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A Review of Acculturation Measures and Their Utility in Studies Promoting Latino Health

Phyllis M. Wallace,[1] Elizabeth A. Pomery,[1] Amy E. Latimer,[2] Josefa L. Martinez,[1] and Peter Salovey[1]

Abstract

The authors reviewed the acculturation literature with the goal of identifying measures used to assess acculturation in Hispanic populations in the context of studies of health knowledge, attitudes, and behavior change. Twenty-six acculturation measures were identified and summarized. As the Hispanic population continues to grow in the United States, there is a need to develop rigorous acculturation measures that include health indicators. Findings suggest that multidimensional acculturation scales are robust measurement tools when assessing nationality, cultural awareness, media and language preferences, and health status. Furthermore, aspects of Hispanic cultural lifestyle, such as beliefs about nutrition and physical activity, affect health care utilization, treatment, and prevention. Health communication researchers should consider aspects of cultural values and beliefs, and their impact on health status, for future research and health promotion interventions.

Keywords

acculturation, Hispanics, literature review, measurements, Latino health disparities

[1]Yale University, New Haven, CT, USA
[2]Queen's University, Kingston, Ontario, Canada

Corresponding Author:
Phyllis M. Wallace, National Cancer Institute, Cancer Information Service, Yale Comprehensive Cancer Center, 55 Church Street, Suite 400, New Haven, CT 06510-3014, USA
Email: phyllis.wallace@yale.edu

Introduction

It is important to consider acculturation in a health context because it contributes to our understanding of the economic, social, and health care needs of Hispanic residents. For example, recent studies have explored positive relations between acculturation and prevalence on chronic disease, cancer screenings, utilization of health services, and health-seeking behaviors among Hispanics (Oetzel, DeVargas, Ginossary, & Sanchez, 2007; Solis & Pulley (1995). Hazuda, Stern, & Haffner (1988) postulated that place of origin and food preferences could be social determining factors for obesity and diabetes. Low literacy rates among 716 Mexican American farmworkers appeared to have a negative impact on mammography screening compliance (Palmer, Fernandez, Tortolero-Luna, Gonzalez, & Mullen, 2005). More acculturated Hispanic men and women experience better health outcomes. Similarly, a study conducted by Peréz-Escamilla and Putnik (2007) found that bicultural individuals reported better health outcomes. Acculturation can be a significant factor in health promotion efforts targeting U.S. Hispanic populations.

Taking acculturation into consideration informs the research design and ultimately development of culturally appropriate health interventions (Wallen, Feldman, & Aniker, 2002). For example, Latino cultural beliefs about causes of illness, treatment, and ways to prevent illness are significantly affected by religion, fear, and fatalism. These beliefs in turn influence health care utilization. Outside forces, supernatural forces, evil spirits, punishment from God, or hexes by *brujas* (witches) are perceived causes for physical disharmony (Murguía, Zea, Reisen, & Peterson, 2000). These perceptions may act as barriers to healthy lifestyle change and must be considered in any health promotion intervention.

This review aims to provide health researchers with a (a) synthesis of published acculturation measures in the context of health promotion research, (b) concept of acculturation as one of many factors influencing the health of Hispanics in the United States, (c) critical review of two acculturation measures frequently cited in the literature, and (d) recommendations for incorporating concepts of acculturation into the design, implementation, and evaluation of health interventions.

The concept of acculturation has its roots in anthropology but has been used in other disciplines such as psychology, sociology, and public health. In 1895, American anthropologist Otis Tufton Mason, who studied ethnographic differences among Native Indians, Alaskan Natives, and Africans relative to New World Europeans, coined the term *acculturation* (Herskovits, 1958) In 1905, German scholar Paul Ehrenreich conducted extensive anthropological

research describing "areas of acculturation" in his work among South American tribes focused on language and mythology (Herskovits, 1958). Cuéllar, Arnold, and González (1995) postulated that acculturation theory involves psychological acculturation along cognitive and behavioral domains to understand cultural change among immigrant groups. In present use, acculturation refers to cultural change from the place of origin to the adoptive host society (Dana, 1996; Herskovits, 1958). Acculturation can be viewed as the vehicle to *assimilation* by cultural adoption of the host society's norms, values, behaviors, and attitudes. Peréz-Escamilla and Putnik (2007) and Dawson, Crano, and Burgoon (1996) defined acculturation as the process by which cultural groups adopt the customs and behaviors of a new culture.

