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Promotive and Preventive Health Practice and Self-construal

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PROMOTIVE AND PREVENTIVE HEALTH PRACTICE AND SELF-CONSTRUAL

by

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ABSTRACT
POMOTIVE AND PREVENTIVE HEALTH PRACTICE AND SELF-CONSTRUAL

by

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This study investigated the role of established cultural constructs of self-identification in predicting specific motivations for participating in six physical exercise activities. Composite scores were calculated for each participant ($n = 223$) for each theoretical construct: holism (organic holism, relational holism, and whole-part attention), collective constructionist self-construal (independent vs. interdependent), and regulatory self-focus orientations (promotive vs. preventive). Hierarchical multiple regressions were performed to determine suitability of these constructs in explaining exercise behaviors. Results suggest that the constructs have some influence over individual health choices, but that this influence may be less pronounced than other phenomena in the sample. Other results show significant relationships between the cultural constructs, themselves, confirming previous assumptions regarding the existing theories. Implications for intercultural communication and healthcare are discussed.

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Promotive and Preventive Health Practice and Self-Construal

Previous studies have established the importance of cross-cultural awareness and increasing problems of ethnic health disparities in the United States. Immigration continues to increase and with it, health disparities and problems of intercultural health communication arise. Studies have noted the different ways in which culture influences worldview, as well as models of health (Hampson, Glausgrow, & Toobert, 1990). Other, more recent, studies have demonstrated some of the protective effects of maintaining heritage in immigrant families (Schwartz et al, 2011). Schwartz et al. (2011) noted that collectivist values were inversely related to risky health practices across racial/ethnic groups. This presents strong evidence that self-construal and cultural dimensions play an important role in personal health practice decision-making.

A recent study by Kim et al. (2013) sought to demonstrate promotive/preventive regulatory self-focus through an investigation of dietary practices. The study showed that Americans favored promotive dietary practices and associated these with an independent self-construal. However, Koreans, who demonstrated interdependent self-construal and preventive self-regulatory focus, showed only a weak association with preventive dietary practices.

There are several possible explanations for these results. One possibility is that the criteria for preventive and promotive dietary practices used in the study may not be reliable measures of promotion and prevention as social and self-regulatory focus orientations. It is also conceivable that independents are more actively engaged in self-

improvement and, therefore, more likely to demonstrate outward interest in healthful dietary practices in general. Kim et al. (2013) hypothesized that the influence of self-construal on health choices may simply be too tenuous for measurement, since one's health choices are a personal matter that might not be clearly related to social phenomena. Because of this uncertainty, the present study sought to measure promotive and preventive health maintenance practices in a domain other than dietary practice.

This study was performed to investigate the extent to which regulatory self-focus and other established culturally mediated theoretical constructs of identity affect individuals' specific motivations for participating in a given exercise activity. Formally demonstrating a relationship between culturally mediated constructs of self and promotive/preventive health practice remains a significant and important goal of intercultural communication research. Doing so was to provide valuable insight into the role of cultural identity beyond social interactions and societal structure, thus allowing for more meaningful implementation of intercultural communication theory in improving healthcare outcomes.

Review of Relevant Literature

Interdependence and Independence as Preventive and Promotive

Promotive and preventive regulatory focus is described by Crowe and Higgins (1997). In their study, they demonstrated that individuals primed for promotive regulatory focus sought to maximize gains with less fear of error, whereas preventive regulatory focus prompted individuals to seek to minimize errors and seek conservative gains (Crowe & Higgins, 1997). Kim et al. (2011) expanded regulatory focus theory into

intercultural communication theory by correlating independent and interdependent cultures with promotive and preventive regulatory self-focus orientations, respectively. The study sought to more strongly associate promotive and preventive regulatory focuses with promotive and preventive dietary practices, to mixed results. There was enough evidence to suggest a relationship between independent self-construal and promotive health practice, but not enough conclusive evidence to clearly connect interdependence with preventive health practice.

Kitayama, Markus, and Matsumoto have done much work developing the concepts of interdependence versus independence as culture views of the self (1995, 1997). Kitayama et al. (1997) primarily investigated the ways in which culture affects individuals' experience of success and failure in Japanese and American societies, noting that independence (as an American cultural view) favored self-improvement and primacy of self, while interdependence (in the Japanese context) engendered self-criticism and group harmony. In the context of the United States, individuals "judged that their self-esteem would increase more in the success situations than it would decrease in the failure situations" (Kitayama et al., 1997, p.1261). In contrast, failure had more influence over individuals' self-esteem than success did among Japanese participants. Furthermore, self-enhancement was associated with positive feelings in the American context, whereas self-criticism was associated with positive feelings in Japan. Thus, although interdependents were more focused on negatively valenced concepts of self, this focus was not necessarily associated with negatively valenced emotions (Kitayama et al., 1997). Self-esteem, itself, may or may not be the source of positive *feelings* in the self, depending on the cultural context.

The Kitayama et al. (1995, 1997) studies provided an intriguing framework, what they called collective constructionist, for other researchers. This model also adds a unique perspective for the consideration of intercultural communication scholars; it provides a different and important view of cultural dimensions, beyond the conventional cultural dimensions of Geert Hofstede (1991).

