandmothers, because they support the mother in caring for the children. Grandmothers are also an important source of information for mothers (11%).
 2. In the community, health care personnel are an information source recognized by mothers (both for consultation and as a spontaneous information source).

7.5. Teaching the habit

- Mothers believe they are the main people responsible for teaching hygiene practices and that childhood is the best time to instill these habits. They believe that the home is the best place to learn them. Schools can help reinforce handwashing behavior. Respondents most frequently report that punishment (physical punishment, verbal abuse) is the most efficient way to teach hygiene practices.
- Adults are viewed as already developed and therefore difficult to change, although the mothers recognize that they have access to multiple information channels. They report that experimentation is a relatively effective form of adult learning.
- Most mothers said they ensured handwashing by giving orders, associating this method with the way they themselves learned. They did not use methods that emphasized explanation or a more democratic relationship, although they mentioned these methods frequently. In other words, there is a separation between what mothers say they should do and what they actually do.
- According to mothers, the two most important sources of information about the care and hygiene of the child are the health facility and the maternal grandmother.

7.6. Communication channels

- Six of every 10 women reported participating in social situations with their peers during the month; in rural areas this number increased to eight out of 10. Approximately six of every 10 women were observed leaving the home, suggesting a high mobility. Markets, public institutions and schools were among the places most often visited. These data suggest that women establish relationships in social networks, which can be used to change behavior through information and social pressure.

7.7. Media consumption

- Radio had a slightly higher consumption than television. Radio consumption was higher in rural areas (80.4% compared with 76% for urban areas). In contrast, television consumption was higher in urban areas (87.6% versus 34.8% in rural areas).
- Overall, consumption of both media decreased on the weekends. Radio consumption fell from 98.7% during the week to 73.5% on the weekends. In rural areas, consumption during the week and on weekends was similar.
- Radio consumption was highest in the morning while television consumption reached a peak in the afternoon. In rural areas, consumption was more consistent throughout the day.
- The melodrama genre is preferred by the women, as evidenced by their consumption of romantic music and soap operas, as well as their recall of commercials that include related elements (soap opera actors/storytelling), in keeping with the Latin American oral tradition and predilection for sentimental, tragic stories.
- Women used both media for entertainment (76% radio/88.3% television) and information (44.2% radio/31.9% television). Radio was more closely associated with seeking information.
- Radio consumption was very fragmented. Respondents listened to more than 50 stations, many of which are local. National radio stations with high consumption rates included RPP and Radio Caribeña. The analysis at the local level demonstrated the importance of local radio stations, particularly in rural areas (representing 85.6% of consumption). Most of the women interviewed (more than 70%) reported a preference for music programs.
- With respect to advertising message recall, respondents tended to remember detergent (88.6%) and laundry soap (70.8%) commercials, with the best recall being for soap opera actor Salvador del Solar (22%). Additionally, study participants, particularly those in rural areas, had high recall for the cleaning and whitening properties of the products. In other words, mothers were best able to recall commercials that used elements from the melodrama genre, especially soap operas. Differences in recall existed among the study areas, with participants in urban areas having greater recall of the character and rural participants having greater recall of the whitening and cleaning properties of the products.
- Commercial recall did not necessarily correlate with buying patterns. This suggests that what is consumed in the commercial is the symbolic (the story, character, values) rather than the product offered.

- The types of music most often recalled were tropical (32.6%), Andean (25.2%) and romantic (24.2%). Tropical music was especially popular in urban areas while Andean music was preferred in rural areas. Fathers had the same musical tastes as mothers.
- The main musical personalities recalled were Gianmarco (urban) and Dina Paucar (urban and rural areas).
- Approximately six of every 10 women reported spending their leisure time at home. Nevertheless, they expressed an interest in the cinema, puppet shows and the theater as forms of entertainment. This could be associated with the limited availability of these media or with the fact that attending public performances is an uncommon practice.
- The secondary target audience, defined as fathers of the children, preferred radio (81%) to television (76.6%). Compared with mothers, fathers had a slightly greater preference for news formats, which explains their higher consumption of RPP.

8. Recommendations

There is a need to strengthen the practice of handwashing with soap during risk events involving feces and food.

It does not appear to be necessary to strengthen behaviors associated with handwashing and drying techniques since observers deemed these behaviors acceptable.

Strengthening the importance of using soap for handwashing is recommended. Observations confirmed that all households had soap. Nevertheless, the soap was not positioned for use in handwashing with the necessary frequency. Therefore, a strategy should be developed to promote the use of soap for handwashing. This would involve encouraging the population to save part of the soap (a slice) for this use. The strategy should avoid all efforts to promote the purchase of soap other than those already present in current advertising.

The campaign should target mothers of children under the age of five years as well as at least two secondary target audiences: families (in their role in supporting child care) and health care workers (in their role as a key source of information).

This campaign directed at the primary and secondary target audiences should develop two lines of intervention (short and medium term) at the national, regional and local levels.

- At the national level, radio should be used, particularly RPP, since it is the most popular station among the target audiences. A musical format and a medical consultation format should be developed. Television should be used for the urban population.
- At the regional level, local radio stations are important (the radio networks operating from Lima can cover much of the country), as are local television stations. Regional and local governments should be encouraged to participate in this initiative, in the framework of their efforts to promote local human development.
- At the local level, particularly in rural areas, efforts should focus on interpersonal communication in social networks (particularly those established through social support programs) and in schools, to support efforts to instill handwashing practices in children.

The campaign should be positioned as a joint effort of the family to care for the children, thereby taking advantage of the support the mother receives from other family members. Andean and romantic music (urban areas) could be used.

With respect to the campaign for the primary target audience, the following is recommended:

- Overall, study results demonstrate that mothers have a high level of awareness about the causes of contamination and the effects of diarrhea. Thus, motivators for handwashing are not associated with knowledge. The campaign should therefore employ motivators such as cleanliness, a feeling of well being and the social and family recognition of the mother as a good caregiver. In other words, the campaign should appeal to non-rational elements such as sensations and satisfactions.
- Use as motivators elements of socialization of the habit that women recognize as valid, such as conversation, teaching through play and through example. This would be combined with the mother's desire to establish a good relationship with her child, which reflects positively on the mother.
- As teachers of behavior, mothers feel guilt and responsibility. It is important to stress responsibility as a motivator of change. It may be counterproductive to emphasize guilt.
- By feeling fresh and happy, in other words clean, and by not being sick, a state of integral health is achieved. Moreover, if one is healthy and has the approval of others because his is well groomed, a productive, responsible and healthy person is socially constructed.
- Efforts should also be made to reverse the idea of mothers that they are not contaminators. They believe it is only necessary to use soap when dirt is evident, that washing well with water is sufficient, that they are careful after defecating and therefore do not come into contact with feces, and that they are already in contact with soap and water when they do laundry, for example, and therefore do not need to wash their hands.
- Strengthen the idea that children can motivate change. Children can call the attention of adults who do not wash their hands and can use their behavior and good health status to motivate adults. Mothers should also be encouraged to give their children more responsibility and independence in using soap for personal hygiene.
- Use radio as the main mass media channel, introducing the topic in different radio formats. Local communication campaigns should be developed, supported by both regional and national opinion leaders.

- Well known health care personnel should participate in the campaign. These health experts can give advice and recommendations on radio medical programs, for example.

For the regional and local campaigns, local support is essential, through the establishment of local committees to promote the initiative, which would mobilize leaders of the social networks. Mass media and alternative, innovative forms of information, such as movies, plays and puppet shows, should also be used.

For future studies on handwashing behaviors, videotapes should be used in training to help ensure the standardization of handwashing data collected in the field.

It is not necessary to organize household behavior trials on handwashing techniques in an environment such as Peru in which almost all households have soap. In-depth interviews and focus group discussions provided information that was similar and often more useful than that collected during behavior trials. Trials may be more helpful in countries with lower soap consumption.

Annex 1.

- Handwashing practices observed
- Childhood morbidity
- General characteristics of the population

Information on Handwashing with Soap

Table 1. General characteristics of the events observed

	Contacts	%
Contact with feces only	443	5.7
Contact with food only	5892	76.3
Contact with feces and food	263	3.4
Other contacts	1125	14.6
Total contacts	7723	100.0

Table 2. Handwashing characteristics during risk events involving feces

	Contacts	%
Washes hands with laundry soap	47	6.7
Washes hands with bath soap	33	4.7
Washes hands with detergent	17	2.4
Washes hands without soap or detergent	94	13.3
Washes hands with another product	10	1.4
Does not wash hands	505	71.5
Total contacts	706	100.0

Table 3. Distribution of risk events involving feces, by actors

	Contacts	%
Mother or caregiver	317	44.9
Child < 2 years	40	5.7
Child between 2 and 5 years	178	25.2
Child > 5 years	73	10.3
Other adult	71	10.1
Other	27	3.8
Total Contacts	706	100.0

Table 4. Handwashing characteristics during risk events involving feces, by actor

		n	%
Mother or caregiver	Washes hands with laundry soap	28	8.8
	Washes hands with bath soap	20	6.3
	Washes hands with detergent	12	3.8
	Washes hands without soap or detergent	40	12.6
	Washes hands with another product	6	1.9
	Does not wash hands	211	66.6
	Total contacts	317	100.0
Child < 2 years	Washes hands with laundry soap	2	5.0
	Washes hands without soap or detergent	2	5.0
	Does not wash hands	36	90.0
	Total contacts	40	100.0
Child between 2 and 5 years	Washes hands with laundry soap	8	4.5
	Washes hands with bath soap	8	4.5
	Washes hands with detergent	3	1.7
	Washes hands without soap or detergent	23	12.9
	Washes hands with another product	1	.6
	Does not wash hands	135	75.8
	Total contacts	178	100.0
Child > 5 years	Washes hands with laundry soap	5	6.8
	Washes hands with bath soap	2	2.7
	Washes hands with detergent	1	1.4
	Washes hands without soap or detergent	13	17.8
	Does not wash hands	52	71.2
	Total contacts	73	100.0