With a rich history spanning more than a century it is not surprising that while definitions of acculturation all refer to cultural change, there is a large degree of variability in how acculturation is defined. The word *acculturation* was first introduced into Webster's Unabridged Dictionary in 1928 as "the approximation of one human race or tribe to another in culture or arts by contact" and in 1934 was revised to "the approximation of one's social group of people to another in culture or arts by contact."

In light of the varying definitions of acculturation, it is important to apply acculturation constructs to understanding the health of individuals moving from one society to another. Cultural lifestyle beliefs associated with dietary habits, patterns of physical inactivity, and use of folk remedies affect the development of certain diseases. Indigenous beliefs about health affect health-seeking behaviors, utilization of health services, treatment, and prevention practices, such as health education and initial and repeat health screenings.

Method

Reviewing the Acculturation Literature: Search Strategy

We conducted an in-depth review of the literature employing electronic databases such as OVID, MEDLINE, and CINAHL (January 1979 to December 2006) of English-language peer-reviewed journals. Other search strategies included conducting a hand search of key journals for articles not indexed in the databases, mining reference lists of all articles in this review, and consulting noted anthropology and public health experts in the field. Keyword terms and different permutations included iterations of Hispanic, Latino, Mexican Americans, and Central and South Americans and the following terms: acculturation + [Hispanic/Latino], [Hispanic/Latino, nutrition], [Hispanic/Latino, physical activity], [Hispanic/Latino, fruits and vegetables], and [Hispanic/

Latino, cancer, attitudes, fear, fatalism]. Articles were included in the review if they reported an acculturation measure and its psychometric properties (e.g., reliability, validity), explored a relationship between acculturation and health status, or applied acculturation theory (i.e., confluence of cultural norms and language preferences) to assess health behaviors and attitudes. A total of 69 acculturation instruments were found, 11 in published studies and 58 in an unpublished report focused on all minority groups, such as African Americans, Hispanics, and Asian (Taras, 2007).

The search yielded 851 acculturation/Hispanic articles, 85 acculturation/physical activity articles, and 277 acculturation/nutrition articles. Thirty-one articles were selected because they met the study criteria. Twenty-six articles included the acculturation scales in the study (as listed in Table 1). Two studies were excluded because they addressed Asian immigrants (Salant & Lauderdale, 2003) including Korean Americans (Lee, Sobal, & Frongillo, 2000). However, these studies were helpful in assessing the influence of acculturation on minority health post arrival into the host society.

There were few published acculturation measures that included scales to assess Hispanics' knowledge, attitudes, and health risk behaviors; therefore, a few researchers opted to develop their own assessment tools (Hazuda et al., 1988; Murguía et al., 2000; Zea, Asner-Self, Birman, & Buki, 2002). The 24-item Cultural Health Attributions Questionnaire (Murguía et al., 2000) and 31-item Hazuda Acculturation and Assimilation Scale (Hazuda et al., 1988) were developed to measure Latino health beliefs influenced by religion on occurrence of illness and chronic disease. Understanding the association between acculturation and health beliefs is essential when conducting health research or developing culturally sensitive health promotion interventions.

Overview of Findings

Table 1 lists selected acculturation measures. Measures of acculturation are widely used today to assess the impact of acculturation perceptions of nationality, kinship, cultural processes, and perceived health beliefs (Oetzel et al., 2007; Peréz-Escamilla & Putnik, 2007). These scales attempt to quantify participants' cultural and social knowledge, behaviors, and attitudes on responses to length of time in the United States, place of birth, subjective measures of acculturation, and language and media preferences. Several different models of acculturation measures have been proposed. Unidimensional models refer to a (a) linear continuum from total immersion in one's place of origin or to the host's culture and (b) describe assimilation by becoming part of the new culture (Lara, Gamboa, Kahramanian, Morales, & Bautisa, 2005). Bidimensional

Table 1. Article Search of Acculturation Measures and Hispanics (*N* = 26)