Holism theory: An Alternative to Individualism and Collectivism

Geert Hofstede's five cultural dimensions changed the way scholars viewed intercultural communication. This research, published in 1991, was the culmination of years of investigation among IBM employees around the world. The goal was to elucidate some of the critical differences between cultures from an anthropologic perspective. This is where the popular measurements of Individualism and Collectivism originated, and though the dimension of Individualism/Collectivism is based on limited data, it continues to be a powerful and popular concept today (Dahl, 2012). Oyserman et al. (2002) noted that existing measures of individualism were flawed, focusing on elements of uniqueness and independence; but in many other commonly used metrics (concerning competitiveness), Americans were found to be less individualistic than East Asians.

Kitayama et al.'s (1997) collective constructionist model provides one alternative to the dominant cultural dimensions theory, although it is principally concerned with decision making and psychological phenomena rather than in a broader communication context. Other, more recent, models also provide alternative interpretations of cultural differences: differences that are manifest in the communication realm, itself. Lim, Kim,

and Kim's (2011) theory of holism provides another lens through which scholars can view such cultural and societal phenomena.

Lim et al.'s (2011) construct of holism is ultimately concerned with the unit with which an individual construes their notion of identity. According to Lim et al, individualist cultures consider the fundamental unit of identity to be the individual: bound to a physical body and its individual capabilities, responsibilities, wellbeing, etc. In a holistic culture, the unit of identity extends out through the individual's network of relationships and societal obligations and connects with the capabilities and relative standing of the group. In both cases the primary concern of the individual is the self; it is the construal of the self that is different. This is fundamentally different from the classical dichotomy of Individualism/Collectivism, which assumes that in one culture, a person is concerned with individual benefit, while in the other culture, they are inherently subservient to society's will.

Collectivism comes into play in Lim et al.'s (2011) theory on a separate dimension from that of individualism and holism. Collectivism, in this sense, is not a fundamental construct of culture but the macro-level manifestation of individual behaviors within a society. Collectivism is not a self-construal: it is the collection of individuals interacting as a group. Collectivism *is* society, and the degree to which a culture is collectivist is the degree to which that culture values the will of the collective over the freedom of independent units (whether holistically or individualistically construed). This means that some East Asian cultures have been traditionally collectivist to the same extent that many western cultures have been and, in some cases, less so.

Within this construct, an extremely collectivist culture will be authoritarian or patriotic, not communal; and the antithesis of this would be anarchistic, not libertarian.

Lim et al. (2011) further advocate the division of the classical collectivism into relational and group collectivism. Relational collectivism was hypothesized to be more heavily influenced by holistic societies, yet Lim et al.'s results showed that both types of collectivism were influenced by both individualism and holism (2011). While both cultures demonstrated a capacity for both types of collectivism, they prioritized the varieties differently: holistic cultures did seem to favor relationships in society (e.g. acceptance and expectation of nepotism), while individualism was associated more with society as a unit (e.g. patriotism).

In addition, Lim et al. (2011) accounted for the differences in competitiveness by developing a new concept of personalism. They define personalism as "a social order in which achieving personal goals particularly by excelling others is seen as justifiable," while they define individualism as "a social ideology that each member of society constitutes separate and distinct entities" (Lim et al., 2011, p. 24). New metrics were designed to measure individual's personalism, as well.

Lim et al.'s theory of holism was largely successful in refining metrics with internal validity. They demonstrated significantly that students in Korea tended to construe themselves more holistically than Americans and, moreover, that "both individualistic and holistic societies foster collectivism, yet North Americans and East Asians emphasize different elements of collectivism" (Lim et al., 2011, p. 35).

The Lim et al. theory of holism was further refined in a 2013 study regarding face and self-construal (Lim & Kim, 2013). In that study, the researchers isolated three

individual constructs of holism: relational holism, organic holism, and whole-part attention. These constructs were derived from existing studies and previous research regarding east-west differences of culture and were used in an investigation of face needs in different societies.

Relational holism is designed to measure respondents' tendency to identify an individual largely in relation to individuals in associated networks and contexts (Lim et al., 2011). Relational holism is measured with items such as "There are always excellent parents behind successful children" and "You can assess a person by looking to the people he or she is associated with".

Organic holism and whole-part attention were both derived from Choi, Koo, and Choi (2007) and were used successfully as predictors of face need in the same Lim and Kim (2013) study. Organic holism measures respondents' belief in the universe functioning as a complex and integrated unit, rather than a sum of mechanical parts. Similarly, whole-part attention could be considered a mindset resulting from holistic characteristics: the degree to which individuals focus on the whole as opposed to its parts. Examples of organic holism would be "Nothing is unrelated", and "Everything in the world is intertwined in a causal relationship"; whereas items measuring whole-part attention would be "It is more important to pay attention to the whole context rather than the details" or "It is not possible to understand the parts without considering the whole picture".

All three of these constructs were demonstrated to be good indicators of holism across cultures in the Lim and Kim (2013) study. They were included in the present study

to extend the robustness of holism theory and to provide additional predictive variables to a model of culturally mediated exercise behavior motivation.

Methods

This study investigated the influence of various cultural constructs on real-world health phenomena (exercise behaviors) through motivated decision making. As such, the survey contained items designed to measure a spread of behaviors and conceptions of the self. Principle data analysis was done through many independent hierarchical multiple regressions to examine promotion and prevention as being more or less significant in predicting health practice motivations when added to existing models of self-construal.

