

**The Use of Community Based Participatory Research to Assess Perceived Health Status
and Health Education Needs of Persons in Rural and Urban Haiti**

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Abstract

Purpose: Haitian communities have limited access to health care. The purpose of this study was to determine the perceived self-health status and health education needs of rural versus urban Haitians using a Community Based Participatory Research design.

Sample: Residents of two rural and one urban Haitian communities (n = 340) were surveyed to obtain demographic information, perceived health status, and priority of health education topics.

Methods: Surveys were used to collect demographic data and the personal importance of various health education topics were obtained. Native Haitians were trained to use the survey instrument and conducted the short interview with willing participants in rural and urban settings.

Findings: Health related status significantly varied by rural versus urban community type in that those in urban communities ($M = 2.64$, $SD = 1.10$) viewed their health as significantly better than those in rural communities ($M = 2.26$, $SD = 1.14$), $t(324) = 2.93$, $p = .004$. The highest rate topics for requests in health education included spiritual health ($M = 4.44$, $SD = 0.84$). Interest was shown in learning about injury prevention, improving maternal mortality, helping children live longer, environmental issues such as water, food, and sanitation. Less interest was shown in learning about weight management and exercise.

Conclusions: A health education curriculum was developed to train laity in faith based organizations to be community health promoters. This project offers sustainable interventions to empower communities to take responsibility of their own health.

Keywords: Health promotion, Rural health, International health, Faith based health promotion, Self perception of health

The Use of Community Based Participatory Research to Assess Perceived Health Status and Health Education Needs of Persons in Rural and Urban Haiti

Haiti is the poorest country in the western hemisphere and ranks the lowest in health status indicator measures (World Health Organization [WHO], 2016). Ten million people inhabit Haiti and more than half the population are 24 years of age or younger. Haiti has a high incidence and prevalence of both communicable disease (CD) and non-communicable diseases (NCD). Communicable disease, maternal, perinatal, and nutritional conditions are responsible for 42% of deaths while cardiovascular disease, cancer, chronic respiratory disease, diabetes, and other NCDs make up 49% of deaths. Injuries are a significant (9%) cause of death as well. In Haiti 47% of the

population live in rural areas (WHO, 2016). The challenges and struggles of the rural Haitian people are significant and unique to this population who has dealt with a high incidence and prevalence of both natural and man-made disasters affecting the health of the entire country.

Tragic events over the last several years, including the earthquake of 2010 and subsequent disease outbreaks related to this event have taxed an already inadequate health care system. Many rural Haitian communities have little to no access to health care providers. Even when a health care provider is available, many individuals and families cannot afford to pay for care. Poverty and lack of economic resources plague Haitians whose average annual income is approximately \$1800 USD/year while on the same island of Hispaniola the residents of the Dominican Republic average \$12,800 USD/year (Central Intelligence Office [CIA], 2015). In 2010 the CIA estimated that more than 40% of Haitians were unemployed while in 2012 it was estimated that more than 58% lived below the poverty line (CIA, 2016). As evidenced in many areas around the world, poverty leads to lack of health care and health literacy as well as higher rates of disease, injury, and poorer health outcomes (Sepehri & Guliani, 2015; von Philipsborn, Steinbeis, Bender, Regmi, & Tinnemann, 2015).

Educating individuals on health promotion will prepare them to make informed choices and promote a healthier lifestyle. In global areas where access to health care is difficult due to costs, transportation, or geographic region, basic health education can provide information that may translate to health protection. Health education can allow individuals the ability to understand how to protect their own health and the health of family members (Whisenant, Cortes, Hill & Holston, 2015).

Numerous individuals, faith based groups, philanthropists, non-governmental organizations, and government agencies from many countries around the world have provided aid, including

medical assistance, health education, and health care, to the people of Haiti for many years. This aid is important in relieving some of the suffering of the population, but is not a sustainable and completely effective method of providing health education and health care to the Haitian population. Providing relevant and timely health education to any group is crucial for best health practices and best health outcomes. Therefore, the purpose of this study was to determine the perceived self-health status and health education needs of Haitian adults within the communities (rural versus urban) using a Community Based Participatory Research (CBPR) design. The research questions were

1. What is the self-perceived health status of Haitian adults?
2. What is the self-perceived health education needs of Haitian adults?
3. Are there differences in self-perceived health status in rural versus urban Haitian adults?
4. Are there differences in self-perceived health education needs in rural versus urban Haitian adults?
5. Is the CBPR approach effective in gaining health information in both the urban and rural Haitian population?