Table 5. Distribution of specific risk activities involving feces observed

	Contacts	%
Defecate	199	28.2
Suspected defecation	197	27.9
Change diapers or feces-contaminated clothes	255	36.1
Wash feces-contaminated clothes	15	2.1
Dispose of feces	7	1.0
Empty/clean potty chair	33	4.7
Total contacts	706	100.0

Table 6. Handwashing characteristics according to risk events involving feces

	Defecate		Suspected defecation		Change diapers or feces-contaminated clothes		Wash feces-contaminated clothes		Dispose of feces		Empty/clean potty chair	
	n	%	n	%	n	%	n	%	n	%	n	%
Washes hands with laundry soap	13	6.5	4	2.0	20	7.8	3	20.0	2	28.6	5	15.2
Washes hands with bath soap	9	4.5	8	4.1	16	6.3						
Washes hands with detergent	3	1.5	3	1.5	8	3.1					3	9.1
Washes hands without soap or detergent	27	13.6	30	15.2	29	11.4					8	24.2
Washes hands with another product	2	1.0	4	2.0	3	1.2					1	3.0
Does not wash hands	145	72.9	148	75.1	179	70.2	12	80.0	5	71.4	16	48.5
Total	199	100.0	197	100.0	255	100.0	15	100.0	7	100.0	33	100.0

Table 7. Handwashing characteristics during risk events involving food

	n	%
Washes hands with laundry soap	191	3.1
Washes hands with bath soap	134	2.2
Washes hands with detergent	68	1.1
Washes hands without soap or detergent	778	12.6
Washes hands with another product	28	.5
Does not wash hands	4956	80.5
Total	6155	100.0

Table 8. Distribution of risk events involving food, by actor

	Contacts	%
Mother or caregiver	2437	39.6
Child < 2 years	350	5.7
Child between 2 and 5 years	1151	18.7
Child > 5 years	832	13.5
Other adult	1053	17.1
Other	332	5.4
Total contacts	6155	100.0

Table 9. Handwashing characteristics during risk events involving food, by actor

		n	%
Mother or caregiver	Washes hands with laundry soap	77	3.2
	Washes hands with bath soap	34	1.4
	Washes hands with detergent	39	1.6
	Washes hands without soap or detergent	363	14.9
	Washes hands with another product	11	.5
	Does not wash hands	1913	78.5
	Total	2437	100.0
Children < 2 years	Washes hands with laundry soap	7	2.0
	Washes hands with bath soap	4	1.1
	Washes hands with detergent	1	.3
	Washes hands without soap or detergent	40	11.4
	Washes hands with another product	298	85.1
	Total	350	100.0
Child between 2 and 5 years	Washes hands with laundry soap	33	2.9
	Washes hands with bath soap	45	3.9
	Washes hands with detergent	11	1.0
	Washes hands without soap or detergent	135	11.7
	Washes hands with another product	6	.5
	Does not wash hands	921	80.0
	Total	1151	100.0
Child > 5 years	Washes hands with laundry soap	23	2.8
	Washes hands with bath soap	18	2.2
	Washes hands with detergent	3	.4
	Washes hands without soap or detergent	94	11.3
	Washes hands with another product	5	.6
	Does not wash hands	689	82.8
	Total	832	100.0

Table 10. Distribution of risk events involving food observed

		n	%
Prepare foods/cooks	Yes	1421	18.4
	No	6302	81.6
Total		7723	100.0
Feed child with the hands	Yes	113	1.5
	no	7610	98.5
Total		7723	100.0
Feed child with implement	Yes	356	4.6
	no	7367	95.4
Total		7723	100.0
Breastfeed	Yes	477	6.2
	no	7246	93.8
Total		7723	100.0
Eat with the hands	Yes	2803	36.3
	no	4920	63.7
Total		7723	100.0
Eat with implements	Yes	2740	35.5
	No	4983	64.5
Total		7723	100.0
Serve food with the hands	Yes	439	5.7
	no	7284	94.3
Total		7723	100.0
Serve food with implements	Yes	1282	16.6
	no	6441	83.4
Total		7723	100.0

Table 11. Handwashing characteristics during specific risk event involving food

	Washes hands with laundry soap		Washes hands with bath soap		Washes hands with detergent		Washes hands without soap or detergent		Washes hands with another product		Does not wash hands		Total activities	
	n	%	n	%	n	%	n	%	n	%	n	%	N	%
Prepare foods/cook	59	4.2	20	1.4	27	1.9	275	19.4	8	.6	1032	72.6	1421	100.0
Feed child with the hands	1	.9			1	.9	7	6.2			104	92.0	113	100.0
Feed child with implement	10	2.8	12	3.4	7	2.0	48	13.5	4	1.1	275	77.2	356	100.0
Breastfeed	15	3.1	4	.8	1	.2	32	6.7	3	.6	422	88.5	477	100.0
Eat with the hands	76	2.7	65	2.3	21	.7	274	9.8	8	.3	2359	84.2	2803	100.0
Eat with implements	111	4.1	91	3.3	32	1.2	359	13.1	15	.5	2132	77.8	2740	100.0
Serve food with the hands	2	.5	3	.7	6	1.4	26	5.9	2	.5	400	91.1	439	100.0
Serve food with implements	44	3.4	33	2.6	20	1.6	162	12.6	3	.2	1020	79.6	1282	100.0

Table 12 – Risk events involving food, by actor

	Mother or caregiver		Child < 2 years		Child between 2 and 5 years		Child > 5 years		Other adult		Other		Total activities	
	n	%	n	%	n	%	n	%	n	%	n	%	N	%
Prepare foods/cooks	1078	75.9					43	3.0	244	17.2	56	3.9	1421	100.0
Feed child with the hands	77	68.1			3	2.7	8	7.1	15	13.3	10	8.8	113	100.0
Feed child with implement	271	76.1	2	.6	1	.3	16	4.5	51	14.3	15	4.2	356	100.0
Breastfeed	461	96.6					1	.2	11	2.3	4	.8	477	100.0
Eat with the hands	473	16.9	293	10.5	923	32.9	526	18.8	428	15.3	160	5.7	2803	100.0
Eat with implements	637	23.2	123	4.5	623	22.7	543	19.8	657	24.0	157	5.7	2740	100.0
Serve food with the hands	274	62.4	2	.5	13	3.0	37	8.4	74	16.9	39	8.9	439	100.0
Serve food with implements	916	71.5			11	.9	76	5.9	228	17.8	51	4.0	1282	100.0

Table 13. Handwashing characteristics during risk event involving food – actor

		Washes hands with laundry soap		Washes hands with bath soap		Washes hands with detergent		Washes hands without soap or detergent		Washes hands with another product		Does not wash hands		Total activities	
		n	%	n	%	n	%	n	%	n	%	n	%	n	%
Mother or caregiver	Prepares foods/cooks	43	4.0	17	1.6	23	2.1	224	20.8	7	.6	764	70.9	1078	100.0
	Feeds child with the hands	1	1.3					6	7.8			70	90.9	77	100.0
	Feeds child with implement	8	3.0	9	3.3	4	1.5	39	14.4	4	1.5	207	76.4	271	100.0
	Breastfeeds	14	3.0	3	.7	1	.2	32	6.9	3	.7	408	88.5	461	100.0
	Eats with the hands	15	3.2	3	.6	7	1.5	41	8.7	1	.2	406	85.8	473	100.0
	Eats with implements	24	3.8	14	2.2	13	2.0	90	14.1	2	.3	494	77.6	637	100.0
	Serves food with the hands	1	.4	2	.7	5	1.8	18	6.6	2	.7	246	89.8	274	100.0
	Serves food with implements	31	3.4	16	1.7	18	2.0	128	14.0	2	.2	721	78.7	916	100.0
	Child < 2 years							1	50.0			1	50.0	2	100.0
	Eats with the hands	5	1.7	3	1.0	1	.3	36	12.3			248	84.6	293	100.0
	Eats with implements	3	2.4	2	1.6			21	17.1			97	78.9	123	100.0
	Serves food with the hands											2	100.0	2	100.0

		Washes hands with laundry soap		Washes hands with bath soap		Washes hands with detergent		Washes hands without soap or detergent		Washes hands with another product		Does not wash hands		Total activities	
Child between 2 and 5 years	Serves food with implements											3	100.0	3	100.0
	Feeds child with implement											1	100.0	1	100.0
	Eats with the hands	24	2.6	35	3.8	9	1.0	104	11.3	3	.3	748	81.0	923	100.0
	Eats with implements	27	4.3	31	5.0	6	1.0	86	13.8	4	.6	469	75.3	623	100.0
	Serves food with the hands											13	100.0	13	100.0
	Serves food with implements			2	18.2			2	18.2			7	63.6	11	100.0
Child > 5 years	Prepares foods/cooks					1	2.3	4	9.3			38	88.4	43	100.0
	Feeds child with the hands											8	100.0	8	100.0
	Feeds child with implement							2	12.5			14	87.5	16	100.0
	Breastfeeds											1	100.0	1	100.0
	Eats with the hands	12	2.3	9	1.7	2	.4	47	8.9	3	.6	453	86.1	526	100.0
	Eats with implements	22	4.1	17	3.1	3	.6	76	14.0	4	.7	421	77.5	543	100.0
	Serves food with the hands											37	100.0	37	100.0
	Serves food with implements	2	2.6	6	7.9			6	7.9			62	81.6	76	100.0