Participants

Participants ($n = 223$) were recruited from an introductory communication course at a Midwestern United States University. Most of the participants were Caucasian (74.9%), followed by African-Americans (7.6%), Asians (7.6%), Hispanics (6.7%), Native American or Alaskan Natives (1.3%), and Pacific Islanders (.4%). 13 participants reported as "other", with biracial being the most common response. Mean age was 21.35 ($SD = 3.948$). Females comprised 59.7% of participants ($n = 148$) and males 30.2% ($n = 75$). They were contacted through their instructors and invited to participate in an anonymous online survey. Students received extra credit in exchange for their participation.

As with the preceding study by Kim et al. (2013), this investigation was less concerned with the nationality of the individuals than their demonstrated levels of regulatory self-focus and self-construal. This study presumed a relationship between

nationality, self-construal, and regulatory self-focus as demonstrated in previous studies (e.g. Markus & Kitayama, 1991, 1998; Aaker, Gardner, & Lee, 2000).

Research Design

This quantitative study utilized an online survey, composed of 119 items, some describing exercise habits as well as established items to measure the constructs of the existing theories. Respondents were first asked to indicate how often within the past six months they participated in six different exercise activities using a five-point Likert scale ranging from (1 = 1~3 times) to (5 = daily). For each activity that was selected, respondents were then presented with a list of eight reasons and were asked to rank the degree to which each reason influenced their decision to participate in the given activity. The exercises provided were "team sports", "group aerobic exercise", "weightlifting", "jogging or running", "swimming", and "yoga". An additional item of "other" was also included so that respondents might specify and report on exercises of significance that may have been omitted in the research design process. The most commonly reported activity in the "other" category was walking ($n = 14$), and was not considered significant for the analysis. The three most commonly reported activities were selected for additional analysis. These exercises were "jogging or running" ($n = 191$), "team sports" ($n = 187$), and "weightlifting" ($n = 174$).

The motivating reasons for the three exercises were subjected to Exploratory Factor Analysis (EFA) to characterize the data. Factors were extracted using Principal Component (PC) analysis, and the results were compared to a two-dimensional model presuming the reasons existing in a dichotomy of promotive and preventive motivations. Hierarchical multiple regression was performed with the individual motivation rankings

of the three most commonly selected exercise activities and a three-step model of holism, self-construal, and regulatory self-focus.

The survey also included self-assessed health status and demographics. Overall health condition was self-reported using a 5-point Likert scale (1 = poor, 5 = excellent). Questions regarding demographic information followed; including age, sex, culture of origin, education level, and annual household income. Demographic data were used as covariates to attempt to further isolate the effect of culture in health maintenance practices.

Results

Factoring Exercise Motivations

First, EFA was performed for data reduction into component factors and to interpret the ways in which they might co-vary. The initial selection of these motivating reasons involved deliberate articulation of a variety of common reasons for exercising, using language that could be categorized as promotive and preventive. It was presumed that these items might cluster according to these two categories.

Individual factor loadings for motivating reasons of the three most commonly selected activities can be found in tables 1.1 through 1.3, but there were some noteworthy patterns worth discussing here. A two-factor solution was found to adequately summarize the data. Across the three most commonly selected exercises, Eigen values exceeded one for the first three included factors. Factor 1 subsumed items inconsistently across the three exercises. Three motivating reasons consistently clustered along the positive side of the second component axis ("to avoid deterioration of overall health", "to promote cardiovascular health", "to prevent diseases") with loading scores >.5 for F2 and between

-.5 and .5 for F1. This trend was remarkably consistent across all three exercises (and, indeed, for most of the other excluded exercises). Conversely, the items of "to push my limits", "to reduce stress", and "to improve my mood" were negatively associated with F2 in a similar pattern; albeit, more loosely and with the exception of individual's reasons for weightlifting.

This pattern suggests that reasons may co-vary more specifically as either physical/physiological versus psychological more strongly than they do in response to specific phrasing associated with promotive or preventive regulatory self-focus orientations, but does not preclude an association with cultural constructs.

Table 1.1 – EFA of motivating reasons for jogging or running ($n = 191$)

Construct	Reason	F1	F2
Physical	Prevent diseases	0.7	
	Promote cardiovascular health	0.61	
	Avoid overall deterioration of health	0.61	
Psychological	Reduce stress	-0.61	
	Improve mood or have fun	-0.55	
	Push limits	-0.45	
Unknown	Maintain a certain weight		-0.83
	Meet new people		0.74

Note: Extracted using Principal Component Analysis. Varimax rotated with Kaiser Normalization for interpretation. Factor loadings < .45 omitted

Table 1.2 – EFA of motivating reasons for weightlifting ($n = 174$)

Construct	Reason	F1	F2
Physical	Promote cardiovascular health	0.71	
	Prevent disease	0.7	
	Avoid deterioration of overall health	0.65	
Psychological	Reduce stress	-0.62	
Psychological	Maintain a certain weight		-0.84
	Meet new people		0.72
Unknown	Improve mood or have fun		
	Push limits		

Note: Extracted using Principal Component Analysis. Varimax rotated with Kaiser Normalization for interpretation. Factor loadings < .45 omitted.