Assessment	Author
Chicano Adolescent Acculturation Scale	Olmedo and Padilla (1978)
Cuban Behavioral Identity Questionnaire	García and Lega (1979)
Acculturation Rating Scale for Mexican Americans	Cuéllar, Harris, and Jasso (1980)
Padilla's Acculturation Scale	Padilla et al. (1980)
A Children's Hispanic Background Scale	Martinéz, Norman, and Delaney (1984)
Media Acculturation Scale	Ramiréz, Cousins, Santos, and Supik (1986)
Short Acculturation Scale for Hispanics	Marín et al. (1987)
Short Acculturation Scale for Hispanic Youth	Marín et al. (1987)
Los Angeles Epidemiological Catchment Area	Burnam, Hough, Karno, Escobar, and Telles (1987)
Hazuda Acculturation and Assimilation Scales	Hazuda et al. (1988)
Mexican American Acculturation Scale	Montgomery (1992)
Short Acculturation Scale for Hispanic Youth	Barona and Miller (1994)
Latino/Latina Acculturation Scale	Felíx-Ortiz, Newcomb, and Myers (1994)
Acculturation Rating Scale for Mexican Americans–II	Cuéllar et al. (1995)
Multiphasic Assessment of Cultural Constructs	Cuéllar et al. (1995)
Acculturation Rating Scale for Mexican Americans–Short Form	Dawson et al. (1996)
Bidimensional Acculturation Scale for Hispanics	Marín and Gamba (1996)
Brief Acculturation Scale for Hispanics	Norris et al. (1996)
Immunization and Acculturation Scale for Mexican Americans[a]	Prislin, Suarez, Simpson, and Dyer (1998)
Cultural Health Attributions Questionnaire	Murguía et al. (2000)
Acculturation, Habits, and Interests Multicultural Scale for Adolescents	Unger et al. (2002)
Short Acculturation Scale	Wallen et al. (2002)
Abbreviated Multidimensional Acculturation Scale	Zea et al. (2003)
American Puerto Rican Acculturation Scale	Cortes et al. (2003)
Herbal Remedies by Hispanic Patients[a]	Howell et al. (2006)
Acculturation and Nutrition Needs Assessment	Fitzgerald et al. (2006)

a. Not aware of an official title.

models account for ethnic diversity and refer to the extent to which individuals move comfortably between their place of origin's culture and the adopted host society (Padilla, 1980).

Table 2 provides a detailed summary of 26 acculturation measures that focused on Hispanics. Scales ranged from 4 to 62 items ($N = 21$). Authors who used a 4-item scale did so to minimize respondent burden, particularly when language skills were not optimal. Wallen et al. (2002) and Norris Ford, and Bova (1996) commented that a short 4-item measure is simple, inexpensive, and involves minimal respondent burden. Assessment tools were most often administered by paper and pencil and, to a lesser degree, face-to-face interviews in the Spanish language (Wallen et al., 2002). Overall, internal consistencies ranged from .60 to .98. The psychometric properties of these scales are summarized in Table 2.

Three acculturation measures that are well researched and validated in the literature include the 20-item Acculturation Rating Scale for Mexican Americans (ARSMA), 12-item ARSMA-II (Cuéllar, Arnold, & Gonzalez, 1995), and the 12-item Bidimensional Acculturation Scale for Hispanics (BAS; Marín, Sabogal, Marín, Otero-Sabogal, & Perez-Stable, 1996). The ARSMA is one of the earliest measures, nearly two decades old. It assesses language used at home and with friends. Recent studies have employed the ARSMA as a supplemental acculturation measure. The utility of this measure was supported by Bauman's (2005) analysis of the reliability and validity of the ARSMA-II. The ARSMA has implications for use among non-Hispanic groups because of its ability to record contextually rich facts about ethnic culture. The BAS may be favorable because of its applicability for assessment of a wide range of minority typologies within an ethnic group. For example, ethnic groups might include Puerto Ricans, Cubans, Dominicans, and Guatemalans.

Two acculturation scales developed by Marín et al. (1987) and Marín and Gamba (1996), the Bidimensional Acculturation Scale for Hispanics and the Short Acculturation Scale for Hispanics, respectively, offered the greatest degree of applicability when measuring "language use and ethnic loyalty." Positive characteristics of these measures include (a) brevity, (b) multiple Hispanic subgroups, (c) appropriate reliability and validity, (d) ease of administration in varied settings, (e) English and Spanish versions, and (f) multidimensional domains (e.g., ethnicity, education, and generation).