Community Based Participatory Research

The National Institutes of Health [NIH] (n.d.) describes CBPR as an applied collaborative approach that provides an opportunity for the community residents to participate in the entire research process. Advantages of CBPR include:

- joining partners with diverse expertise to address complex public health problems.
- improving intervention design and implementation by facilitating participant recruitment and retention.
- increasing the quality and validity of research,

- enhancing the relevance and use of data.
- increasing trust and bridging cultural gaps between partners.
- providing resources for the communities involved.
- benefiting the community and researchers alike through the knowledge gained and actions taken.
- the potential to translate research findings to guide the development of further interventions and policy change.

The focus of CBPR is to determine the specific needs of the community of interest by involving community residents. An important premise of CBPR is that research is conducted by, for, or with community members (Markey, Halseth, & Manson, 2010). A partnership between the researchers and the community of interest is established with the goal of improving the health of the residents in the community. Community residents are empowered through the use of CBPR (Bomar, 2010; Markey et al, 2010) by combining education and social action to effect a positive change in health status through health promotion and disease prevention activities. Community based participatory research has been shown to effectively introduce evidence-based research into community settings. Topics typically researched include quality of life, health care, and social determinants of health (Bomar, 2010).

Collecting data, maintaining participant privacy, acknowledging cultural variances within communities, and demonstrating how the research will positively affect the community are issues that must be addressed before beginning the study (Agency for Healthcare Research and Quality [AHRQ], 2009). When conducting research in an impoverished or developing country, attention should be given to any issue that may lead to mistrust or biased results. Community members should also be involved in the dissemination of the research results (AHRQ, 2009). Additionally,

it is important for professional researchers to relinquish the role of “expert” to the community leaders (Velasquez, Knatterud-Hubinger, Narr, Mendehall, & Solheim, 2011). Involvement of community members helps ensure the research question is relevant and important to the community.

In an effort to improve the health outcomes of the population in western Haiti, education/health literacy, health promotion and disease prevention, a CBPR model is appropriate. This model aids in the assessment of what individuals and the community believe are important to learn in order to improve health and demonstrate differences in rural and urban areas. CBPR is an appropriate form of research in developing countries that are experiencing economic, social, and political restructuring because of its flexibility and understanding of the community (Markey et al., 2010).

Literature Review

The CBPR model has been implemented successfully in multiple partnerships between academic institutions, faith based organizations, and communities that address health care disparities (AHRQ, 2009). CBPR has been used in numerous studies to assist researchers to understand community member’s experiences, facilitate community outreach, and augment cultural awareness as well as to implement projects effecting improvements in asthma, diabetes, smoking cessation, among others (Velasquez et al., 2011). Several examples of the use of CBPR in rural communities, in developed, and developing countries were found in the literature search.

Sukhera, Cerulli, Gawinski, and Morse (2012) utilized CBPR methodology to study how a rural Honduran community defined and responded to intimate partner violence. The researchers met informally with community leaders to obtain preliminary information about cultural norms, community hierarchies, and gender roles (Sukhera et al., 2012). Non-medical community residents

(both male and female) as well as community health workers and local midwives participants were recruited for a qualitative study in order to obtain the most accurate and comprehensive perspectives of the scope and nature of their research interest. Differences were found in the perspectives of the female health care volunteers and the male community leaders which emphasized the importance of education and involvement of community residents in the design and implementation of intimate violence prevention programs (Sukhera et al., 2012).