Table 1.3 – EFA of motivating reasons for team sports (*n* = 187)

Construct	Reason	F1	F2
Psychological	Improve mood or have fun	-0.7	
	Meet new people	-0.65	
Physical	Avoid deterioration of overall health	0.64	
	Prevent diseases	0.63	
	Promote cardiovascular health	0.6	
Unknown	Push limits		-0.8
	Maintain a certain weight		0.8
	Reduce stress		

Note: Extracted using Principal Component Analysis. Varimax rotated with Kaiser Normalization for interpretation. Factor loadings < .45 omitted.

Reliability Testing of Cultural Constructs

Reliability tests were performed on the individual cultural constructs (holism, regulatory self-focus, and self-construal) using Cronbach's alpha. Items investigating holism were divided into three categories: organic holism (α = .83), relational holism (α = .83), and whole-part attention (α = .84). Self-construal was comprised of two constructs: independence (α = .58) and interdependence (α = .73). Regulatory self-focus consisted of two constructs: promotion (α = .58) and prevention (α = .76). All constructs, excepting independent self-construal and promotive regulatory self-focus, achieved acceptable levels of reliability. Composite indices of each construct were generated for each valid respondent for use in regression.

Regression of Identity Constructs as Predictors of Regulatory Self-Focus

Two-step hierarchical multiple regression was performed with holism and self-construal as predictors of regulatory self-focus as a dependent variable. Holism was considered to be the more fundamental of these theories. Thus, organic holism, relational

holism, and whole-part attention were introduced in step 1; while independence and interdependence were introduced in step 2. Regression was performed on promotion and prevention separately (see table 2).

Promotion had statistically significant change in both steps. Holism constructs contributed to 12.6% of variation in model one, $F(3,223) = 11.89$, $p < .01$. Interdependent and independent self-construal contributed to an additional 7.1% in step 2, $F(2,221) = 10.88$, $p < .01$. In model 2, organic holism ($\beta = .15$, $p < .05$), whole-part attention ($\beta = .22$, $p < .01$), and independence ($\beta = .31$, $p < .01$) were all significant predictors of promotion.

Prevention, too, was statistically significantly predicted by both models in a similar regression. In step 1, holism contributed to 4.4% of variation, $F(3,223) = 4.46$, $p < .01$. With the addition of self-construal constructs, model 2 explained 15.7% of variation, $F(5,221) = 9.39$, $p < .01$. In model 1, relational holism demonstrated statistically significant collinearity with prevention ($\beta = .16$, $p < .05$). In model 2, interdependence had statistically significant collinearity with prevention ($\beta = .371$, $p < .01$).

Table 2 – Results of hierarchical multiple regression for cultural constructs predicting regulatory self-focus.

	Prevention		Promotion	
	ΔR^2	β	ΔR^2	β
Step 1	0.06		0.14	
Organic Holism		0.08		.22***
Relational Holism		.16*		-0.106
Whole-Part Attn.		0.12		.26***
Step 2	0.12		0.08	
Independence		-0.05		.31***
Interdependence		.37***		-0.04
Total R²	0.18		0.22	
R² adj	0.16		0.2	
N = 227				

* indicates p ≤ 0.05 while *** indicates p ≤ 0.01

Regression of cultural constructs and exercise motivations

Three-step hierarchical multiple regression was performed with each of the eight motivating reasons for each of the three most commonly selected exercises as dependent variables (tables 3.1-3.3). Step 1 introduced the holism constructs. Step 2 introduced the constructs of self-construal, and step 3 introduced the constructs of regulatory self-focus. Here, holism was the considered the most fundamental theory in the model, with self-construal contributing a layer of complexity to real world behaviors and regulatory self-focus, being the health-decision specific theory, was last to contribute to the model.

Jogging or running. Of all the regressions done for the associated motivations for jogging and running, one change was statistically significant. Jogging to maintain a certain weight experienced a statistically significant change when step 3, regulatory self-focus, was introduced. At that stage, self-focus contributed significantly to the regression model, $F(2,183) = 4.33$, $p < .01$, and model 3 accounted for 2% of the variation in jogging to maintain weight. Within model 3, comprised of all three construct domains,

promotion (β = -.23, p < .01) and independence (β = .17, p < .05) both predicted jogging

to maintain a certain weight.

Table 3.1 - Results of hierarchical multiple regression for participant reasons for participating in "jogging or running" as an exercise.

	Push limits		Reduce stress		Avoid det. health		Meet people		Improve cardio		Prevent diseases		Improve mood		Maintain weight	
	ΔR²	β	ΔR²	β	ΔR²	β	ΔR²	β	ΔR²	β	ΔR²	β	ΔR²	β	ΔR²	β
Step 1	0.02		0.02		0.02		0.03		0.03		0.01		0.01		<0.01	
Organic Holism		-0.11		-0.06		0.1		-0.02		0.08		0.05		-0.06		0.03
Relational Holism		0.05		-0.14		0.1		*0.17		-0.08		-0.02		-0.05		<0.01
Whole-Part Attn.		0.09		0.04		0.03		0.01		-0.12		-0.06		-0.02		0.04
Step 2	0.02		<0.01		0.02		<0.01		0.02		<0.01		0.01		0.01	
Independence		-0.15		-0.03		-0.01		-0.07		0.04		0.06		0.03		0.1
Interdependence		-0.06		-0.02		0.13		0.01		-0.14		-0.02		0.11		<0.01
Step 3	0.01		<0.01		0.02		0.01		0.02		0.02		0.09		0.05	
Prevention		-0.08		0.07		0.05		-0.04		0.07		0.12		-0.07		-0.06
Promotion		0.01		0.06		0.14		-0.16		0.11		0.06		0.08		-.23***
Total R²	.o5		0.03		0.05		0.05		0.06		0.02		0.03		0.06	
R² adj	0.01		-0.01		0.02		0.02		0.02		-0.01		-0.01		0.02	
N = 191																