Table 14. Prevalence of morbidity in children under the age of 10 years

		Child < 2 years		Child between 2 and 5 years		Child between 6 and 10 years		Total	
		n	%	n	%	n	%	n	%
Had diarrhea yesterday (according to mother)	No	191	81.6	374	91.0	202	92.2	767	88.8
	Yes	43	18.4	37	9.0	17	7.8	97	11.2
Total		234	100.0	411	100.0	219	100.0	864	100.0
Had diarrhea in the past 15 days (according to mother)	No	143	61.4	303	74.1	180	81.8	626	72.6
	Yes	90	38.6	106	25.9	40	18.2	236	27.4
Total		233	100.0	409	100.0	220	100.0	862	100.0
Had 1 or 2 liquid or semi-liquid stools yesterday (according to mother)	No	187	79.9	365	90.3	194	90.7	746	87.6
	Yes	47	20.1	39	9.7	20	9.3	106	12.4
Total		234	100.0	404	100.0	214	100.0	852	100.0
Had 1 or 2 liquid or semi-liquid stools the day before yesterday (according to mother)	No	195	83.3	364	90.5	192	91.0	751	88.7
	Yes	39	16.7	38	9.5	19	9.0	96	11.3
Total		234	100.0	402	100.0	211	100.0	847	100.0
Had 3 or more liquid or semi-liquid stools yesterday (according to mother)	No	197	84.2	371	91.8	195	91.1	763	89.6
	Yes	37	15.8	33	8.2	19	8.9	89	10.4
Total		234	100.0	404	100.0	214	100.0	852	100.0
Had 3 or more liquid or semi-liquid stools the day before yesterday (according to mother)	No	193	82.5	376	93.5	199	94.3	768	90.7
	Yes	41	17.5	26	6.5	12	5.7	79	9.3
Total		234	100.0	402	100.0	211	100.0	847	100.0
Had cough yesterday (according to mother)	No	119	50.9	213	51.8	133	59.9	465	53.6
	Yes	115	49.1	198	48.2	89	40.1	402	46.4
Total		234	100.0	411	100.0	222	100.0	867	100.0
Had rapid breathing yesterday (according to mother)	No	223	95.3	399	97.1	212	95.5	834	96.2
	Yes	11	4.7	12	2.9	10	4.5	33	3.8
Total		234	100.0	411	100.0	222	100.0	867	100.0
Had congestion or mucous yesterday (according to mother)	No	72	30.8	146	35.8	125	56.8	343	39.8
	Yes	162	69.2	262	64.2	95	43.2	519	60.2
Total		234	100.0	408	100.0	220	100.0	862	100.0
Had cough in the past 15 days (according to mother)	No	73	31.2	123	30.0	98	44.1	294	33.9
	Yes	161	68.8	287	70.0	124	55.9	572	66.1
Total		234	100.0	410	100.0	222	100.0	866	100.0
Had rapid breathing in the past 15 days (according to mother)	No	210	89.7	376	91.7	204	91.9	790	91.2
	Yes	24	10.3	34	8.3	18	8.1	76	8.8
Total		234	100.0	410	100.0	222	100.0	866	100.0
Had congestion or mucous in the past 15 days (according to mother)	No	36	15.4	86	20.9	95	42.8	217	25.0
	Yes	198	84.6	325	79.1	127	57.2	650	75.0
Total		234	100.0	411	100.0	222	100.0	867	100.0

Table 15. General characteristics of the population, head of household, mother and caregiver

Characteristic	General population		Head of household		Mother		Caregiver	
	n	%	n	%	n	%	N	%
Sex								
Female	1463	53	66	13	500	100	500	100
Male	1315	47	434	87	-	-	-	-
Total	2778	100	500	100	500	100	500	100
Age group								
. Under 2 years	2778	14	-	-	-	-	-	-
. Under 5 years		23	-	-	-	-	-	-
. Under 15 years		44	-	-	-	-	-	-
. Between 15 and 64 years		54	477	95	498	99.6	498	99.6
. Over 64 years		02	23	5	2	0.4	2	0.4
Can read and write								
Yes	1859	74	475	95	465	93	468	94
No	668	26	25	5	35	7	32	6
Total	2527	100			500	100	500	100
Educational level								
None	543	22	21	4	34	7	31	6
. Pre-school	106	4	-	-	-	-	-	-
. Primary	765	30	161	32	140	28	141	32
. Secondary	885	35	240	48	258	52	258	52
. non-university higher education	144	6	44	9	48	10	49	10
. University	83	3	34	7	20	4	21	4
Total	2526	100	500	100	500	100	500	100
School attendance at appropriate age								
Primary 6 to 11 years	277	99						
Secondary 12 to 16 years	119	90						
Higher 17 to 24 years	41	42						
Comprehensive health insurance								
Yes	806	29	3	1	28	6	28	6
No	1971	71	497	99	472	94	472	94
Total	2777	100	500	100	500	100	500	100
Activity last week								
Paid work	925	44	450	90	188	37	196	39
Family work	123	6	9	2	41	8	39	8
Cared for the home	361	17	13	2	259	52	252	50
Studied	603	29	-	-	4	1	3	1
Others	76	4	28	6	12	2	13	2
Total	2088	100	465	100	500	100	500	100
Work activity								
Agriculture	172	16	91	19	23	10	29	12
Livestock raising	29	3	6	1	10	4	11	4
Industry	125	12	54	12	23	10	23	10
Trade	234	22	76	16	84	36	85	36
Services	426	40	188	40	91	39	89	37
Construction	36	3	27	6	-	-	-	-
Others	36	3	23	5	1	1	2	1
Total	1058	100	465	100	232	100	239	100

Table 16. Distribution of the population by age group

Age group	%	n
Children between birth and 4 years	23	633
Children between 5 and 14 years	21	580
Individuals of working age (between 15 and 64 years)	54	1510
Individuals over 64 years	2	55
Total	100	2778

Table 17. Age and years of schooling of heads of household and mothers

	Average	DE	Median	n
Heads of household, age	40.02	12.89	38	500
Mothers, age	29.98	8.50	29	500
Mothers, years of schooling	8.98	3.30	10	466

Table 18. Prevalence of diarrhea in children five years old and younger, the day before and 15 days preceding the survey, according to mothers

	Day before		In the past 15 days	
	n	%	N	%
- Yes, had diarrhea	80	12	196	31
- No, did not have diarrhea	565	88	446	69
Total	645	100	642	100

Table 19. Prevalence of diarrhea in children five years old and younger, by number of liquid stools

Three or more liquid stools	Day before		Two days before	
	n	%	N	%
- Yes	70	11	67	11
- No	568	89	569	89
Total	638	100	636	100

Table 20. Prevalence of diarrhea in children under 10 years

Presence of diarrhea, according to mothers	Day before		In the past 15 days	
	n	%	n	%
- Yes, had diarrhea	97	11	236	27
- No, did not have diarrhea	767	89	626	73
Total	864	100	862	100

Table 21. Prevalence of diarrhea in children 10 years old and younger, by number of liquid stools

Three or more liquid stools	Day before		Two days before	
	n	%	n	%
- Yes	89	11	79	9
- No	763	89	768	91
Total	852	100	847	100

Annex 2.

- Availability of resources
- Soap consumption
- Knowledge and attitudes on cleanliness and dirtiness

Summary Table — Available Contexts and Resources

Table 1. Distribution of colors associated with dirty things

	%	n
White	1.0	497
Light blue	0.6	497
Pink	0.4	497
Blue	6.6	497
Red	2.0	497
Black	85.7	497
Brown	29.8	497
Grey	5.8	497
Light brown	0	497
Discolored	5.6	497
Beige	4.2	497
Other	9.5	497

Table 2. Distribution of smells that a dirty person or thing produces

	%	n
Humidity	2.4	498
Sweat	52.6	498
Decayed	6.8	498
Rotten	20.3	498
Ugly	29.7	498
Foot odor	6.0	498
Urine, feces	6.8	498
Fish	2.6	498
Grease	2.6	498
Vinegar, acid, vinegary	2.2	498
Onion	0.8	498
Animals	0.6	498
Sewage, dirt, stench	3.2	498
Soil, grass	1.0	498
Smoke, burning smell	0.8	498
Other	0.6	498

Table 3. Distribution of animals believed to be dirty

	%	n
Pig	67.9	498
Dog	34.1	498
Cat	11.2	498
Hen	4.0	498
Duck	16.7	498
Rat, mouse, guinea pig	6.8	498
Cockroach	2.4	498
Donkey, horse, sheep, agouti	5.4	498
Vulture	2.0	498
Others	0.4	498

Table 4. Distribution of reasons the aforementioned animals are dirty

	%	n
They eat garbage	52.2	498
They are on the ground, in the dirt	25.7	498
They are in contact with feces	8.0	498
They are always outside	10.4	498
They make everything dirty	35.3	498
They smell bad	10.6	498
They have fleas and ticks	9.4	498
They carry germs	0.8	498
The eat feces, refuse, rats, garbage	5.6	498
They get filthy dirty	8.4	498
They are everywhere where there is dirt	3.4	498
Other	1.0	498

Table 5. Distribution of colors associated with clean things

	%	n
White	87.0	494
Light blue	16.2	494
Pink	10.5	494
Blue	3.4	494
Red	7.5	494
Black	0.6	494
Brown	0.8	494
Grey	0	494
Light brown	0	494
Discolored	0	494
Beige	3.2	494
Yellow	13.2	494
Green	3.8	494
Orange, melon	1.0	494
Other	0.6	494

Table 6 Distribution of smells that a clean person or thing produces

	%	n
Perfume	41.6	495
Flowers	10.9	495
Soap	47.5	495
Fresh	14.1	495
Nothing	6.9	495
Shampoo	5.2	495
Other	5.4	495

Table 7. Distribution of animals believed to be clean

	%	n
Cat	18.6	489
Dog	7.0	489
Parrot	1.8	489
Rabbit	4.7	489
Dove, bird, canary, parakeet	6.5	489
Guinea pig	2.5	489
Donkey	7.4	489
Poultry	4.3	489
Insects	1.0	489
Fish	1.0	489
Other	0.4	489
None	49.1	489