The ARSMA and BAS attempt to assess the traditional aspects of Hispanic culture, such as language, cultural identify, social networks, place of origin, and media preferences, that is, the fabric of Hispanic cultural experiences. These measures have been employed to assess acculturation among minority groups in conjunction with other behavioral surveys that assess perceptions about mammography screening, healthy eating, and physical activity.

Table 2. Select Acculturation Measures Reviewed ($N = 16$)

Authors	Cultural Group	Measure	Scale Content	Reliability	Validity	Strengths	Limitations
Zea et al. (2003)	246 Latino/ Latina college students and community members	Abbreviated Multidimensional Acculturation Scale	Nativity, length of residence in the United States, language competence (United States, place of origin, and other), cultural competence (United States and place of origin); 42-item, E/S, 4-point Likert-type	IC α = .83-.97	Validated with community and college students	Sampled to enhance generalizability with use of college students and low-literate community members	Small sample size, not randomly selected, and does not represent all Latino/Latina in the United States
Cuéllar et al. (1995)	222 Mexican Americans psychiatric patients and hospital staff	Acculturation Rating Scale for Mexican Americans–I	62-Item theory-based for clinical use; selected from longer survey (Multiphasic Assessment of Cultural Constructs; measured familism, fatalism, machismo, personalismo, and folk beliefs	IC α = .81, patients α = .81, test–retest	r = .75	Internal consistency for language (expected direction for language)	No background on items, indices of socioeconomic status not measured, limited sample description, difficult to generalize to a wider audience given homogenous patient sample

(continued)

Table 2. (continued)

Authors	Cultural Group	Measure	Scale Content	Reliability	Validity	Strengths	Limitations
Cuéllar et al. (1995, 1980)	379 Mexican American undergraduate students randomly selected	Acculturation Rating Scale for Mexican Americans–II	Familism, fatalism, machismo, personalismo, and folk beliefs; 20-item, E/S, 4-point Likert-type	IC α = .81/.89; test–retest .72 (5 weeks after)	Lacking sufficient information	Shorter version can be easily formatted to English or Spanish	Measures only language items
Dawson et al. (1996)	790 Hispanic Americans; parents of elementary parochial school children	Acculturation Rating Scale for Mexican Americans–Short form	Income, education, language, media preferences, generation; 20-item, 5-point Likert-type (participants also completed the ARSMA)	IC α = .96	r = .98	Refined an existing scale for shorter more accessible measures	Lacking background on item selection, homogenous patient sample may limit generalizability
Marín and Gamba (1996)	254 Hispanic and non-Hispanic; random sample	Bidimensional Acculturation Scale for Hispanics	Language use, media preference, generation; 24-item, E/S, 4-point Likert-type (participants also completed the SASH)	IC α = .80-.90	Subscale validation for seven criteria (e.g., length of time in the United states, age at arrival in the United States, ethnic self-identification,	Theory-based psychometrics, use of multi-Latino sample	NA

(continued)

Table 2. (continued)

Authors	Cultural Group	Measure	Scale Content	Reliability	Validity	Strengths	Limitations
					generation, and correlation with the SASH)		
Norris et al. (1996)	684 Puerto Rican and Mexican Americans aged 15-24 years	Brief Acculturation Scale for Hispanics	Language use, generation; 4-item, 4-point Likert-type	IC α = .80-.90	Consistently measures validity for acculturation, generation, length of time in the United States	Can be applied to adolescents; inexpensive to administer	Measure is primarily language items
Olmedo and Padilla (1978)	924 Mexican American adolescents	Chicano Adolescent Acculturation Scale	Sociocultural demographics, nationality; 20-item English only	Test–retest (1-3 weeks) stable at .66-.89	*r* = .66 and .80	In-depth coverage of sociocultural features in scales	Spanish version not available at the time of the review
García and Lega (1979)	272 Cuban and non-Cuban	Cuban Behavioral Identity Questionnaire	Cuban idiomatic expressions, and knowledge of Cuban artists/musicians; 8-item interview, 7-point Likert-type	α = .84	*r* = .82	In-depth coverage of sociocultural features in scales; wide range of cultural typologies	Spanish version planned but not available at the time of the review
Hazuda et al. (1988)	2,505 Latinos	Hazuda Acculturation and	Language, attitudes toward family, integration, and	IC α = <.70, most subscales	Hypothesis tested; males scored higher	Thorough psychometric analysis; multiple	Did not measure key theoretical dimensions

