HHS Public Access

Author manuscript

J Allied Health. Author manuscript; available in PMC 2013 November 01.

Published in final edited form as:

J Allied Health. 2013 ; 42(3): 135–140.

Relationship of personal health experiences with interest in health careers among youth from an underserved area

Alyssa Todaro, BS, **Shakira Washington, MS**, **Bradley O. Boekeloo, PhD, MS**, **Brian Gilchrist, MPH**, and **Min Qi Wang, PhD, MS**

University of Maryland School of Public Health, Department of Behavioral and Community Health

Abstract

Only 10% of health professionals are from racial/ethnic minority groups, and much research has been focused on encouraging minorities to enter a health career. The lack of health workforce diversity has many implications for the effective delivery of care to an increasingly diverse US population. The goal of this analysis is to examine the influence of personal health experiences on interest in a health career. “Personal Health Experiences” is a newly created scaled variable that assesses the influence of direct and indirect health experiences of respondents. In a sample of 134 predominantly minority 10th graders from underprivileged neighborhoods, the scale had adequate psychometric properties (range = 1 to 7; mean = 4.44, s.d. = 1.46, median=4.60, Cronbach's alpha = 0.72), and multivariate regression modeling revealed that “Personal Health Experiences” predicted increased “Interest in Health Careers" (B=0.47, s.e.=0.10). Future research is needed to determine the role that personal health experiences play in career choices and one's success in health career decisions. Such information could, for example, help to refine health profession recruitment strategies.

Introduction

Minority groups represent approximately 25% of the US population but only 10% of those working in the healthcare professions (1, 2, 3). This lack of workforce diversity has many implications for effective delivery of health services to an increasingly diverse U.S. population. Advancing cultural competency within the field and increasing access to care are two of many relevant arguments for greater diversity in the health care workforce (4).

Much research has been conducted on how to encourage minorities to enter a health career (2,3). Because race has been shown to predict health outcomes and health care delivery, it has been argued that educational programs leading to health careers should be more aggressive in recruiting minority students through affirmative action, outreach to school-age children, community involvement, and advertisements (3). Partnerships between higher education institutes, urban school systems, community organizations, and private enterprises have been utilized to create “pipelines” for minority entry into health professional schools, (2). Personal/social influences, academic preparation, aspirations, and self-efficacy have all

Correspondence: Alyssa Todaro, 10 Center Drive Room 2B12C, Bethesda, MD 20892, Graduate assistant, University of Maryland School of Public Health, Department of Behavioral and Community Health, O: 301-496-5805, F: 301-480-9675, atodaro@umd.edu.

been shown to predict enrollment in health career-related education programs (5). Unfortunately, a clear understanding of possible motivating factors continues to elude those striving to increase representation of underrepresented populations in health science programs and careers.

Personal health experiences, especially among communities disproportionately impacted by morbidity and mortality, is an under-studied area worthy of investigation. Such experiences are often noted in personal statements to medical and public health schools as a key motivator of applicants, and as the underlying reasons for wanting to help others (6). From the "decision-making perspective" (7, 8, 9,10), personal health experiences could change most individuals' "overly optimistic" feeling that nothing bad will ever happen to them, and perceived severity could also be affected. There are many other mechanisms through which personal experiences could influence interest in a health career. For example, personal health experiences could heighten one's awareness of health problems and related health professions, and possibly increase feelings of wanting to help oneself and others to avoid the suffering that one has experienced.

The goal of this analysis is to preliminarily examine whether personal health experiences are correlated with underserved minority students' interest in health careers. We hypothesize that there is a correlation even after controlling for various student demographics. Demonstration of this correlation can then be followed with future research on potential modifiers and mediators of this relationship to further understand which students would and would not want to pursue a health career after personal health experiences and the mechanisms that drive these relationships. This line of research could ultimately better pinpoint students from underserved minority backgrounds who may be most interested in health careers and personally equipped to address health disparities.