Table 8. Distribution of reasons why the aforementioned animals are clean

	%	n
They do not eat garbage	18.5	249
They cover their feces	19.7	249
They are in cages	10.4	249
They do not get dirty, they don't roll around in the mud, they get less dirty	6.0	249
They do not fly in the sky	4.4	249
They do not urinate everywhere, they bury their feces	3.2	249
The are inside the house, in a cage, on a mat, etc.	4.4	249
They are in the water	3.2	249
They clean themselves	24.9	249
They are white	1.2	249
Other	3.6	249

Table 9. Distribution of times when children get their hands dirty

	%	n
When they play in the sand, mud, on the floor	97.0	500
When they eat	24.0	500
When they go to the bathroom	3.0	500
When they play with animals	8.6	500
When they touch money	1.2	500
When they play sports	2.8	500
Others	5.8	500

Table 10. Distribution of places in the house that are cleaned most often

	%	n
Bathroom, latrine	25.1	499
Kitchen	72.3	499
Bedrooms	62.3	499
Living room	26.7	499
Floors	1.8	499
Patio, courtyard	9.0	499
Other	3.0	499

Table 11. Distribution of reasons why it is necessary to clean the aforementioned places in the house

	%	n
Because they have a lot of dirt or sand	11.8	499
To eliminate germs	17.2	499
Because children are there	30.1	499
So that they will look neat and clean	42.3	499
Because of the flies	27.5	499
Because they are used frequently	26.5	499
Because they contain food, cooking takes place there	13.4	499
To prevent illness	4.2	499
They like for them to be clean	0.4	499
Because of the animals	1.8	499
Because there are rats and flies	0.8	499
So that they will not smell bad	1.0	499
They get dirty very quickly	0.4	499
Children sleep, play there	0.8	499
Other	0.2	499

Table 12. Distribution of parts of the adult body that require cleaning most frequently

	%	n
Hair	14.2	500
Face	19.0	500
Hands	29.4	500
Underarms	21.4	500
Ears	1.2	500
Genitals	73.4	500
Feet	12.0	500
Mouth, teeth	26.4	500
Other	2.4	500

Table 13. Distribution of the reasons it is important to wash the aforementioned parts

	%	n
Because they get dirty with sweat, they sweat	19.0	500
Because they get dirty with dirt, sand	22.4	500
To prevent illness, infections, to be healthy	50.0	500
To avoid a bad smell	48.0	500
Because they look bad if they do not wash	8.4	500
To be more agreeable	8.0	500
Because there are germs	7.2	500
To be clean, presentable	3.8	500
To take care of the teeth, avoid bad breath	7.6	500
To avoid lice, dandruff and to avoid hair loss	3.8	500
Because they handle food or babies	2.8	500
Because they defecate	0.4	500
Other	1.4	500

Table 14. Distribution of the parts of a child's body that should be washed most frequently

	%	n
Hair	15.2	500
Face	27.6	500
Hands	45.6	500
Underarms	4.8	500
Ears	8.4	500
Genitals	68.4	500
Feet	10.6	500
Mouth, teeth	12.8	500
Other	1.0	500
Neck	6.0	500

Table 15. Distribution of reasons why it is necessary to wash these parts frequently

	%	n
Because they get dirty with sweat, they sweat	19.2	500
Because they get dirty with dirt, sand	44.4	500
Because there are germs, to eliminate germs	14.4	500
To avoid a bad smell	22.4	500
Because they get rashes	23.2	500
So that they will be fresh and clean	15.6	500
So that they will sleep well	1.6	500
To put clean clothes on them	1.0	500
So they will not get sick	25.4	500
Because they get dirty with feces	0.8	500
So that they will look good	2.2	500
To avoid cavities, so that they are clean	6.0	500
So that they will eat	1.8	500
To clean the lice	4.2	500
Others	1.2	500

Table 16. Distribution of measures that should be taken to ensure that their children are healthy

	%	n
Care for them	56.4	500
Educate them	7.0	500
Wash their hands	4.6	500
Dress them warmly	5.2	500
Give them love and affection	5.4	500
Feed them well	71.0	500
Clean the house	9.6	500
Health care	11.2	500
Groom them well	40.2	500
Others	3.2	500

Table 17. Hygiene Rating

	n	%
HOUSE		
Somewhat clean	157	31.5
Clean	135	27.1
Very clean	17	3.4
Somewhat dirty	116	23.2
Dirty	61	12.2
Very dirty	13	2.6
TOTAL	499	100
MOTHER		
Somewhat clean	171	34.2

	n	%
Clean	148	29.6
Very clean	11	2.2
Somewhat dirty	124	24.8
Dirty	40	8.0
Very dirty	6	1.2
TOTAL	500	100
CHILDREN UNDER FIVE		
Somewhat clean	136	27.2
Clean	151	30.2
Very clean	5	1.0
Somewhat dirty	134	26.8
Dirty	66	13.2
Very dirty	8	1.6
TOTAL	500	100
CHILDREN OVER FIVE		
Somewhat clean	104	34.0
Clean	74	24.2
Very clean	2	0.7
Somewhat dirty	86	28.1
Dirty	37	12.1
Very dirty	3	1.0
TOTAL	306	100

Table 18. Distribution of types of hygiene facilities

TYPE OF HYGIENE FACILITY	n	%
Public network in the house, private use	164	32.8
Pit latrine/cesspool, private use	115	23.0
No service (brush / field)	83	16.6
Pit latrine/cesspool, community use	45	9.0
Public network inside the home, community use	33	6.6
Others	29	5.8
Public network outside the home, community use	15	3.0
Latrine, private use	10	2.0
River/irrigation ditch or channel	4	0.8
Community latrine	2	0.4

Table 19. Households without hygiene facilities, according to handwashing with risk contact

HANDWASHING ON CONTACT :	NONE		AT LEAST ONCE		ALWAYS	
	n	%	N	%	N	%
With feces	156	15.4	12	0	45	6.7
With feces and risk events involving food	95	16.8	3	0	33	6.1

Table 20. Presence of or contact with feces observed

Presence of feces	n	%
Chicken	119	23.8
Other animal	102	20.4
Human	10	2.0
None	269	53.8
Total	500	100
Child had direct contact with feces		
Yes, chicken	17	7.4
Yes, other animal	25	10.8
Yes, human	1	0.4
No contact	188	81.4
Total	231	100

Table 21. Distribution of households, according to what they do with feces of child who defecates in diaper, clothes or potty chair

WHAT THEY DO WITH FECES	n	%
Throw in the trash	102	26.5
Throw in latrine/septic tank	56	14.5
Throw in the sewer	110	28.6
Cover it with dirt	15	3.9
Leave it	42	10.9
Other	18	4.7
Open field	25	6.5
Irrigation ditch	17	4.4
Total	385	100

Table 22. Distribution of handwashing location

LOCATION WHERE HANDS ARE WASHED	n	%
Kitchen	772	37.9
Bathroom	197	9.7
Latrine	2	0.1
Patio / courtyard	755	37.1
Laundry area	81	4.0
Other	230	11.3
Total	2037	100

Table 23. Characteristics of handwashing locations

LOCATION	Indications that handwashing practiced	Distance from defecation location		Presence of soap or detergent		TYPE OF SOAP OR DETERGENT		WATER SOURCE			
		DISTANCE	%	YES	NO	Laundry/bath soap %	Detergent/dishwashing soap%	Running water from faucet	Stored water	Water in pitcher	Others
Kitchen	71	Far or very far	70	76	24	36	40	38	60	2	0
Patio, courtyard	59	Far or very far	55	73	27	53	20	62	35	2	1
Bathroom	30	Very close	96	78	22	4	89	89	11	0	0
Living room, dining room or hallway	11	Far or very far	87	43	57	37	6	43	51	4	2

Table 24. Distribution of water supply type

SUPPLY TYPE	n	%
Public network inside the home	214	42.8
Piped water	76	15.2
Public standpipe	46	9.2
Public well	43	8.6
Water truck/water tank	35	7
Public network outside the house but within the building	26	5.2
Receive water from neighbors and/or relatives	21	4.2
Buy water from neighbors and/or relatives	19	3.8
Spring/fountain	12	2.4
River / irrigation ditch	5	1
Well in house / patio / lot	3	0.6

Table 25. Type of water supply by occurrence of handwashing after contact with feces

TYPE OF WATER SUPPLY	NONE		AT LEAST ONCE		ALWAYS	
	n	%	n	%	n	%
Public network inside the house	61	62.9	5	5.2	31	32
Public network outside the house but inside the building	8	88.9	1	11.1	0	0
Public standpipe	22	81.5	0	0	5	18.5
Well in house / patio / lot	1	100	0	0	0	0
Public well	10	90.9	1	9.1	0	0
River / Irrigation ditch	1	50	0	0	1	50
Spring / fountain	4	100	0	0	0	0
Water truck /water tank	17	77.3	3	13.6	2	9.1
Piped water	18	78.3	2	8.7	3	13
Receive water from neighbors and/or relatives	8	88.9	0	0	1	11.1
Buy water from neighbors and/or relatives	6	75	0	0	2	25

Table 26. Type of water supply by occurrence of handwashing after contact with feces and risk events involving food

TYPE OF WATER SUPPLY	NONE		AT LEAST ONCE		ALWAYS	
	n	%	n	%	n	%
Public network inside the house	42	66.7	0	0	21	33.3
Public network outside the house but inside the building	4	100	0	0	0	0
Public standpipe	13	76.5	0	0	4	23.5
Well in house / patio / lot	0	0	0	0	0	0
Public well	4	80	1	20	0	0
River / Irrigation ditch	0	0	0	0	1	100

TYPE OF WATER SUPPLY	NONE		AT LEAST ONCE		ALWAYS	
	n	%	n	%	n	%
Spring / fountain	3	100	0	0	0	0
Water truck /water tank	10	76.9	1	7.7	2	15.4
Piped water	11	78.6	1	7.1	2	14.3
Receive water from neighbors and/or relatives	4	80	0	0	1	20
Buy water from neighbors and/or relatives	4	66.7	0	0	2	33.3