Several CBPR project partnerships in the Lower Mississippi Delta between academic researchers, organizational entities, and local communities were implemented and yielded positive outcomes (Kennedy, et al., 2011). One of the projects appraised the effectiveness of a faith based peer led weight loss program and found the faith based organization setting to be an effective setting for health and nutrition education programs (Kennedy et al., 2011). Baffour and Chonody (2009) used CBPR methodology in a rural community with a majority African-American population to understand community perceptions of infant mortality among African-American women that are pregnant or have young children. The research question was selected because of the health disparity that exists between the infant mortality rate in African-Americans and other racial groups. The authors noted that understanding the community members' conceptualizations were valuable in developing "community-based instead of community-placed practice and policy strategies" (p. 380). Additionally, Baffour and Chonody (2009) utilized para- professionals to provide social support, promote healthy lifestyles and coping strategies, and increase their trust of traditional health and social service providers.

Methodology

Design

Community Based Participatory Research model employing direct surveys within the community was utilized. Researchers and interpreters gathered data in places of business, faith based organizations, and personal homes of individuals in urban and rural communities. Institutional Review Board (IRB) approval was granted from the primary investigators university IRB committee.

Setting

The study took place in three cities in western Haiti: Carrefour, Leogane, and Gressier. Carrefour is a small city 10 miles from Port Au Prince and is in an urban area with a hospital, business area, schools, and residential areas. Leogane and Gressier are rural communities consisting mainly of small huts and schools and where people earn money from small farms or from home based businesses.

Sample

Participants were residents of either Carrefour, Leogane, or Gressier, Haiti. Inclusion criteria were adult men or women who were willing to answer questions from the interviewers. There were no exclusionary criteria. Each participant was approached and voluntarily completed the survey either independently or with the assistance of a trained Haitian Creole/English interpreter.

Measures

Each participant was asked a series of questions regarding demographics including age, gender, occupation, number of children, education, and residence (rural/urban). Questions asked were 1) perceived personal health status and 2) perceived need for health education. Personal health related status included questions such as “How do you perceive your current health?”(1 being Poor and 5 being Excellent). Perceived health education needs included questions such as

“Do you believe education on health related issues would improve your and your family’s health?” Each participant was also given a list of 12 general health topics and asked to rate each one on “How interested are you in education on this topic?” with 1 being “No Interest” and 5 being “Very Interested.” Participants were also asked to determine the 12 general health topics that most interested them and rate them 1 – 5 as described above.

Procedure

Participants were recruited by word of mouth and were randomly approached by the researchers and interpreters in the three cities. They were not compensated. Researchers and interpreters approached individuals at participant’s place of employment with permission of the business owners. Street vendors and their patrons were also offered the opportunity to complete the survey. Parishioners were invited to stay after worship services to complete the survey. Others were approached while walking through the cities or at their homes. All individuals approached were invited to participate by asking if they would be interested in completing a survey. The interpreters explained the purpose of the study and how the information would be used. Consent was determined by the individuals’ agreement to complete the survey. If individuals could not read, the survey was read to them and their responses were noted by the interpreter. Researchers were available to help answer any questions related to the survey.

Statistical Methods

Simple descriptive statistics were conducted on demographics, health related status and health education. Independent T-test and one-way ANOVAs were conducted between variables to understand if differences existed within the sample. Finally, correlations were conducted for exploratory purposes in hopes of discovering additional clues to improve health and health education.

Results

Residents of the West region of Haiti (n = 340) responded to the request for information.

Some participants did not complete all the demographic data. See Table 1 for descriptive data.

Table 1

Demographic data of Haitian Sample.

	Total	Rural	Urban
Gender			
Male	36.8 (124)	31.1 (68)	49.6 (56)
Female	61.7 (208)	68.9 (124)	50.4 (57)
Marital Status			
Married	17.8 (60)	26.9 (46)	13.3 (14)
Single	36.5 (123)	36.8 (63)	57.1 (60)
Separated / Widowed	11.3 (28)	16.4 (28)	9.5 (10)
Common Law	16.3 (55)	19.9 (34)	20.0 (21)

Of those employed (85%), 26 jobs were identified as held in communities or in the home.

Additional demographics for the participants can be found in Table 2.