Methods

This analysis utilizes baseline data collected as a part of a larger study, Climbing Up & Reaching Back (CURB). CURB is a three-year project designed to identify predictors of pursuit of health science careers and test educational materials and face-to-face mentoring interventions to increase interest in health science careers among underprivileged minority high school students living in Prince George's County, Maryland. Institutional Review Board (IRB) approval was obtained for this research.

Recruitment and data collection

A total of six schools participated in the first round of the CURB initiative. Schools in the "inner National Capital beltway" Prince George's County area (located in Prince George's County on or between the beltway, a major highway, and the Washington, D.C. jurisdictional border) were selected. This area had high minority race/ethnicity composition and a relatively poor socioeconomic profile. Six of the eight high schools selected in the area participated with two schools declining participation due to other current priority projects occurring at the school. To participate in CURB, students had to be enrolled in the 10^{th} grade at one of the participating high schools and have a cumulative grade point average of B– or higher. Further, only students without developmental disabilities requiring

special classroom teaching assistance were eligible for participation. To maintain student confidentiality, participating school principals and relevant administrative staff determined individual student eligibility using available school records. If a student met the necessary requirements, school staff members who were specifically designated to assist with the recruitment of students would confidentially approach each eligible student, provide a detailed explanation of the program and enrollment process, and assess student interest in CURB. All students who provided a completed consent form from a parent and a self-signed assent form by initiation of the study were eligible for CURB (n=167). Eligible students were then offered the CURB paper-and-pencil baseline survey at the beginning of a study initiation session held at the researcher's university to which all students were bused from their respective high schools. The university was in the same inner beltway area as the high schools. Students who did not attend this session were allowed to come to the university study office after the initiation session to complete the survey. All survey participants received $10 as an incentive. In total, 134 students completed the baseline survey, which provides the data being analyzed in this study.

Survey development

The baseline survey instrument was designed by a team of researchers including behavioral scientists, university students, and community members, using existing items whenever possible. New items were also developed for the survey. The survey was pretested with high school students not involved in the study to assess student ease of completion, comprehension, and acceptability. Several revisions and a second round of review and pretesting were conducted before the survey was administered for this study.

Demographic variables

Demographic variables included gender (coded 0=male, 1=female), ethnicity (coded 0=Non-Hispanic/Latino, 1=Hispanic/Latino), birthplace of respondent (coded 0=Non-U.S., 1=U.S.), overall GPA on last report card, first language (coded 0=Not English, 1=English), familial education as measured by highest educational attainment of either father or mother (0=High school or less, 1=Trade/vocational school, 2=Associate's degree, 3=College degree, 4=Master's degree, 5=Doctoral degree, 6=Don't know), and educational attainment of extended family members (0=no Masters/doctoral degree, 1=Master's or doctoral degree). Race (coded 0=American Indian/Alaska Native, 1=Native Hawaiian/Pacific Islander, 2=Asian, 3=Black/African American, and 4=White) was dichotomized (coded 0=Other, 1=Black/African American) due to the large proportion of African American students. Five individuals selected "Black/African American" in addition to at least one other race and were coded as "other." Thirty four individuals responded "do not know" or left the GPA question blank, reducing the n to 100. Birth place of respondent's parents (coded 0=Non-U.S., 1=U.S., 2=Don't know) was re-coded such that the one "do not know" response was made "system missing."

Independent Variable

"Personal Health Experiences" was a newly created scaled variable that assessed the strength of influence of direct and indirect experiences of the respondent with serious health conditions on their perspectives about health. The five items included in the scaled variable

were “I have had personal experiences that make me interested in health,” “I have known someone who died too young from a health problem,” “I have known someone who had a poor quality of life because of a health problem,” “My own health problems have affected how I think about health,” and “Poor health of another person has affected my life.” All response options were measured on a seven-item Likert-type scale ranging from one (strongly disagree) to seven (strongly agree). The average of the five items determined the individuals' "Personal Health Experiences" score. Final univariate analysis determined responses to "Personal Health Experiences" ranged from one to seven, with a mean score of 4.44 (s.d. = 1.46), median 4.60, and Cronbach's alpha of 0.72.