* indicates p ≤ 0.05 while *** indicates p ≤ 0.01

Weightlifting. Four different motivating reasons saw statistically significant change within the regressions performed on weightlifting. Weightlifting to meet new people saw significant change at step 1 with the introduction of holism, F (3,170) = 3.42, $p < .05$, which accounted for 4% of the variation in the model. Organic holism had statistically significant negative collinearity with weightlifting to meet new people within this model ($\beta = -.21$, p < .01). With the introduction of regulatory self-focus in step 3, there was an additional contribution of 6.2% of variation explained. Model 3 was significant at F (2,166) = 3.2, $p < .01$ and explained 8.2% of total variance. Here, promotion had statistically significant negative collinearity with weightlifting to meet new people ($\beta = -.19$, $p < .05$).

Weightlifting to have fun or improve mood saw significant change with the introduction of step 3, regulatory self-focus, F (2,166) = 3.38, $p < .05$; contributing to 2.8% of model variation. Promotion predicted weightlifting to have fun or improve mood ($\beta = .21$, $p < .01$) with statistical significance.

There were a few other statistically significant relationships associated with weightlifting motivations, although they were not associated with statistically significant models, themselves. Weightlifting to maintain a certain weight was significantly associated with organic holism in step 1, ($\beta = .16$, $p < .05$). In step 2, weightlifting to prevent diseases had collinearity with independence, ($\beta = .18$, $p < .05$).

Table 3.2 - Results of hierarchical multiple regression for participant reasons for participating in "weightlifting" as an exercise.

	Push limits		Reduce stress		Avoid det. health		Meet people		Improve cardio		Prevent diseases		Improve mood		Maintain weight	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	0.01		<0.01		<0.01		0.06		<0.01		0.03		0.02		0.03	
Organic Holism		-0.02		-0.02		-0.04		-.21***		-0.01		0.11		<0.01		.16*
Relational Holism		0.1		0.01		-0.05		0.1		0.01		-0.12		-0.13		0.03
Whole-Part Attn.		<0.01		-0.04		-0.02		<0.01		<0.01		-0.04		0.03		0.04
Step 2	0.01		<0.01		<0.01		0.02		0.01		0.03		0.01		0.01	
Independence		-0.03		<0.01		-0.06		-0.14		-0.03		.18*		0.11		-0.03
Interdependence		-0.11		<0.01		-0.03		0.02		-0.1		-0.02		0.05		0.13
Step 3	0.01		0.02		<0.01		0.05		0.02		0.01		0.04		0.01	
Prevention		-0.05		0.05		0.07		-0.14		0.04		0.12		-0.05		0.01
Promotion		0.1		0.15		-0.05		-.19*		-0.13		-0.01		.21***		-0.1
Total R²	0.03		0.02		0.01		0.12		0.03		0.07		0.07		0.05	
R² adj	-0.01		-0.02		-0.03		0.08		-0.02		0.03		0.03		0.01	

N = 174

* indicates $p \leq 0.05$ while *** indicates $p \leq 0.01$

Team sports. Regression of cultural constructs with the motivations for participating in team sports as dependent variables provided the most statistically significant relationships of the three different exercises. Participating in team sports to push one's limits saw a statistically significant change of 7% variation explained with the introduction of regulatory self-focus in model 3, $F(7,179) = 2.97$, $p < .01$. Relational holism ($\beta = .17$, $p < .05$), independence ($\beta = -.16$, $p < .05$), and promotion ($\beta = .21$, $p < .01$) statistically significantly predicted playing team sports to push one's limits within model 3.

Variation in playing team sports to meet new people was contributed to most significantly by introducing regulatory self-focus in model 3, $F(7,179) = 1.75$, $p < .01$, explaining 2.8%. In model 3, interdependence ($\beta = .18$, $p < .05$) and prevention ($\beta = -.26$, $p < .01$) both significantly predicted playing team sports to meet new people.

Participating in team sports to promote cardiovascular health was significantly explained by model 3, introducing regulatory self-focus, $F(7,179) = 2.05$, $p < .01$, with a total of 3.8% of variation explained. Within this model, there were statistically significant predictions of playing team sports to improve cardiovascular health by interdependence ($\beta = -.23$, $p < .01$), prevention ($\beta = .17$, $p < .05$), and promotion ($\beta = .17$, $p < .05$).

