

**REVISTA
PANAMERICANA
DE SALUD PÚBLICA**

**PAN AMERICAN
JOURNAL OF
PUBLIC HEALTH**

Material suplementario / Supplementary material / Material supplementar

Supplementary material to:

Lund AJ, Keys HM, Leventhal S, Foster JW, Freeman MC. Prevalence of cholera risk factors between migrant Haitians and Dominicans in the Dominican Republic. *Rev Panam Salud Publica.* 2015;37(3):125–32.

This material formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplementary material

Instrument Translation

Spanish and Haitian Kreyòl versions of the survey instrument were used. Survey items were initially developed in English. A preliminary Spanish translation was reviewed and revised by Dominican research assistants. Using this revised version, Haitian research assistants translated the survey from Spanish to Kreyòl. The Kreyòl version was then back-translated by a bilingual (Spanish- Kreyòl) Haitian individual who was not involved in original translation. Research assistants piloted the survey instrument in two non-survey communities (one rural and one urban), which served as field training and an opportunity to identify needed revisions to the instrument.

Population Estimates

Population estimates for migrant Haitian and Dominican populations in each community were derived using the quadrat method during the post-survey period (1). Google Earth™ (San Francisco, CA) images of each community were obtained and overlaid with a grid. Upon visual inspection of each map, grid cells appearing to be populated were numbered and a single grid cell selected at random in which a household-level census was carried out. An enumerator visited each household in the randomly selected grid cell and asked for the number and nationality of each household's residents. The number of residents found in the selected grid cell was then multiplied by the number of populated grid cells for that community. This method yielded the relative number of Haitian and Dominican households in each community, and these data were used to calculate household and post-stratification weights.

Composite Measures

Numerical knowledge scores were calculated from responses to two survey items: knowledge of cholera symptoms and transmission pathways. Respondents were asked to enumerate cholera symptoms from memory, receiving no prompts from research assistants. A maximum of four correct symptoms and four correct transmission pathways were included in the questionnaire for a maximum cumulative knowledge score of eight. Each correct answer was awarded one point. Incorrect answers and responses of “Don’t know” were awarded zero points. Correct responses were based on documents created and distributed by the Dominican Ministry of Health (2).

Primary and secondary drinking water sources were considered in assigning an improved/unimproved classification to each household. Survey respondents were asked to indicate a single primary source of drinking water as well as any additional sources of drinking water that were used in the household. Bottled water is a prevalent source of drinking water in the Dominican Republic (3), and was considered improved when a household had access to piped water either inside or outside the home (4). Household that reported bottled water as their principal drinking water source were thus classified according to this criteria: improved if piped water was enumerated as a secondary source and unimproved if piped water was not enumerated as a secondary source.

Principal component analysis reduced 23 survey items addressing household assets possession into a single measure of socioeconomic status (5). This analysis revealed that six variables (household electricity, television, refrigerator, cooling fan, washing machine and cooking stove) best explained variation in the data. These variables were consistent with field observations and were assigned factor scores. Natural breaks in the distribution of factor scores

indicated that this variable was suitable for construction of socioeconomic quintiles for the entire sample.

Multiple Imputation

Multiple imputations ($n = 5$) were performed on four variables so that regression analyses could account for the complex sampling design and produce valid estimates. Weighted sequential hot deck (WSHD) imputation was selected as an appropriate method for its ability to handle general patterns of missingness, impute categorical data and account for sampling weights (6). Additionally, WSHD is a non-model based approach, which made it possible to impute missing values for dependent variables in regression analyses. No variable had more than 10% missing values. All regression analyses were performed by imputation with the multiply imputed data sets. Parameter estimates were then analyzed using PROC MIANALYZE in order to account for variability introduced via imputation and produce valid effect estimates and confidence intervals (7).

Survey InstrumentSection B: Demographic Information

B10 How old are you?

__ __ years

B20 What is the gender of the participant?

male female

B30 What language is spoken in the home?

Spanish Kreyol Spanish and Kreyol

B40 What is the highest level of education the participant has completed?

None Primary Intermediate

Secondary University

B50 What is the highest level of education in the household?

None Primary Intermediate

Secondary University

B60 How many people currently live and sleep in the house?

__ __ people

B70 How many children under 5 years old currently live and sleep in the house?