Dependent variable

The dependent variable “Interest in a Health Career” is a newly created scaled variable that assesses the interest of respondents in pursuing a career that is health-related. The three items included in the scaled dependent variable were “I now plan to become a health professional,” “I now plan to become a research scientist,” and “I now plan to become a medical doctor.” All response options were measured on a seven-item Likert-type scale ranging from one (strongly disagree) to seven (strongly agree). The average of the three items determined the individuals' "Interest in a Health Career" score. Final univariate analysis determined responses to "Interest in a Health Career" ranged from one to seven, with a mean score of 4.63 (s.d. = 1.79), median 5.00, and Cronbach's alpha of 0.86. One individual who answered the majority of other survey items did not answer any of these three items (n=133).

Data analysis

All data were double entered into Microsoft Excel and converted to PASW (SPSS 16.0) for analysis. Discrepant entries were checked against the hard-copy survey before creating the final data set. To examine the identified variables of interest, we first ran univariate statistics including frequencies and measures of central tendency and variance. To examine endorsement of each individual personal health experience scale item, the responses were dichotomized by those who selected "agree" (5) or higher on the item versus those who selected "neutral" (4) or lower (refer to Table 2). Reliability (i.e., internal consistency) was assessed by Cronbach's alpha coefficient. As recommended by Nunnally (1978) internal consistency estimates of a magnitude of 0.70 or greater were considered acceptable(11). Basic Pearson's correlations were run between all demographics, independent and dependent variables. A linear regression model was first conducted for all variables as individual predictors of "interest in a health career", and then a final model included all the predictor variables. Because of the explorative nature of the study, the significance value of .10 was adopted.

Results

Demographics analysis

Basic demographic descriptions of the sample were assessed (Table 1). The student sample was roughly two thirds female, African American, of foreign-born parents, born in the U.S., having English as their first language, and with parents of low or unknown education level.

About one-fifth of the sample was Hispanic/Latino. The average ratings (from strongly disagree=1 to strongly agree=7) for the personal experiences items ranged from 3.78 for "My own health problems have affected how I think about health" to 4.95 for "I have had personal experiences that make me interested in health." Over half (60.4%) of students said that they had a personal experience that made them interested in health (Table 2).

Bivariate analysis

Those who were born in the United States were less likely to be interested in a health career than those who were not born in the U. S., $b = -.675$, $p<.05$. The personal health experience scale was significantly predictive of the students' interest in a health career, $b = .471$, $p<.01$. The students whose parents were born in the U.S. were less likely to be interested in a health career, $b = -.612$, $p<.10$.

Multivariate regression analysis

In the multivariate regression model with all demographics included, only the personal health experience scale remained significant in predicting interest in a health career, $b = .365$, $p<.01$. Hispanic/Latino students were less likely to be interested in a health career than non-Hispanic students, $b = -1.62$, $p<.10$. The students whose parents were born in the U.S. were less likely to be interested in a health career, $b = -.899$, $p<.10$. (see Table 3).

Discussion

Much energy has been focused on increasing minority representation in health careers. However, very little is known about the role of "Personal Health Experiences" as an influence on health related career choice – especially among low-socioeconomic, minority high school populations. In this analysis of 10th graders from a low-socioeconomic area, we found that the majority of students agreed that they had personal health experiences. This is consistent with the common finding that minority and underserved communities as a whole suffer from disproportionately more health problems then other communities (12); hence, it is not surprising that many minority students with underserved backgrounds experience health problems if not first-hand, then among their friends and family members. This study also created a reliable multi-item scale to allow measurement of personal health experiences. Finally, the findings indicate that personal health experiences predict interest in health careers after controlling for other student demographic factors such as level of parent education. Since many 10th graders may not yet have a clear sense of their career options and possibilities regarding health careers, it may be that students with personal health experiences have special insight and sensitivities about health problems and health professions that other students do not have.