Table 27. Time required to collect water and return

Time required	n	%
Does not take any time	47	16.7
1 to 5 minutes	136	48.2
6 to 10 minutes	35	12.4
11 to 30 minutes	45	16.0
More than 30 minutes	19	6.7
Total	282	100

Table 28. Presence of soaps and detergents in shops and households

	Bath soap		Laundry soap		Detergent		Dishwashing soap	
	n	%	n	%	n	%	n	%
Shops that sell cleansing products	104	87.5	104	99	104	96.2	104	72.1
Households that consume cleansing products	500	72.8	500	89.2	500	89.6	500	52.2

Table 29. Soap consumption by type and zones

	Lima		Rest of urban area		Rural	
	n	%	n	%	n	%
Bath soap	130	89.2	260	73.6	110	51.8
Laundry soap	130	86.2	260	92.6	110	84.8
Detergent	130	98.5	260	88.8	110	81.3
Dishwashing soap	130	60.0	260	51.6	110	44.6

Table 30. Use of soaps and detergents, by use

What do you use it for?	Bath soap		Laundry soap		Detergent		Dishwashing soap	
	n	%	n	%	n	%	n	%
Wash clothes	364	1.4	446	78.3	448	98.0	261	0.8
Bathe	364	96.4	446	39.2	448	2.2	261	0
Wash hands	364	54.1	446	35.7	448	8.3	261	4.2
Wash dishes	364	0.5	446	16.8	448	35.7	261	98.9
Wash face, hair or other parts of the body	364	13.2	446	0.2	448	0.9	261	0

Table 31. Reasons for buying soaps and detergents

Why do you buy it?	Bath soap		Laundry soap		Detergent		Dishwashing soap	
	n	%	n	%	n	%	n	%
Because it removes dirt, it is strong	357	3.4	445	33.0	446	58.7	257	21.4
Because it leaves the skin soft	357	19.3	445	6.5	446	3.1	257	0.8
Out of habit	357	15.7	445	19.8	446	15.0	257	14.8
For the price	357	12.3	445	30.8	446	28.9	257	29.2
For the smell	357	51.5	445	21.6	446	15.9	257	10.5
Because it kills germs	357	22.7	445	5.4	446	6.5	257	4.7

Table 32. Buying frequency of soaps and detergents, by type

How often do you buy?	Bath soap		Laundry soap		Detergent		Dishwashing soap	
	n	%	n	%	n	%	n	%
Every 1 a 3 days	4	1.1	60	13.5	51	11.4	0	0
Every 4 to 7 days	88	24.6	193	43.4	234	52.5	26	10.1
Every 8 to 15 days	139	38.9	125	28.1	103	23.1	92	35.8
Every 16 to 30 days	101	28.3	53	11.9	43	9.6	93	36.2
More than 1 month	25	7.0	14	3.1	15	3.4	46	17.9
Total	357	100	445	100	446	100	257	100

Table 33. Bath soaps most consumed by households, by brands

Brands of bath soap	Used in the past 2 weeks		Recognize and have used		Recognize and have not used	
	n	%	n	%	n	%
Camay	500	20.2	500	25.8	500	7.8
Neko	500	15.6	500	12.2	500	5.2
Palmolive	500	9.2	500	14.0	500	4.4
Lux	500	9.0	500	17.0	500	4.8
Johnson	500	8.4	500	1.8	500	0
Protex	500	7.2	500	4.6	500	1.2
Heno de Pravia	500	5.8	500	8.2	500	6.4
Rexona	500	3.6	500	8.8	500	3.2
Rosas y Limón	500	3.6	500	10.2	500	3.0
Dove	500	2.8	500	3.0	500	14.6

Table 34. Soap brand according by handwashing location

SOAP BRAND	KITCHEN		BATHROOM		LATRINE	
	n	%	n	%	n	%
Camay	3	1.1	19	16.2	0	0
Johnson	1	0.4			0	0
Lux	6	2.2	6	5.1	0	0
Neko	4	1.5	12	10.3	1	20.0
Palmolive					1	20.0
Protex	1	0.4	3	2.6	0	0
Bolivar	42	15.7	20	17.1	1	20.0
Jumbo	9	3.4	4	3.4	0	0
Marsella	5	1.9	2	1.7	0	0
Trome	16	6.0	3	2.6	0	0
Lavandina	7	2.6	1	0.9	0	0
Ace	12	4.5			0	0
Ariel	4	1.5	2	1.7	0	0
Magia Blanca	9	3.4			0	0
Opal	9	3.4	3	2.6	1	20.0
Invicto	7	2.6			0	0
Ayudin	46	17.2			0	0
Sapolio	23	8.6			0	0

SOAP BRAND	PATIO / COURTYARD		LIVING ROOM / DINING ROOM / HALLWAY		LAUNDRY AREA	
	n	%	n	%	n	%
Camay	13	6.3	1	4.3	1	2.4
Johnson	6	2.9	1	4.3		
Lux	6	2.9	2	8.7		
Neko	9	4.3	3	13.0	2	4.8
Palmolive			2	8.7	2	4.8
Protex	4	1.9				
Bolivar	46	22.1	5	21.7	12	28.6

SOAP BRAND	PATIO / COURTYARD		LIVING ROOM / DINING ROOM/ HALLWAY		LAUNDRY AREA	
	n	%	n	%	n	%
Jumbo	12	5.8			3	7.1
Marsella	8	3.8			2	4.8
Trome	8	3.8	1	4.3		
Lavandina	6	2.9				
Ace	8	3.8			3	7.1
Ariel	6	2.9	1	4.3	7	16.7
Magia Blanca	8	3.8	1	4.3	2	4.8
Opal	6	2.9			2	4.8
Invicto	6	2.9			1	2.4
Ayudin	6	2.9	1	4.3		
Sapolio	7	3.4			1	2.5

SOAP BRAND	OUTSIDE THE HOUSE		OTHER LOCATIONS	
	n	%	n	%
Camay				
Johnson				
Lux	1	14.3		
Neko				
Palmolive				
Protex				
Bolivar	1	14.3	1	14.3
Jumbo				
Marsella	1	14.3		
Trome				
Lavandina				
Ace				
Ariel				
Magia Blanca			2	28.6
Opal	1	14.3		
Invicto	1	14.3		
Ayudin			2	28.6
Sapolio				

Table 35. Laundry soap most consumed by households, by brands

Laundry soap brands	Used in the past 2 weeks		Recognize and have used		Recognized and have not used	
	n	%	n	%	n	%
Bolívar	500	44.6	500	21.4	500	5.2
Marsella	500	12.0	500	33.0	500	8.6
Jumbo	500	11.8	500	13.8	500	6.6
Trome	500	11.8	500	7.0	500	3.8
Lavandina	500	4.2	500	3.2	500	0
Chuya Chuya	500	3.4	500	3.8	500	1.0
Popeye	500	2.8	500	1.8	500	0
San Isidro	500	2.6	500	2.6	500	1.8
San Roque	500	2.0	500	1.0	500	0.2
Ideal	500	2.0	500	4.4	500	0.6

Table 36. Detergents most consumed by households, by brands

Brands of detergent	Used in past 2 weeks		Recognize and have used		Recognize and have not used	
	n	%	n	%	n	%
Magia Blanca	500	21.6	500	23.8	500	10.4
Ace	500	21.2	500	42.0	500	11.8
Ariel	500	20.8	500	33.8	500	21.0
Opal	500	14.2	500	21.6	500	13.2
Invicto	500	10.4	500	6.6	500	5.6
Sapolio Matic	500	9.0	500	8.0	500	8.2
Ña Pancha	500	7.6	500	22.6	500	12.0
Patito	500	1.4	500	1.4	500	0.8
Dterg	500	1.2	500	0.8	500	1.4
Amigo	500	0.6	500	1.0	500	1.0

Table 37. Dishwashing soap consumed by households, by brands

Brands of dishwashing soap	Used in past 2 weeks		Recognize and have used		Recognize and have not used	
	n	%	n	%	n	%
Ayudín	500	24.2	500	8.4	500	3.8
Sapolio	500	16.8	500	5.6	500	5.0
Lava	500	4.0	500	1.6	500	1.2
Axion	500	3.0	500	1.0	500	0.8
Lavadocil	500	1.8	500	0	500	0.2
Pulitón	500	1.0	500	0.2	500	0
Salvo	500	1.0	500	0.8	500	0.4
Lesly	500	0.4	500	0	500	0.2
Margot	500	0.4	500	0	500	0

Table 38. Leading bath soaps sold in stores

	n	%
Camay	91	53.8
Lux	91	46.2
Palmolive	91	45.1
Neko	91	40.7
Protex	91	27.5

Table 39. Leading laundry soaps sold in stores

	n	%
Bolívar	103	64.1
Trome	103	32
Marsella	103	27.2
Jumbo	103	21.4
Chuya Chuya	103	13.6

Table 40. Leading detergents sold in stores

	n	%
Magia Blanca	100	56.0
Ace	100	54.0
Ariel	100	33.0
Ña Pancha	100	31.0
Opal	100	23.0
Invicto	100	16.0
Sapolio Matic	100	11.0

Table 41 . Leading dishwashing soaps sold in stores

	n	%
Ayudín	75	68
Sapolio	75	68
Axión	75	17
Lava	75	11
Listo	75	5

Annex 3.

- Socialization of children
- Media consumption
- Communication channels

Tables of Communication Channels and Media

Table 1. Who is responsible for the care of children under the age of 5 years?

ACTOR	%
Mother	92.4
Other children over the age of 5 years	20.4
Father	18.0
Mother's brothers or sisters	8.4
Child's grandmother (mother and father)	16.2
Neighbors or friends	1.0
Older son or daughter	2.4
Mother's sister-in-law	2.6
Other relative	3.6
Others	1.4
	n = 500

Table 2. Who prompted the handwashing event in children under the age of 5 years?