Playing team sports to improve mood or have fun significantly predicted 6.6% of variation explained by model 3, introducing regulatory self-focus, $F(7,179) = 2.8$, $p < .01$. Within model 3, relational holism ($\beta = -.18$, $p < .05$), interdependence ($\beta = .17$, $p < .05$), and prevention ($\beta = -.24$, $p < .01$) predicted playing team sports to have fun or improve mood.

Playing team sports to maintain a certain weight also was explained with the introduction of regulatory self-focus in model 3, $F(7,179) = 2.36$, $p < .01$, explaining 4.9% of the variation. Within the model in step 3, both prevention ($\beta = .181$, $p < .05$) and promotion ($\beta = -.19$, $p < .05$) predicted playing team sports to maintain a certain weight with statistical significance.

Other statistically significant collinearity was found in other models of team sport motivations, as well. Participation in team sports to avoid a deterioration of overall health was associated with prevention ($\beta = .19$, $p < .05$). Playing team sports to prevent diseases was also associated with prevention ($\beta = .182$, $p < .05$). Neither model was associated with a statistically significant explanation of variance for these motivating reasons, however.

Table 3.3 - Results of hierarchical multiple regression for participant reasons for participating in "team sports" as an exercise.

	Push limits		Reduce stress		Avoid det. health		Meet people		Improve cardio		Prevent diseases		Improve mood		Maintain weight	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	0.04		<0.01		0.01		<0.01		<0.01		0.02		0.04		<0.01	
Organic Holism		-0.11		<0.01		0.02		-0.01		<0.01		0.04		0.05		0.03
Relational Holism		0.15*		-0.04		0.09		-0.05		0.01		0.11		-.19***		-0.04
Whole-Part Attn.		0.04		0.04		-0.07		0.05		-0.04		-0.12		-0.01		0.03
Step 2	0.02		<0.01		<0.01		0.01		0.03		0.01		0.01		0.03	
Independence		-0.09		-0.05		-0.04		-0.04		-0.06		0.11		0.08		0.09
Interdependence		-0.12		-0.04		0.01		0.08		-.17*		-0.04		0.08		0.14
Step 3	0.05		0.01		0.03		0.06		0.05		0.03		0.05		0.06	
Prevention		-0.13		0.1		0.19*		-.26***		.17*		.18*		-.24***		.18*
Promotion		0.21***		-0.07		-0.03		-0.03		.17*		0.02		-0.07		-.19*
Total R²	0.1		0.02		0.04		0.06		0.07		0.06		0.1		0.08	
R² adj	0.07		-0.02		<0.01		0.04		0.04		0.02		0.07		0.05	

N = 187

*indicates p ≤ 0.05 while *** indicates p ≤ 0.01*

Discussion

Cultural Constructs as Predictors of Exercise Motivation

In this study, we set out to better understand the influence of established cultural constructs on health behaviors. The expectations, building on Kim et al.'s (2013) study of promotive and preventive dietary practice, were predicated on an association of regulatory self-focus with culturally mediated conceptions of self, thereby affecting real world health choices in the form of articulated motivations for participating in a given exercise. To this end, a fairly large collection of variables was systematically analyzed.

Reliability testing demonstrated that many of the constructs selected to serve as independent variables were less reliable than in previous studies. Promotion and independence were not reliably measured in this data set (Cronbach's alpha < .7), and therefore, results derived from further analysis of these variables should be interpreted with caution. The lack of reliability in this context is likely due to too few items included for these theories in the survey itself. The question items included here have been demonstrated to have modest reliability in previous studies (e.g. Kim, et al., 2013), and so it was deemed appropriate to continue with the analysis for investigative purposes.

EFA was largely performed for the sake of data characterization, since none of the motivating reasons for exercising have been tested in any previous study. These variables were created to use uniquely promotive or preventive phrasing, based on the researchers' understanding of these concepts from other studies. While the components extracted did not immediately follow this pattern, results do not suggest that promotion and prevention have no influence over such health practice; but that these reasons may co-vary along a

spectrum largely dictated by characteristics of physical and psychological motivations, with promotive and preventive phrasing operating on a more nuanced level. Among these reasons, it was most common to see "to promote cardiovascular health", "to avoid overall deterioration of health", and "to prevent diseases", all clustering together tightly along one of the principle component axes. This pattern was consistent across the three exercises examined in detail here, as well as all exercises in the study with a minor difference in the "other" category. This suggests that these reasons are being consistently interpreted according to a similar process across participants and across a variety of exercise activities.

The research question of how culturally mediated conceptions of identity influence participation in exercise is more complex than it first appears, and the data analysis reflected this complexity. Hierarchical multiple regression was deemed to be the most appropriate way to interpret the relationships between individual motivations and theoretical concepts. After processing a total of twenty-six separate regressions, several salient patterns emerged across activities.

Cultural constructs as predictors of regulatory self-focus. First, a hierarchical regression was performed to evaluate whether or not the established constructs of culturally mediated identity continued to predict variance of regulatory self-focus in this data set. A regression was performed for promotion and prevention and found that both were predicted by the second model (using both holism and self-construal), contributing to a total of 20% of the variance for promotion and 16% for prevention with high statistical significance ($p < .01$). This was helpful to demonstrate the predictive ability of holism and self-construal in regards to regulatory self-focus.