Table 2

Demographic Characteristics

	Total (n = 336)	Rural (Leogane & Gressier) (n = 221)	Urban (Carrefour) (n = 115)
Variable	M (SD)	M (SD)	M (SD)
Age	37.07 (16.63)	37.78 (16.96)	35.75 (15.99)
Children	2.06 (2.17)	2.23 (2.07)	1.89 (2.26)
Years of education	8.4 (4.82)	7.61 (4.99)	9.38 (4.42)
Health Related Status	2.40 (1.14)	2.26 (1.14)	2.64 (1.10)

Health Descriptive Statistics

Health related status. Participants reported a mean perceived health related status of 2.40 ($SD = 1.14$) suggesting that the majority of the participants believed their health was somewhere between fair and good. However, only 4.2% of the participants perceived their health to be excellent and 27.3% believed their health to be in poor condition (Table 2). Males ($M = 2.71$, $SD = 1.06$) perceived themselves as significantly more healthy, $t(320) = 3.98$, $p < .001$) than females ($M = 2.20$, $SD = 1.14$). An independent samples t-test demonstrated that health related status significantly varied by rural versus urban community type, $t(324) = 2.93$, $p = .004$. Those in urban communities ($M = 2.64$, $SD = 1.10$) viewed their health as significantly better than those in rural communities ($M = 2.26$, $SD = 1.14$). The urban communities ($M = 9.38$, $SD = 4.42$) also reported significantly more years of education than the rural communities ($M = 7.61$, $SD = 4.99$), $t(250) = 2.93$, $p = .004$.

Health education. The overwhelming majority of the participants agreed that becoming more educated on health issues would result in improved health for themselves (94.7%) and families (92.6%). In addition, 92.5% of the participants wanted to receive more education on how to be healthy. Of the 12 general health topics, all received a high level of interest (above 3.4 on a scale of 5). The highest rated topics included Spiritual Health ($M = 4.63$, $SD = .75$), overall health ($M = 4.49$, $SD = .99$) and mental health ($M = 4.44$, $SD = .84$). The lowest rated areas included exercise ($M = 3.50$, $SD = 1.39$) and weight management ($M = 3.81$, $SD = 1.23$). For a complete list of topics and means, see Table 3.

When participants were asked to choose the topic they most wanted to receive information, 30.9% chose infectious diseases, 15.9% chose raising healthy babies and 11.9% chose

environmental health. Findings from the survey data revealed the participants' ranking of potential health education topics as follows: spiritual health, overall health (or improving overall health), mental health, preventing infectious diseases, preventing injuries, improving infant mortality, improving child mortality, improving maternal mortality, environmental issues such as water and sanitation, food (diet and nutrition), weight management, and exercise.

Table 3

Means and standard deviations of health education needs compared by area type.

Health Topics	Rural (n=221)	Urban (n=115)	Test Statistics
	<i>M (SD)</i>	<i>M (SD)</i>	<i>t (p)</i>
Diet	4.18 (1.10)	4.12 (1.17)	-.458 (.647)
Exercise	3.54 (1.38)	3.41 (1.41)	-.805 (.422)
Environment	4.31 (1.03)	4.12 (1.11)	-1.51 (.133)
Infectious Diseases	4.36 (1.08)	4.42 (.808)	.573 (.567)
Healthy Babies	4.26 (1.07)	3.85 (1.32)	-2.82 (.005)
Mother's During Birth	4.37 (.977)	3.86 (1.26)	-3.78 (.001)
Healthy Children	4.45 (.915)	4.06 (1.09)	-3.39 (.001)
Physical Injuries	4.14 (1.10)	4.31 (.867)	1.45 (.147)
Overall Health	4.53 (.814)	4.40 (.928)	-1.39 (.165)
Weight Management	3.88 (1.21)	3.68 (1.26)	-1.46 (.145)
Mental Health	4.44 (.878)	4.45 (.765)	.057 (.955)
Spiritual Health	4.68 (.739)	4.54 (.754)	-1.60 (.110)

Independent t-tests were conducted comparing the rural and urban populations to investigate differences in health education needs. There were significant differences between the rural and urban communities in three categories; maintaining healthy babies, $t(193.22) = -2.82, p = .005$, protecting mothers during childbirth, $t(186.37) = -3.78, p < .001$, and maintaining healthy children, $t(327) = -3.39, p = .001$. In all three cases the rural population was more interested in health education about these subjects.