PERSON	n	%
Mother	355	64
Children over the age of 5	16	3
Father	14	2
Other adult	34	6
No one	136	25
TOTAL	555	100

Table 3. Age in which child does not need help to wash his hands

Average age
3.59
n = 500

Chart 1. Mothers' Socialization

	PLACES	PERSONS/VOICES OF AUTHORITY	DISCOURSES	METHODS	MARGIN OF EFFECTIVENESS
ADULT	ADULT	HEALTH CARE WORKERS	Health discourse – Should do Sanctioning	Meetings Informative talks	Little Not effective, comes from childhood
	NEIGHBORHOOD	OTHER MOTHERS	Sanctioning discourse Should do	Social sanction	
	SCHOOL	HEALTH CARE WORKERS	Discourse Entertainment Should do	Watching Attending	
	WORK IN HOME	BOSS	Know how to do	Doing	Effective
CHILD	HOUSE Instills the custom, habit. If not instilled here, it is difficult to develop	MOTHERS Fathers or brothers when they assume women's roles	Sanctioning discourse	Example	More effective Determine the behavior
			Have to do	Abuse (punishment effective)	
			Poverty not an excuse Know how to do	Do it without explanation	
	SCHOOL	TEACHER	Discourse Should do	Do it without explanation	Helps Does not determine

Table 4. Actions of the transmitter in socialization event

TRANSMITTER	n	%
Order	188	62
Explain	82	27
Both	34	11
TOTAL	304	100

Table 5. Reward for Socialization Event

REWARD	n	%
No reward	288	95
Reward (Physical affection, compliments, approval)	12	3.9
Both	4	1.3
TOTAL	304	100

Table 6. Decision and purchase of soap

PRODUCT TYPE	ACTION	MOTHER		FATHER		BOTH		CHILDREN		OTHERS		GIFT	
		%	n	%	n	%	n	%	n	%	n	%	n
Bath soap	Decides	67	243	12.4	45	3	11	1.6	6	13.2	48	3	11
	Buys	68	242	14.9	53	2.5	9	4.5	16	10.2	36	0	0
Laundry soap	Decides	78.9	352	5.8	26	2	9	2	0.4	11.9	53	0.9	4
	Buys	74.1	329	9.2	41	2.7	12	4.1	18	10	44	0	0
Detergent	Decides	76.1	341	6.7	30	2	9	0.4	2	13.6	61	1.1	5
	Buys	71.7	320	9.4	42	2.5	11	5.2	23	11.3	50	0	0
Dishwashing soap	Decides	73.2	191	6.5	17	1.5	4	0.8	2	16.1	42	1.9	5
	Buys	66.9	172	11.7	30	3.1	8	5.7	13	13.2	34	0	0

Table 7. Access to radio and television

OWNERSHIP	%
Have radio	72
Have B&W or Color TV	72
Do not have radio or TV	8.6

n = 500

Table 8. Preparation of informants that have listened to the radio and watched television in the past 15 days

	Radio		Television	
	n	%	n	%
YES	385	77	379	75.8
NO	115	23	121	24.2
TOTAL	500	100	500	100

Table 9. Average number days of exposure to the medium in the past 15 days

	RADIO	TELEVISION
Average number of days	5.83	6.39
	n = 385	n = 379

Table 10. Exposure to radio/television by geographic area – from Monday to Friday

	Radio and Television Consumption –Geographic area			
	Radio		TV	
	n	%	n	%
TOTAL	500	77	500	75.8
Urban	388	76	388	87.6
Rural	112	80.4	112	34.8

Table 11. Exposure to radio/television, Monday to Friday/Saturday and Sunday

RADIO		TV	
During the week	Weekends	During the week	Weekends
%	%	%	%
98.7	73.5	99.2	74.7
n = 385		n = 379	

Table 12. Household radio/television consumption observed

	RADIO		TELEVISION	
	n	%	n	%
Yes, consumed	216	43.2	199	39.5
No, not consumed	202	40.4	168	33.6
Does not have radio or TV	82	16.4	133	26.6
TOTAL	500	100	500	100

Table 13. Stations most watched during weekdays

STATION	MONDAY TO FRIDAY
	%
Radio Programas	21.3
Radio A	7.6
Radio Mar	6.1
Panamericana	6.1
Radio Ritmo	7.1
Inca Sat	5.5
Caribeña	16.3
Radio Melodía	7.4
Stations that broadcast from Lima	38.4
Local stations	52.1

n=283

Table 14. Stations with the greatest weekday/weekend coverage, urban and rural areas

STATION	MONDAY TO FRIDAY		WEEKEND	
	URBAN AREA n=290	RURAL AREA n=90	URBAN AREA n=208	RURAL AREA n= 75
	%	%	%	%
Radio Programas	18.3	31.1	6.3	12
Radio A	9.7	1.1	3.8	0
Radio Mar	7.6	1.1	6.3	1.3
Panamericana	7.6	1.1	4.3	0
Radio Ritmo	9.3	0	3.8	0
Inca Sat	6.6	2.2	5.8	4
Caribeña	20	4.4	19.2	4.0
Radio Melodía	9.7	0	5.3	0
Others	15.9	27.8	10.1	13.3

Table 15. Stations grouped by signal coverage/rural and urban areas

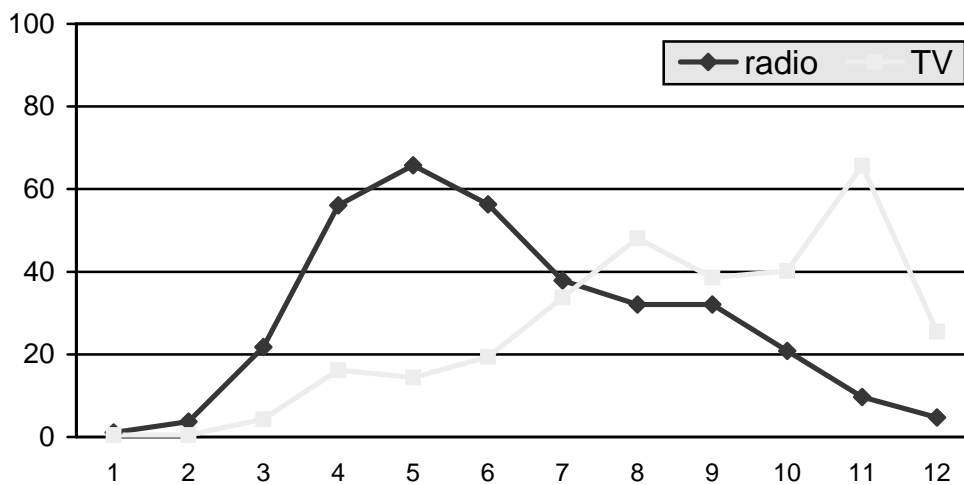
	RURAL	URBAN
	M-F	M-F
STATIONS	%	
Broadcast from Lima	5.6	48.6
Broadcast from the provinces	85.6	41.7

n = 90 n = 290

Table 16. Peak consumption hours by rural and urban areas (m-f)

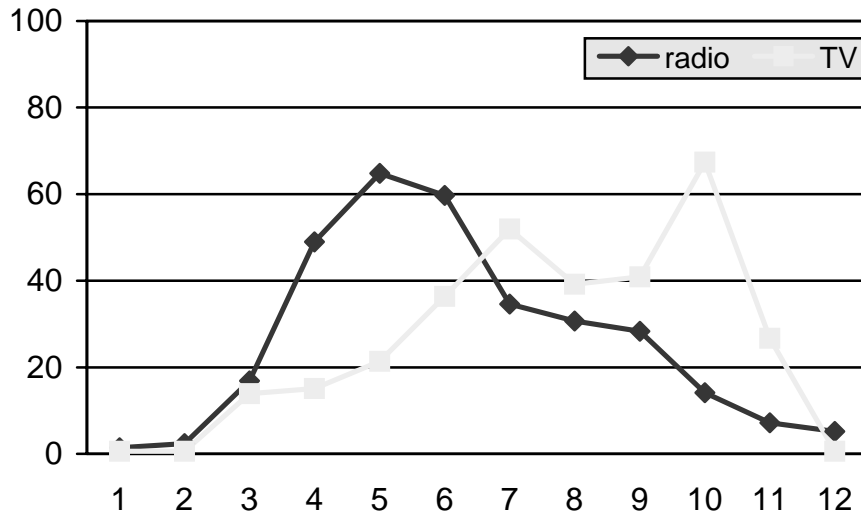
	Hours	URBAN		RURAL	
		Radio	TV	Radio	TV
EARLY MORNING	12 to 2	1.4	0.6	0	0
	2 to 4	2.4	0.6	7.8	0
	4 to 6	16.9	13.9	37.8	7.7
MORNING	6 to 8	49	15.1	78.9	35.9
	8 to 10	64.8	21.4	68.9	7.7
	10 to 12	59.7	36.4	45.6	2.6
AFTERNOON	12 to 2	37.6	51.9	38.9	12.8
	2 to 4	30.7	39.2	36.7	15.4
	4 to 6	28.3	40.9	44.4	33.3
EVENING	6 to 8	14.1	67.4	42.2	33.3
	8 to 10	7.2	26.7	17.8	51.3
	10 to 12	5.2	0.6	3.3	15.4
		n = 290	n = 337	n = 90	n = 39

Figure 1. Hours of exposure to radio/television, total (Monday to Friday)