(continued)

Table 2. (continued)

Authors	Cultural Group	Measure	Scale Content	Reliability	Validity	Strengths	Limitations
		Assimilation Scale	sex roles; 31-item, E/S	α = <.80	than females on functional integration and were less acculturated on the cultural values and sex-role attitudes subscale	criterion used to assess validity	(e.g., religion, fatalism; Yamada et al., 2006)
Burnam et al. (1987)	1,245 Mexican Americans; stratified random sample	Los Angeles Epidemiological Catchment Area	26-item, E/S	IC total α = .97	Mean level of acculturation increased monotonically across three generations	Considered sociodemographics and socioeconomic status	Lacking generalizability to a wider Latino group
Felíx-Ortiz et al. (1994)	130 Mexican American and Salvadorans; college students random sample	Latino/Latina Acculturation Scale (based on 10 scales)	Language use, generation, behavior, and values	IC α = .61-.91, individual subscale values	Evidence of content validity with significant correlation for language use, behavior, and values	Theory-based scale development	Participant age and gender not clearly defined; measure has no defined name, scale item not known
Padilla et al. (1980)	381 Mexican American; stratified	Padilla's Acculturation Scale	Language use, ethnic affiliation, perceived	IC total and both genders	Relationship between less education	Theory-based rigorous scale development,	Demographic items embedded

(continued)

Table 2. (continued)

Authors	Cultural Group	Measure	Scale Content	Reliability	Validity	Strengths	Limitations
	random sample		discrimination; 26-item; E/S	$\alpha = .98$ and $\alpha = .83$	and lower acculturation and more education and biculturalism; higher income related to higher acculturation; living in high density neighborhood related to lower acculturation	multiple dimensions scored as profile rather single score	within the measure confound the establishment of criterion validity (Yamada et al., 2006)
Marín et al. (1987)	591 Mexican Americans Puerto Ricans, Central Americans	Short Acculturation Scale for Hispanics	Language use, media, and ethnic social relations; 12-item; E/S	IC $\alpha = .92$ total sample; $\alpha = .78$-$.90$ subscales	Validity consistent with similar measures, $r = .65$	Sampled from multiple Latino subgroups, 5 language items may be used as a separate shorter version	Focus on language use items
Marín et al. (1987), Barona	371 Mexican Americans, Cubans, Puerto Ricans,	Short Acculturation Scale for Hispanic Youth	Extrafamilial language use, familial language use, social	IC $\alpha = .94$ total sample; $\alpha = .92/.85$ subscales	Validity consistent with similar measures,	Inexpensive to administer; theoretically relevant; short	Scales best used with youth who possess English proficiency;

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Table 2. (continued)

Authors	Cultural Group	Measure	Scale Content	Reliability	Validity	Strengths	Limitations
and Miller (1994)	Central Americans, Grades 5-8		relations; 12-item, 5-point Likert-type	for Hispanic and non-Hispanic, respectively	$r = .70$	scales that can be used with young adults and older adults	measure is primarily unidimensional (language items only)
Murguía et al. (2000)	340 Latinos	Cultural Health Attributions Questionnaire	24 attributions in six vignettes describing positive and negative health experiences; 12-item, E/S, 5-point Likert-type	IC $\alpha = .49$-$.78$ subscales	Relationships between the subscales and measures of acculturation provided evidence of construct validity	Large study of Hispanic populations from different regional areas to increase generalizability; focus groups used during scale development enhanced power and development of question items	The behavioral attribute scale is usually used in Western cultures; two studies were conducted, but no summation of subscales was provided

Note: E/S = English and Spanish; IC = internal consistency; SASH = Short Acculturation Scale for Hispanics; ARSMA = Acculturation Rating Scale for Mexican Americans.

Discussion and Conclusions

We have identified the following general recommendations based on this review of the literature:

- Define acculturation for the study so that this complex construct is clearly outlined and considered when researching ethnically diverse populations.
- Identify and describe Hispanic ethnicities because place of origin will influence study recruitment, generalization, future health research, and health promotion interventions.
- Use a theory-driven model, such as acculturation constructs, to understand the influence of cultural norms, values, and beliefs.
- Select a multidimensional scale that measures Hispanic diversity and beliefs that influence lifestyle behaviors.
- Record reliability and validity to ensure scientific rigor in research design.
- Intersect a multidisciplinary approach that bridges ideology, theory, and policy when designing, implementing, and evaluating culturally sensitive health interventions.