Exploratory correlations. Age was negatively correlated with perceived health $r(319) = -.292, p < 0.001$ and interest in education about exercise, $r(319) = -.137, p = .015$, and infection diseases $r(320) = -.115, p = .015$. In other words, the older participants were the lower they ranked

their health and the less interested they were in health information on exercise or infection diseases. Age was positively correlated with interest in education about spiritual health $r(319) = .117, p = .037$, suggesting the older the participant, the more they were interested in spiritual health. See Table 4.

Table 4.

Correlations with Age

Health Topics	Age R
Exercise	-.137*
Infectious Diseases	-.115*
Spiritual Health	.117*

* Correlation is significant at $p \leq .05$ level

Education was positively correlated with interest in several health topics including; exercise, $r(250) = .194, p = .002$, infectious diseases, $r(250) = .239, p < .001$, preventing injuries, $r(250) = .194, p = .002$, overall health, $r(249) = .187, p = .003$, weight, $r(250) = .249, p < .001$, and mental health, $r(251) = .132, p = .038$. Years of education were also positively correlated with perceived health $r(250) = .293, p < .001$. These correlations suggest the younger and more educated the participant, the more likely they were to be interested in these health topics and perceive themselves in better health. See Table 5.

Table 5.

Correlations with Education

Health Topics	Education R
Exercise	.194**
Infectious Diseases	.239**
Physical Injuries	.194**
Overall Health	.187**
Mental Health	.132*

Discussion

The western Haitian population provided interesting diverse findings related to the participants. While the mean age was 37.07 years of age, the WHO (2016) reported the mean age of Haitian citizens to be 22 years of age. The WHO (2016) also reports the life expectancy for males at 62 years and females at 66 years. Our sample provided information from some of the older citizens despite the fact that 37 years of age is very young for most countries. As well, participants reported only two children per family which seems to be a low number for persons in developing and poor countries. With the infant mortality rate of 55 per 1,000 births (World Bank, 2014), it is possible individuals would have reported greater number of children if the question had included both live and deceased groups.

Completion of intermediate school in Haiti is the 8th grade, when many leave school to begin working, compares with our finding of mean education at 8.4 (SD = 4.82) years of education. Dropping out of school at this early age can negatively affect education achievement and also health status and opportunities for prioritizing health. The level of education should be taken into consideration when assessing results and planning health education and related interventions for health literacy.

Most participants perceived health related status as good to fair. This may be congruent with other countries in the Caribbean. For instance, Jamaican women were surveyed using the same tool with 75% of participants reporting at least good health (Whisenant, et, al. 2015). Landefeld et al. (2014) found in the Dominican Republic that higher wages were correlated with higher self-perception of health indicating greater economic opportunities may equal improved self-perceived

health status. Improving economic environment in Haiti could improve health status and health outcomes.

Males perceived themselves as significantly healthier than females. Worldwide, women require and utilize more health care than men due to pregnancy, childbirth, and subsequent issues. Women in Haiti have inadequate access to health care. It would be expected that men in Haiti perceive better health than women perceive their health as women in Haiti lack many basic hygiene tools and basic medical care that could improve their real and perceived health. Many Haitian women perceive themselves as weaker and subservient. Women may serve themselves after the men and the children have eaten so they may do without so that other family members have enough.

Reported health status significantly varied by community – whether it was rural or urban. This is not an uncommon finding as many studies have identified that persons in rural areas report lower levels of perceived health than urban counterparts. This is a common finding internationally as well (Dickstein, Neuberger, Golus, & Schwartz, 2014; Sangster et al, 2013; Zimmer, Wen, & Kaneda, 2010). Rural areas may have less access to education, economic opportunities, and health care. For individuals living in Haiti, especially rural areas of Haiti, managing life can be extremely difficult. These difficulties can translate into lower perception of health and increased desire for health education.

Most of the participants believed that becoming more educated on health issues would result in improved health for themselves and families. In addition, the majority of the participants wanted to receive more education on how to be healthy. These findings correlate to findings in Jamaica where participants believed increasing health education would also improve health status (Whisenant, et al, 2015). The participant's desire for health education supported our plan for

implementing health education programs in each community. Health education topics being taught correlate with the most requested topics from the survey.