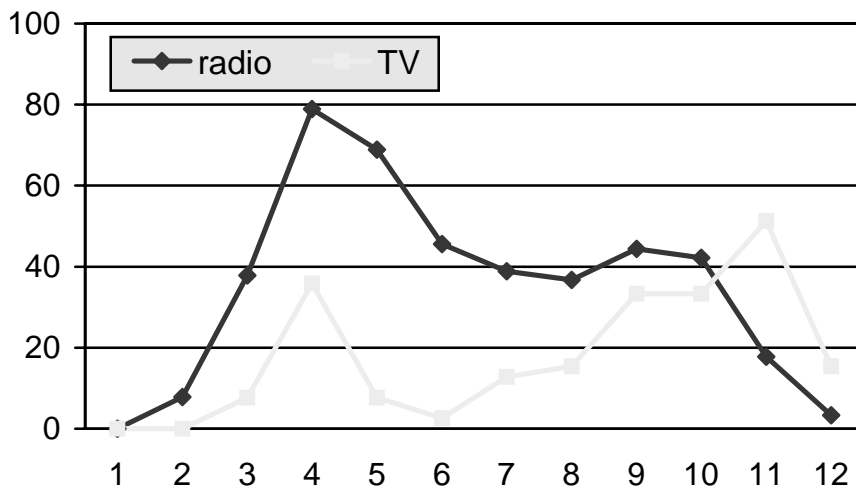
n = 500

Figure 2. Hours of exposure in urban areas (Monday to Friday)



n = 290

Figure 3. Hours of exposure in rural areas (Monday to Friday)



n = 90

Table 17. Type of radio programming preferred - women

Program type	M-F	S-S
Music	72.9	76
News	39.7	15.9
Consultation	9.7	1.1
Religious	2.9	4.6
	n = 308	n = 283

Table 18. Type of television programs consumed during observation periods

PROGRAM TYPE	M-F	S-S
	%	%
News	34	19.8
Soap opera	70.5	2.1
Humor	1.5	8.5
Series	4.8	5.3
Movies	12.8	45.9
Musical	2.9	3.2
Religious	0.3	0.4
Consultation	0.8	0.4
Contest	2.4	7.4
Talk Show	1.3	0
Children's	2.1	4.2
Cultural documentary	1.1	1.8
Variety shows	4.5	0
Other	0.8	0.4
	n =376	n = 283

Table 19. Use of radio and television

Use	Radio TOTAL n =380	Television TOTAL n =376	RADIO		Television	
			Urban n = 290	Rural n = 90	Urban n 388	Rural n =112
Information	44.2	31.9	37.6	65.6	30.3	46.2
Entertainment	76.6	88.3	79.3	67.8	90.5	69.2
Education	4.7	0.5	4.8	4.4	0.6	0
Others	1.6	0.3	1.7	1.1	0	2.6

Table 20. Musical preferences – women

TYPE OF MUSIC	n	%
Tropical	163	32.6
Romantic	121	24.2
Andean	126	25.2
<i>Criollo</i>	16	3.2
Brazilian	5	1
Rock	20	4
Other	29	5.8
Do not listen to music	20	4
TOTAL	500	100

Table 21. Musical preferences, rural/urban – women

TYPE OF MUSIC	RURAL	URBAN
	%	%
Tropical	26.8	34.3
Romantic	6.3	29.4
Andean	49.1	18.3
Rock	0	5.2
<i>Criollo</i>	0	3.9
Brazilian	0	1.3
Other	12.5	3.9
Do not listen to music	4.5	3.9
	n =112	n =388

Figure 4. Musical Preferences

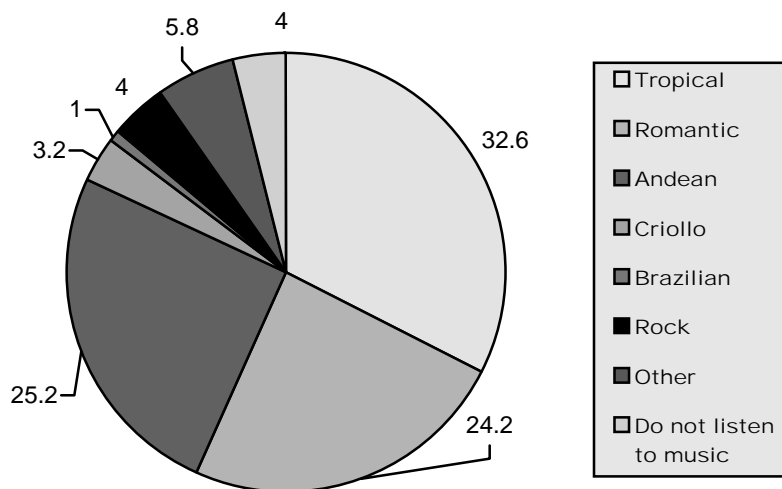


Figure 5. Musical Preferences –Rural Area

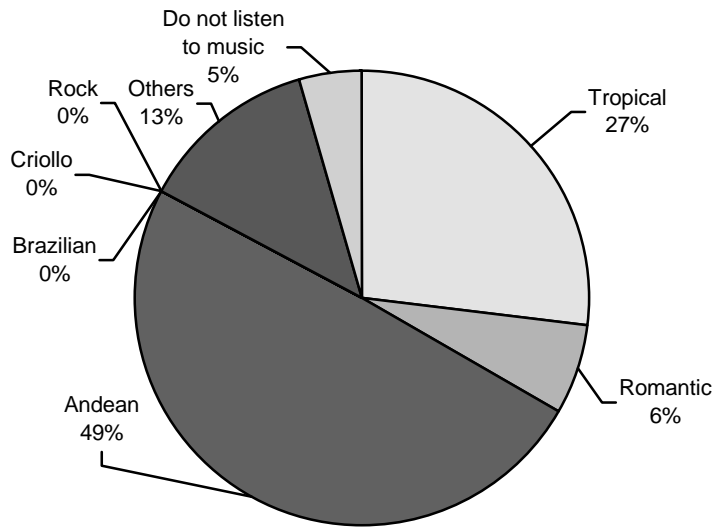
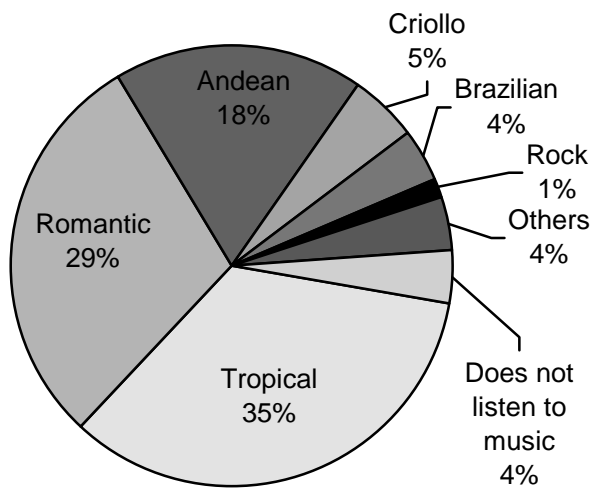


Figure 6. Musical Preferences –Urban Area



n=338

Table 22 . Preferred Singers

SINGERS	N= 417	%
Gianmarco	93	22.3
Dina Paucar	67	16.1
Eva Ayllon	32	7.7
Sonia Morales	28	6.7
Cristian Meier	13	3.1
Pedro Suárez	17	4.1
Salsa	8	1.9
Andean music	49	11.7
Others, romantic	9	2.2
Others	41	9.8
None	41	9.8

Table 23. Television channels most consumed – women

Channel	During the week	Weekends
	n=376	n=283
America TV	63%	30
Frecuencia Latina	25%	22.6
ATV	47%	27.2
Panamericana	20%	12
Others	2.6%	1.8
TNP	5%	4.6
Cable	1.6%	1.4

Table 24. Type of programming preferred during the week and on weekends

PROGRAMMING TYPE	M-F	S- S
News	34	19.8
Soap opera	70.5	2.1
Humor	1.6	8.5
Series	4.8	5.3
Musical	2.9	3.2
Sports	0	0.7
Religious	0.3	0.4
Consultation	0.8	0.4
Contest	2.4	7.4
Talk show	1.3	0
Movies	12.8	45.9
Cartoons	2.1	4.2
Documentaries	1.1	1.8
Variety shows	4.5	0
Others	0.8	0.4

Table 25. Types of programming observed - women

News	23.1
Soap opera	49.5
Humor	13.1
Series	8.5
Musical	7.5
Sports	1.5
Talk show	8.5
Cartoons	40.2
Magazine	7.5
Other	5

n= 199

Table 25 a. Types of programming chosen during observation session- women

WHO CHOSE THE PROGRAM	MUSICAL		NEWS		SPORTS		SOAP OPERA		SERIES		HUMOR		OTHERS PROGRAMS	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Unknown	56	30.3	18	42.9									1	14.3
Mother	61	33	13	31			1	100			1	100	5	71.4
Child	8	4.3	0	0										
Older sibling of child	16	8.6	1	2.4										
Head of household/Father	24	13	8	19	3	75								
Others family members/people	20	10.8	2	4.8	1	25			1	100			1	14.3
TOTAL	185	100	42	100	4	100	1	100	1	100	1	100	7	100

Table 26. Distribution of readership, week preceding survey - women

	%
Do not know how to read or write	5.8
Newspapers	41.4
Others	8.3
Did not read	52

n = 471

Table 27. Newspaper Preferences – Women

NEWSPAPERS	%
El Popular	40.5
El Norteño	12.3
El Correo	11.3
Aja	7.7
Ojo	5.1
La Republica	4.1
El Pueblo	2.6
El Comercio	3.1
El Trome	3.6
Expreso	2.1
Libero/Todo sport/El Bocon	4.1
Other	3.6

n = 195

Table 28. Preferred Community Media – Women

COMMUNITY MEDIA	%
Theater	45.4
Puppet shows	56.6
Cinema	61.2
Advertising	66.8

n = 500

Table 29. Use Of Leisure Time – Women

Use of leisure time	n	%
Go to park	52	10.4
Go to fair, market, plaza	27	5.4
Stay home	189	37.8
Go to others' homes	127	25.4
Church/temple	27	5.4
Other	35	7
Do not have leisure time	43	8.6

n = 500

Table 30. Places to meet with peers – women

LOCATION	%
Glass of milk program	17.6
Mothers' clubs	3.6
Schools	11.8
Community kitchens	7
Markets	3.2
Church	8.6
Do not meet with peers	36.8
Home of informant, relatives or friends	12.4
Other community locations	7.8
Other	2.2