The use of acculturation as a determining factor on the health of Hispanics living in the United States is complex. The enormous influx of Hispanics into mainland United States presents a unique opportunity to assess health care utilization needs and provide delivery systems in these groups. Such studies help in understanding the health impact of poverty, low literacy, limited education, and various religious practices. Health promotion activities should consider the influence of acculturation norms, values, and beliefs as these constructs are critical to the population health approach. Furthermore, social, cultural, and economic factors can be barriers to health-seeking behaviors and, ultimately, health care utilization, prevention, and treatment plans. Recognition of the cultural influences of acculturation challenges health researchers to incorporate acculturation measures and health promotion models for future planning, social marketing, implementation, and evaluation of health initiatives. This study was a broad overview of the literature and has several limitations. Several of the studies available in the databases were conducted with Mexican immigrants and its cultural norms. Future studies of acculturation and health among Hispanics should include a broader array of important characteristics such as the influence of religion, fatalismo, and family support in addition to place of origin and language.

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Bios

Phyllis M. Wallace received her PhD in public health with a specialization in community health promotion and education in 2007 from Walden University. Currently, she is employed as a National Cancer Institute, Cancer Information Service-New England Senior Research Coordinator (SRC) at Yale University's Comprehensive

Cancer Center in New Haven, Connecticut. In her role as an SRC she is responsible for implementing the CIS-NE research agenda while collaborating with investigators to test cancer communication and education interventions to promote health behaviors. Her research focuses on employing behavior change theories and community-based participatory methods to improve health disparities among underserved and understudied populations through research, programming, and policy. She also serves as a National Society for Public Health Education Resolutions Committee Cochair with oversight for health policy development and dissemination.

Elizabeth A. Pomery received a PhD in social psychology in 2008 from Iowa State University. She is currently a postdoctoral associate at the Health, Emotion, and Behavior Laboratory at Yale University. She is currently studying the effects of message framing and tailoring, specifically in relation to messages designed to increase fruit and vegetable consumption, as well as physical activity. She is interested in research that examines health behaviors and cognitions using a social psychological theoretical framework.

Amy E. Latimer is a Queen's National Scholar and assistant professor in the School of Kinesiology and Health Studies at Queen's University in Kingston, Ontario, Canada. She completed her master's and PhD at McMaster University in Canada and went on to complete a 2-year postdoctoral fellowship in the Health, Emotion, and Behavior Lab at Yale University. Her research focuses on identifying the factors that motivate people to adopt healthy behaviors and testing motivational interventions to encourage people to make healthy lifestyle choices. In addition to her research and teaching duties, she is a founding member and the project director for Kingston Revved Up, an exercise program for community dwelling adults with mobility impairment.

Josefa L. Martinez received her MHS in international public health with a concentration in social and behavioral interventions in 2006 from Johns Hopkins University. She is currently a research associate at the Health, Emotion, and Behavior Laboratory at Yale University. She is currently involved in research examining the effectiveness of persuasive messages for eliciting health behavior change. She is conducting behavioral experiments examining the utility of tailored health materials to promote fruit and vegetable consumption and physical activity among the medically underserved across the cancer continuum. Her research interests include the design and evaluation of community-based behavior change interventions for underserved populations in cancer prevention, HIV prevention, substance abuse treatment, and mental health service provision, both nationally and internationally.

Peter Salovey is the Provost of Yale University and is the Chris Argyris Professor of Psychology. He joined the Yale faculty in 1986 after receiving an AB and MA from Stanford University and a PhD from Yale University. He has authored or edited 13 books translated into 11 languages and published more than 350 journal articles and essays, focused primarily on human emotion and health behavior. With John D. Mayer he developed a broad framework called "Emotional Intelligence," the theory that just as people have a wide range of intellectual abilities, they also have a wide range of measurable emotional skills that profoundly affect their thinking and action. He investigates, in his research on health behavior, the effectiveness of health promotion messages in persuading people to change risky behaviors relevant to cancer and HIV/AIDS.