These regressions also showed that promotion was positively predicted by independence ($\beta = .31$, $p < .01$), as well as with organic holism ($\beta = .15$, $p < .05$), and whole-part attention ($\beta = .22$, $p < .01$). This relationship between independence and promotion supports Kim et al.'s (2013) conclusions, and the premise of the current study. The relationship between promotion as predicted by organic holism and whole-part attention was less expected and interesting in its own right. This supports the idea that types of holism are not diametrically opposed to concepts of independence and self-promotion: qualities that are traditionally associated with classical individualism.

The regression for prevention showed in the full model that interdependence statistically significantly predicted prevention ($\beta = .371$, $p < .01$). This confirms that interdependence is associated with prevention as a construct, even if the effects on specific health practices prove less significant. The association seen in model 1, in which prevention was predicted by relational holism ($\beta = .16$, $p < .05$), was less pronounced in the second model; but is still worth noting. This suggests that prevention does share characteristics with relational holism. This seems consistent with the literature, since both relational holism and interdependence are characterized by a tendency to compare oneself to others in one's networks.

Holism and health behavior. Individuals with higher demonstrated levels of organic holism, the tendency to view the universe as an interconnected and complex unit, were predicted to weightlift to maintain a certain body weight ($\beta = .16$, $p < .05$) within the model. The opposite was true in the model for weightlifting to meet new people ($\beta = -.21$, $p < .01$). Individuals who scored higher in mean levels of relational holism were positively associated with playing team sports to push their own limits ($\beta = .17$, $p < .05$)

and negatively associated with playing team sports to improve their mood or have fun (β = -.18, p < .05). This seems consistent with the holism theory. An individual with higher levels of organic holism views the universe as a vast interconnected system and may be less concerned with making new friends than maintaining the functionality of their role in that system through weight training. Similarly, an individual with higher relational holism will be concerned with individuals' value in relation to others, therefore they may be continually testing their limits in a group setting to better refine their understanding of their position in relation to others. It also follows that such individuals will not view having fun as a goal of similar importance.

Interdependence and independence in exercise. Kitayama et al.'s (1997) collective constructionist theory of self-construal characterized independents as pursuing self-improvement and interdependents as being more actively self-critical. We also see some evidence of these qualities in the present study.

Independence was most pronounced as influencing jogging to maintain a certain weight (β = .17, p < .05) and weightlifting to prevent disease (β = .18, p < .05). Independents had a negative linear relationship with playing team sports to push their limits (β = -.16, p <.05), as well. This may seem contrary to the self-actualizing goals of independents, but there are several reasons why this might be the case. First, an individual with higher demonstrated independence in comparison to other constructs may be less likely to actively seek out team sports, in general, since they are more concerned with their self as a unit and not in comparison to others. Similarly, phrasing of "maintaining a certain weight" was intentionally vague to appear more focused on balance of lifestyle, but independents may interpret this item as self-improvement in the

context of weight loss. The phrasing of "to prevent disease" might also be interpreted

subjectively in the case of independents. The original item included examples in

parentheses of osteoporosis and back pain as possible diseases to be prevented.

Weightlifting for such physical therapy is common and might easily be associated with

self-improvement.

Of course, the reliability of the independence construct itself was quite low ($\alpha =$

.58), so these interpretations are particularly speculative. While it was deemed

worthwhile to investigate what relationships surrounding independence were present in

the data set, models with independence should not be viewed as definitive. Further

research would be advisable to determine the role of independence on such exercise

motivations.

An individual demonstrating higher levels of interdependence ought to be more

predisposed to self-criticism than self-improvement and more concerned with a loss of

self-esteem through failure than an increase in self-esteem through success (Kitayama et

al., 1997). This analysis suggests that interdependence was most pronounced in team

sports. Giving the similarities between self-criticism and relational holism, it would be

natural to find results significant to interdependence within team sports. Here,

interdependence predicted participating in team sports to meet new people ($\beta = .18$, $p <$

.05) and improving mood or having fun ($\beta = .17$, $p < .05$), while it predicted participation

to promote cardiovascular health ($\beta = -.23$, $p < .01$) negatively. While still a relatively

low correlation, the relationship between interdependence and promoting cardiovascular

health is more pronounced than the positive correlations in this situation and warrants

consideration. It is conceivable that an interdependent is simply not concerned with their

cardiovascular health in general, since this is may not be a common characteristic for a person to criticize about their self in relation to others. Interdependence does seem to be more concerned with failure in comparison to others, perhaps at the cost of cardiovascular health and general well-being. Failure to maintain cardiovascular health is more likely to result in death than a loss of self-esteem, so it may not be all that pronounced in an interdependent's decision to play team sports.

As for interdependents' tendency to play team sports to improve mood or meet new people, self-criticism was not necessarily associated with negative feelings in the Kitayama et al. (1997) study. Therefore, these results do not appear inconsistent with the collective constructionist theory of self-construal.

Regulatory self-focus and health practice behavior. Last, we turn to regulatory self-focus, the construct which was of primary interest for manifesting cultural influence in the domain of exercise motivations. Crowe and Higgins (1997) described promotion as a mindset in which the individual is more concerned with maximizing gains than minimizing losses, whereas prevention tends to minimize errors rather than maximize gains. As such, this study anticipated that these constructs would influence the reasons that individuals articulate for participating in given exercises.