Table 31. Places to meet with peers, geographic region – women

LOCATIONS	Urban n 388	Rural n 112
Glass of milk program	14.4	28.6
Mothers' clubs	0.3	15.2
Schools	12.1	10.7
Community kitchens	6.2	9.8
Markets	4.1	0
Church	8.2	9.8
Do not meet with peers	42.8	16.1
Home of informant, relatives or friends	13.9	7.1
Other community locations	5.7	15.2
Other	1.5	4.5

n = 500

Table 32. Location visited by mother during observation period

LOCATIONS	%
Glass of milk	17.6
Mothers' clubs	3.6
Schools	11.8
Community kitchens	7
Markets	3.2
Churches	8.6
Did not meet with anyone	36.8
Home of informant, relatives or friends	12.4
Other community locations	7.8
Others	2.2

Table 33. Trusted reference / information on child care and hygiene

	Child care		Child hygiene	
	Trust			
	%	N	%	n
Health care worker	59	295	46.4	232
Mother	11	54	11.4	57
Spouse	2.6	13	1.6	8
Do not consult	10.2	51	26	130
Mother-in-law	3.4	17	3	15
Friend	5.8	29	4.6	23
Others	8	40	7	35
Total	100	500	100	500

Table 34. Distribution of informants by person they talk to about cleaning

	PERSON OR INSTITUTION								
	Mother	Spouse	Mother-in-law	Friend / Neighbor	Health care worker	Teacher	Municipal employee	Glass of milk	Other organizations or people
	%	%	%	%	%	%	%	%	%
Spontaneous yes	18.7	5.1	3.9	9.7	50	4.3	0.4	0.8	12.5
Prompted yes	44	57.6	21	39.7	31.8	31.1	7.8	13.6	4.3
No	37.4	37.4	75.1	50.6	18.2	64.6	91.8	85.6	83.3
Total	100	100	100	100	100	100	100	100	100

n = 257

Table 35. Trust in public figures

PUBLIC FIGURE	%	n
Do not trust	74.2	368
Political journalist	7.1	35
Entertainment journalist	4.2	21
Singer	2.4	12
Politician	5.6	28
Other	4.2	21
Religious leader	2.2	11
	100	496

Table 36. Advertising consumption and recall

PRODUCT TYPE	% OF ADVERTISING RECALL		BRANDS WITH HIGHEST RECALL		
	n	%	Product	%	n
Laundry soap	456	70.8	Bolivar	76.2	323
			Marsella	12.1	
			Jumbo	7.4	
			Popeye	1.2	
Detergent	456	88.6	Ariel	49.8	404
			Ace	18.1	
			Magia Blanca	11.6	
			Sapolio	9.2	
Bath soap	456	53.1	Camay	36.9	241
			Dove	15.8	
			Lux	14.9	
			Neko	9.5	
Dishwashing soap	456	55.3	Sapolio	56	252
			Ayudin	33.7	
			Lava	4.8	
			Axion	4.8	
Others	456	16.2	Pinesol	33.3	69
			Clorox	26.1	
			Kolynos	5.8	
			Sapolio wax	5.8	

Table 37. Advertising consumption and recall- Geographic Region

ELEMENTS WITH THE HIGHEST RECALL	Urban		Rural	
	n	%	n	%
Salvador del solar	71	23.8	7	12.5
Cleaning	30	10.1	20	35.7
Whitening	34	11.4	11	19.6
Peruvian product	28	9.4	0	0
Children and colors	23	7.7	2	3.6
Dancing birds	14	4.7	1	1.8
Price promotion	13	4.4	4	7.1
Sapolio frog	13	4.4	1	1.8
Gentleness	6	2	0	0
Story of plumber	6	2	0	0
Fragrance	7	2.3	0	0
Kills germs	2	0.7	1	1.8
Others	30	10.1	7	12.5
TOTAL	298	100	56	100

Table 38. Elements with highest recall

Elements with Highest Recall	n	%
Salvador del solar	78	22
Cleaning	50	14.1
Whitening	45	12.7
Peruvian product	28	7.9
Children and colors	25	7.1
Dancing birds	15	4.2
Price promotion	17	4.8
Sapolio frog	14	4
Gentleness	6	1.7
Story of plumber	6	1.7
Fragrance	7	2
Kills germs	3	0.8
Others	60	176.5
TOTAL	354	100

Table 39. Secondary audience, Radio And Television consumption

	RADIO		TELEVISION	
	n	%	n	%
YES	304	81.1	300	74.6
NO	71	18.9	102	25.4
TOTAL	375	100	402	100

Table 40. Stations with highest ratings during the week/weekends – secondary audience

STATION	M-F	S-S
	%	%
Radio Programas	27.8	13.5
La Caribeña	13.6	11.8
Radios Locales	42.4	36.2
Melodía	6.8	3.1
Radio A	3.7	1.3
Radio Mar	2.7	2.6
Panamericana	3.4	3.5
Ritmo	3.7	3.5
Inca	2.7	3.9
	n = 295	n = 229

Table 41. Type of radio programming preferred – secondary audience

Program type	M-F	S-S
Music	58.6	60.7
News	43.1	24
Humor	0.7	0.4
Religious	2.7	3.5
Sports	4.1	7
Consultation	5.4	0.4

Table 42. Television stations most consumed – secondary audience

STATION	During the week	Weekends
	%	%
Panamericana TV	18.9	14.4
America TV	49.3	36.2
Frecuencia Latina	28.3	16.9
ATV	34.6	25.5
TNP	3.5	3.7
Ok TV	1.4	0
Other	3.1	1.2
Cable channel	1	0.8
Do not recall	2.1	1.2
	n =286	n = 243

Table 43. Type of television programming preferred – secondary audience

PROGRAM TYPE	%	
	M-F	S-S
News	57.3	27.6
Soap opera	19.6	1.6
Humor	3.5	7
Series	5.2	2.9
Musical	2.1	2.9
Sports	3.8	9.1
Contest	0.7	3.7
Other	28.7	45.3

Table 44. Print Media Consumption – Secondary Audience

	%
Do not know how to read/write	2.6
Newspapers	69.5
Magazines	1.6
Brochures	1.9
Others	3
Do not read	27.5

n = 371

Table 45. Preferred Newspapers – Secondary Audience

Newspaper	%
Aja	5.1
Correo	12.6
El Trome	3.6
La Republica	6.3
Ojo	7.1

n = 253

Table 46. Musical Preferences – Secondary Audience

TYPE OF MUSIC	n	%
Tropical	168	40.5
Romantic	52	12.5
Andean	110	26.5
<i>Criollo</i>	19	4.6
Brazilian	2	0.5
Rock	24	5.8
Other	21	5.1
Do not listen	7	1.7
Do not know partners' preferences	12	2.9
TOTAL	415	100

Table 47. Have you listened to the radio/watched television? – schoolchildren

	Radio		Television	
	n	%	n	%
YES	130	86	84	127
NO	21	14	16	24
TOTAL	151	100	151	100

Table 48. Preferred Stations – schoolchildren

STATION	%
La Caribeña	12.5
OKEY	4.5
MODA	4.5
Panamericana	4.5
Inca Sat	4.5
Tabaloso	4.5
Star Plus	3.4
Milenio	3.4
Do not specify	6.8
Other local	37.5
Other national	13.6

n= 88

Table 49. Exposure to medium, radio/television, Monday to Friday/Saturday and Sunday – schoolchildren

	RADIO	TV
	%	%
Monday to Friday	93.1	97.6
Saturday and Sunday	67.7	84.3
	n = 130	n = 127

Table 50. Hours of consumption of radio and television

	Hours	Radio		Television	
		M-F	S-S	M-F	S-S
EARLY MORNING	12 to 2	0	0	0	0
	2 to 4	0.8	0	0	0
	4 to 6	7.4	3.4	2.4	1.9
MORNING	6 to 8	28.9	28.4	8.1	15.9
	8 to 10	15.7	31.8	10.5	45.8
	10 to 12	11.6	34.1	7.3	45.8
AFTERNOON	12 to 2	29.8	29.5	13.7	24.3
	2 to 4	44.6	37.5	32.3	19.6
	4 to 6	41.3	25	50.8	23.4
EVENING	6 to 8	28.9	10.2	50	23.4
	8 to 10	11.6	9.1	35.5	16.8
	10 to 12	0.8	0	3.2	3.7
		N = 121	n =88	n =124	n=107

Table 51. Type of radio programming preferred – schoolchildren

PROGRAM TYPE	M-F	S-S
News	22.3	8
Humor	2.5	1.1
Series	0.8	0
Musical	76	81.8
Sports	0.8	1.1
Religious	1.7	2.3
Consultation	1.7	0
Contest	2.5	5.7
Other	0.8	0
	N =121	n =88

Table 52. Musical Preferences – schoolchildren

TYPE OF MUSIC	n	%
Tropical	53	35.6
Romantic	12	8.1
Andean	12	8.1
<i>Criollo</i>	2	1.3
Brazilian	44	29.5
Rock	14	9.4
Other	8	5.4
Do not listen to music	4	2.7
TOTAL	149	100

Table 53. Television channels with highest consumption – schoolchildren

Channel	During the week	Weekends
	N	n
America TV	54	34.6
Frecuencia Latina	42.7	24.3
ATV	29	22.4
Panamericana	16.1	10.3
Other	4	5.6
TNP	5.6	2.8
Cable	2.4	0
	n =124	n=107

Table 54. Type of television programming preferred – schoolchildren

PROGRAM TYPE	M-F	S-S
News	12.1	5.6
Humor	5.6	5.6
Series	14.5	5.6
Musical	3.2	4.7
Sports	0.8	0
Religious	0	0
Consultation	0	0.9
Contest	0.8	3.7
Cartoon	46.8	49.5
Children's	1.6	8.4
Other	10.5	14
Soap opera	35.5	1.9