Tenth grade could be a pivotal time for students to gain appreciation for their career options given that it is a time for students to think about post-high school plans, and for college-bound students to begin choosing areas of educational pursuit and colleges of interest. Hence, high school career advisors and programs geared to expand pursuit of the various health fields may become more effective by assessing direct and indirect experiences with poor health among such 10th grade students. Programs directed at students with past health

experiences may emphasize how health related careers have the potential to improve health conditions of communities highly impacted by illness and disease. Future research on the mechanisms for influence of personal health experiences on pursuit of health careers may further elucidate how 10th grade minority, underserved students might best be nurtured in their decision-making regarding health careers.

Future research on the observed correlation between personal health experiences and interest in health careers should examine this relationship in similar and other populations to determine its robustness and generalizability. Also, further research could examine potential modifiers and mediators of this relationship to further understand which types of experiences and students elicit interest in health careers, and the mechanisms that drive these relationships. For example, this study suggested in bivariate analysis that non-U.S. born students have the most interest in health careers; and they potentially could be the most impacted by personal health experiences. Studies with larger samples may elucidate such relationships.

The “Personal Health Experiences” scale was newly developed for this study and warrants further testing for validity and reliability across varying populations. The scale had acceptable internal consistency in this study. Further scale development that may distinguish between the types of health experiences (e.g., negative versus positive), number of health experiences, as well as direct or indirect health experiences and help identify how different dimensions of personal health experiences have different effects on health career interest. ”Personal Health Experiences” in this study focused on negative health experiences, one dimension of many potential dimensions of personal health experiences.

This study is not without limitations. Given that the study was conducted in a predominantly minority, low-income population in one county in Maryland, caution should be used when generalizing the results to other populations. Also, the study population included predominantly African Americans, but was 22% Hispanic/Latino and nearly 33% recent immigrant, hence the study includes almost exclusively minority youth who have historically been under-studied. The study sample frame identified all students that met eligibility criteria in the targeted schools and all of these students were to have been recruited. However, in implementation, schools relied on a convenience sampling methodology from the sample frame based on which students were in attendance on the day selected by the school recruiter, increasing the risk of selection bias and limiting generalizability. Also, as students needed parent consent as well as their own assent to participate, the sample may be biased toward students most interested in the study goals and whose parents were supportive of the study goals. As the data were self-reported and not validated through other means, recall and social desirability biases in responses cannot be ruled out. Finally, as the primary focus of the larger overall study was to test the efficacy of an intervention to increase minority representation in health science education programs, this secondary analysis was limited to the population and measures used in the overall study. This analysis relied on a cross-sectional survey, thus, cause and effect is based on speculation that is not confirmed.

In conclusion, to our knowledge this was the first attempt to create a scaled measure that captured personal health experiences as an independent theoretical construct tested to determine its correlation with interest in health careers. This study suggested that personal health experiences had a significant influence on interest in health careers among high achieving, minority, 10th graders in an underprivileged community. If confirmed in future studies, personal health experiences could be a key variable used to better understand youth motivation for health careers. Future studies should include investigation of various possible dimensions of personal health experiences as they relate to pursuit of health careers, and the mechanisms by which these dimensions influence health career choices. There may also be age, culture and ethnic variations on the influence of personal health experiences. Finally, different types and dimensions of personal health experiences may influence different health related career choices such as research, public health, and medicine.