__ __ children under 5 years old

Section D. Cholera Knowledge

D10 Can you tell me what the symptoms of cholera are? {Do not read options. Listen to responses and mark all that apply)

Diarrhea Nausea/vomiting Fever Dehydration

Loss of appetite Fatigue Abdominal pain Headache

Don't know

- D20 Is the diarrhea caused by cholera different than other types of diarrhea?
 Yes No Don't know
- D30 Can you tell me the primary way a person can become infected with cholera? (Do not read options. Listen to responses and mark the single response that applies)
 Drinking untreated or contaminated water Eating raw or uncooked foods
 Not washing hands before eating From the air
 From flies or insects Swimming or bathing in contaminated water
 Shaking hands Contact with someone who has been in Haiti
 Contact with a Haitian Witchcraft or evil eye
 Eating contaminated seafood Other (specify: _____)
 Don't know
- D40 What are other ways a person can become sick with cholera? (Do not read options. Listen to responses and mark all that apply)
 Drinking untreated or contaminated water Eating raw or uncooked foods
 Not washing hands before eating From the air
 From flies or insects Swimming or bathing in contaminated water
 Shaking hands Contact with someone who has been in Haiti
 Contact with a Haitian Witchcraft or evil eye
 Eating contaminated seafood Other (specify: _____)
 Don't know
- D50 Has there been a case of cholera in the house in the last 18 months? A case of cholera is defined as sudden and frequent liquid, rice water diarrhea, sometimes accompanied by nausea, vomiting and/or abdominal pain
 Yes No
- D60 Where do you receive news and information about cholera? Mark all that apply.
 Television Radio Brochures
 Newspaper Neighbors Mobile phone

- Healthcare workers Community meeting
- Church Truck with megaphone Other (specify: _____)

Section F: Socioeconomic Indicators

- F10 How many rooms are in the house?
 ___ __ rooms
- F20 How many rooms are used for sleeping?
 ___ __ rooms
- F30 What is the primary flooring material? Observe:
 Concrete Tile Wood
 Dirt Ceramic
- F40 What is the primary roofing material? Observe:
 Tile/shingle Thatched/straw Wood
 Zinc/metal Concrete
- F50 What is the primary material of the exterior walls? Observe:
 Concrete/block Wood Zinc/metal
- F60 What type of fuel is used in the household for cooking? Mark all that apply:
 Gas Wood
 Electricity Charcoal
- F70 Does the household have the following assets? Mark all that apply:
 Electricity Radio Television
 Computer Cellular phone Residential phone
 Refrigerator Microwave Stove
 Cooling fan Washing machine Bicycle
 Car Motorcycle

Section H: Access to and practices regarding water and sanitation services

H10 What is the primary source of drinking water for members of the household?

- Piped water inside the house Piped water outside the house
 Collected rainwater Water truck
 Bottled water Protected well water
 Unprotected well water River, canal or other surface water
 Other (specify: _____)

H20 Do the members of your household regularly drink water from another source?

- Yes No

H30 If yes, what other sources of water are regularly used by members of the household?

- Piped water inside the house Piped water outside the house
 Collected rainwater Water truck
 Bottled water Protected well water
 Unprotected well water River, canal or other surface water
 Other (specify: _____)

H40 In the last week, have you taken water from a river or canal?

- Yes No

H50 Do you treat drinking water in any way so that it is safer to drink?

- Yes No

H60 If yes, how do you treat your drinking water?

- Chlorine Boiling Filter (ceramic, sand, etc.)
 Silk filter UV/sun exposure Allow it to settle
 Lemon

H70 In the last week, have you swam, bathed or worked in a canal?

- Yes No

H80 Where do members of the household go to the bathroom?

Latrine Toilet

Septic tank or cesspit

No service available

H80a If latrine, does the latrine have a slab?

Yes No

H80b If latrine, do you share this facility with people that live outside the house?

Yes No

H80c Can you show me where members of the household go to the bathroom?

Yes No

H80d Observation: what type of facility is it?

Private toilet Shared toilet

Private latrine with slab Private latrine without slab

Shared latrine with slab Shared latrine without slab

Septic tank/cesspit No service available

Not observed

H90 Is there a place in the household to wash hands?

Yes No

H100 Do you store water in the house?

Yes No

Supplementary material: References

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