The highest rated topics that participants were interested in were spiritual health, overall health, and mental health. The rating of these topics is different than in developed countries. Haitians spirituality is of great importance to them and they wish for spirituality to be incorporated with other aspects of life, including health. This information was used when developing our health promotion programs. The health education programs were grounded in faith based organizations utilizing the ministers and others who were well known and received in the religious community.

Participant's age was negatively correlated with perceived health and interest in education about exercise and infection diseases. As would be expected, the older the individual the poorer health was perceived. Age was positively correlated with request for guidance related to spiritual health suggesting the older the participant, the more they were interested in spiritual health. The "older" participants had less interest in learning about exercise and prevention of infectious diseases than spirituality with the assumption there was no personal benefit in learning more about these other topics. This would run parallel with the culture of Haiti and the importance of spirituality especially among the older population.

Education was positively correlated with perceived health, interest in exercise, infectious diseases, preventing injuries, overall health, weight, and mental health. These findings support that higher levels of education can improve individual efforts to learn more about personal health, therefore improving family and community health as well. Younger participants also reported higher levels of education. Community residents reported that some primary schools addressed health topics such as prevention of HIV, other sexually transmitted infections, and hygiene related

diseases. Introducing these topics early in school may empower individuals to seek additional information as they age or become parents.

Our study assessed how effective the use of CBPR was to gain health information from adult Haitians living in the western region of the country. The Haitian people were interested and pleased to participate in research to assist in improving not only their own health status and education, but also the health status of families and communities. There was a 100% participation rate among individuals approached by researchers. Many individuals shared with neighbors and co-workers the survey opportunity resulting in a snow-ball effect of sampling. Several community residents who spoke English offered their services to assist in introducing us to community leaders and in encouraging residents to trust us and to participate in the study. These English speaking residents volunteered to stay with us each day without pay. This was indicative of how important and how much the community valued the CBPR approach to gaining information.

Limitations

Participants were surveyed from the western region of Haiti. Selection bias may have been a limitation as there was no specific guidelines for recruitment and the “snow-ball” effect could result in people who are homogenous. The persons who did participate, may have been highly motivated to do so – which limits findings to persons who may have not felt comfortable talking to strangers. As Haiti is unique in its culture and circumstances results may not be generalizable to other geographical locations. The statistical analysis identified more variance in the rural group than the urban group of participants. Also, the mean age of participants who completed the survey was younger than the mean age of the Haitian population.

Community Engagement

This study focused on the self-perceived health care needs and educational needs of the western Haitian population. The majority of the participants wanted to receive more education on spirituality, overall health, and mental health. Therefore, further development of programs in these areas is being developed. As well, it is important to improve the planning and delivery of care that is of interest to the community at large.

Chronic health care conditions plague many of the Haitian citizens. Identifying the needs of the community can impact individual and personal development. The high level of involvement shows the need for ownership and empowerment in community members. Participation in health care programs may increase if there is a true sense of ownership and involvement in what is being taught in the community. If community members are not involved, implementation of health care interventions may fail. The process of engaging the community is essential for community members to participate and be involved. Our study identified that the people of Haiti, both rural and urban, are interested in health education based on their own perceived health care needs.

Implications for Interventions in Rural versus Urban Haiti

Identifying the needs of rural versus urban community members is essential in identifying a plan to care for the individual as well as developing sustainable programs that can be replicated to improve health education and health care. As seen in this study both rural and urban groups wish to learn more about health promotion and disease/injury prevention, but there were distinct differences in interest in some topics. Understanding the different health interest and education within these two populations is essential in developing health promotion programs that will be well received and effective for both groups within their specific geographic area.

This study supports the need to develop specific health education and health promotion programs based on specific geographic areas and information gained from the individuals who

reside in these areas. As seen in Haiti and internationally rural populations may have different needs than urban population. Haiti has many health issues which are relevant to both rural and urban groups. The need for health education, health promotion, and basic health care are great throughout the country. Unfortunately, health disparities as well as lack of resources limit access to health education and health care negatively affecting the wellbeing of this country. Simple, cost effective health promotion programs can be implemented in Haiti. These programs can improve health literacy and empower the Haitian people to manage their personal health and the health of their families and communities while addressing the significant limitations which affect health outcomes in their country.

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