References

1. Perlino CM. Issue Brief: The Public Health Workforce Shortage: Left Unchecked, Will We Be Protected? American Public Health Association. 2006 Sept. [Internet]. Available from: http://www.apha.org/NR/rdonlyres/8B9EBDF5-8BE8-482D-A779-7F637456A7C3/0/workforcebrief.pdf.
2. Erwin K, Blumenthal DS, Chapel T, Allwood LV. Building an academic-community partnership for increasing representation of minorities in the health professions. J Health Care Poor Underserved. 2004; 15(4):589–602. [PubMed: 15531817]
3. Gabard DL. Increasing minority representation in the health care professions. Journal Allied Health. 2007; 36(3):165–175.
4. Cohen JJ, Gabriel BA, Terrell C. The case for diversity in the health care workforce. Health Aff. 2002; 21(5):90–102.
5. Barfield JP, Folio MR, Lam ET, Zhang JJ. Factors associated with enrollment in allied health education programs: development of a predictive scale. J Allied Health. 2011; 40(2):82–89. [PubMed: 21695368]
6. White JS, Lemay JF, Brownell K, Lockyer J. A chance to show yourself: how do applicants approach medical school admission essays? Med Tekh. 2011; 33(10):541–548.
7. Ajzen, I.; Fishbein, M. Understanding attitudes and predicting behavior. Englewood Cliffs, NJ: Prentice Hall; 1980.
8. Janz NK, Becker MH. The Health Belief Model: A decade later. Health Educ Q. 1984; 11:1–47. [PubMed: 6392204]
9. Rogers, RW. Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In: Cacioppo, JT.; Petty, RE., editors. Social psychophysiology. New York: Guildford Press; 1983. p. 153-176.
10. Sutton, SR. Fear arousing communications: A critical examination of theory and research. In: Eiser, JR., editor. Social psychology and behavioral medicine. New York: Wiley; 1982. p. 303-338.
11. Nunnally, JC. Psychometric Theory. 2nd ed. New York: McGraw-Hill; 1978.
12. Liao, Y.; Tucker, P.; Okoro, CA.; Giles, WH.; Mokdad, AH.; Harris, VB. REACH 2010 surveillance for health status in minority communities -- United States, 2001–2002. MMWR. 2004. [Internet]. Available from: http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5306a1.htm.

Table 1

CURB Participant Demographic Characteristics

	n	%
Gender		
Male	40	29.9
Female	94	70.1
Race		
Black/African American	90	67.2
Other	44	32.8
Ethnicity		
Hispanic/Latino	30	22.4
Non-Hispanic/Latino	97	72.4
Missing	7	5.2
Birth parents born in US		
Yes	47	35.1
No	86	64.2
Don't know	1	0.7
Student born in US		
Yes	90	67.2
No	44	32.8
Is English your first language?		
No	44	32.8
Yes	90	67.2
Father/male guardian highest education level		
High school or less	41	30.6
Trade/vocational school	3	2.2
Associate's degree (2 years)	6	4.5
College degree (4 years)	14	10.4
Master's degree	15	11.2
Don't know	55	41
Mother/female guardian highest education level		
High school or less	42	31.3
Trade/vocational school	8	6.0
Associate's degree (2 years)	10	7.5
College degree (4 years)	19	14.2
Master's degree	13	9.7
Doctoral degree	2	1.5
Don't know	39	29.1

	n	%
Missing	1	0.7
GPA (n, mean, sd)	n=100, 3.38, 0.45	
Personal Health Experiences (n, mean, sd)	n=134, 4.44, 1.46	
Interest in Health Career (n, mean, sd)	n=133, 4.63, 1.79	

Table 2

Endorsement of components of ”Personal Health Experience" scale

	Agree **n(%)**	***Other*** **n(%)**	***Missing*** **n(%)**
"I have had personal experiences that make me interested in health"	81 (60.4)	52 (38.8)	1 (0.7)
"I have known someone who died too young from a health problem"	68 (50.7)	66 (49.3)	--
"I have known someone who had a poor quality of life because of a health problem"	81 (60.4)	50 (37.3)	3 (2.2)
"Poor health of another person has affected my life"	73 (54.5)	61 (45.5)	--
"My own health problems have affected how I think about health"	49 (36.6)	85 (63.4)	--

Table 3

Univariate and multivariate regression

	Univariate **B(SE)**	***Multivariate*** **B(SE)**
Gender	.355 (.339)	.258 (.450)
Race	4.98 (.847)	.138 (.375)
Ethnicity	−.214 (.375)	−1.62 (.852) ‡
Birth place	−.675 (.327)*	−.300 (.585)
Birth place of parents	−.612 (.310) ‡	−.899 (.495) ‡
GPA	−.082 (.140)	.649 (.458)
First language	−.415 (.330)	.421 (.617)
Parent education	−.031 (.066)	.002 (.093)
Family education	.324 (.311)	.170 (.433)
Personal health experiences	.471 (.099) †	.365 (.133) †

*Significant at the p<0.05 level.

†Significant at the p<0.01 level.

‡Approaching significance (p>0.05 and <0.10).