Promotion predicted playing team sports to push one's limits ($\beta = .21$, $p < .01$) and weightlifting to have fun or improve mood ($\beta = .21$, $p < .01$), while it predicted jogging to maintain a certain weight ($\beta = -.23$, $p < .01$) and weightlifting to meet new people ($\beta = -.19$, $p < .05$) negatively. There was also a positive association of promotion with playing team sports to promote cardiovascular health ($\beta = .17$, $p < .05$) and to maintain a certain weight ($\beta = .17$, $p < .05$). Since an individual with a promotive mindset

is likely to maximize their own gains and favor self-improvement, the observation that they would also pay team sports with a desire to push their own limits is consistent with regulatory self-focus theory. It also follows logically that such an individual would derive pleasure from weightlifting, an exercise that is frequently associated with building muscle mass and improving body image.

That a promotive individual would be less concerned with maintaining a certain weight by jogging or running is consistent with our expectations that "maintaining a certain weight" would be less promotive, in that the phrasing of the reason implies less concern with maximizing gains than minimizing loss. This makes the tendency of promotive individuals to play team sports to maintain certain weight somewhat contradictory. This reason does not seem to be consistent with the idea that a promotive individual would be both less interested in team sports and unconcerned with maintaining weight, unless the attitudes of team athletes are considered independently. Many athletes do consider keeping a specific body weight to be part of their responsibility to self and team, and might conceivably be another aspect of self-improvement in that regard. This would be reasonable in consideration of promotion's association with organic holism and whole-part attention.

A promotive individual would also theoretically not be concerned with weightlifting to meet new people as much as they would pursue weightlifting for self-improvement purposes; although both were phrased in what appears to be promotive language.

The regressions performed on prevention also revealed some significant relationships. Prevention was associated with no fewer than six of the eight motivating

reasons for participating in team sports. Playing team sports to promote cardiovascular health ($\beta = .17$, $p < .05$), to maintain a certain weight ($\beta = .181$, $p < .05$), to prevent diseases ($\beta = .182$, $p < .05$), and to avoid an overall deterioration of health ($\beta = .19$, $p < .05$) were all positively associated with prevention. Conversely, playing team sports to meet new people ($\beta = -.26$, $p < .01$) and to improve mood or have fun ($\beta = -.24$, $p < .01$) were both negatively associated with the preventive regulatory self-focus.

Playing team sports to prevent disease, avoid a deterioration of health, and to promote cardiovascular health are all consistent with the premise that a preventive individual would be concerned with minimizing personal failures and maintaining balance within the body. Though, "promoting cardiovascular health" consists of promotive phrasing, it does not seem to be consistently representing promotion, but a more physical dimension as suggested by initial EFA.

The tendency of preventive individuals to participate in team sports not to meet new people nor to have fun or improve mood does suggest consistency with the literature. An individual with a high demonstrated level of prevention might not be as concerned with making new friends or improving their mood in a given instance of team sports, as neither would clearly relate to minimizing failure in such a situation.

Limitations

This study necessarily assumed that culture influences health practice. Despite personal health having largely indirect influence on one's relationships with others, the researchers presumed that self-construal does affect the decisions individuals make in selecting and pursuing health maintenance practices.

Responses were all self-reported. All the risks of self-reported data apply, accordingly. The possibilities of dishonesty or intentional disruption of survey results is unavoidable. However, given the personal and symbolic nature of self-construal, results still provide a meaningful representation of the function of culture in personal health practice and self-presentation.

This study was also limited by number and nature of participants. Access was limited to college-age participants in one region of one country. Moreover, Americans are most commonly characterized as individualistic. Similarly, we might expect many participants to be predominantly individualistic, independent, and promotive. Results cannot be considered to be universal or representative of other cultures. However, the results were robust enough to demonstrate some interactions between cultural self-construal and its more nuanced manifestations in personal behavior and health practice, nonetheless. The linear relationships shown here may not be overwhelmingly strong, but should also be considered alongside all the other various personal motivations for participating in a given exercise, or exercising at all. These multitudinous reasons governing such health decisions must also be considered in light of the individualist nature of the American participants. College aged Americans may just be more concerned with physical outcomes than they are influenced by nuanced phrasing of motivations.

Conclusions

Despite all of the above limitations, the data suggest some influence of the cultural constructs of existing literature on respondents' reported motivations of exercise behaviors. While these analyses did not definitively demonstrate the extent to which

existing cultural constructs of self actually influence health behaviors, it seems that such constructs do influence individual motivations in real world health choices. These results make several contributions to intercultural and health communication at large.

Team sports ($n = 174$) demonstrated the most statistically significant relationships with the cultural constructs. These relationships were most frequently observed within the third model, comprised of all three theories. Most patterns emerged in relational holism, interdependence, and in the regulatory self-focus constructs. Given the group nature of team sports, this seems to be an intuitive place for the predictive ability of the more group-oriented cultural constructs to manifest. The relationships observed were not inconsistent with the theories, but were far from confirmatory. The models never explained more than 6% of the variance in the data set and imply other, more pronounced, phenomena may be at work.

Factor analysis and the results of regressions suggest that reasons may be co-varying more as physical versus psychological reasons than in the predicted promotive versus preventive pattern. This provides another opportunity for investigation. If promotive and preventive self-focus is not as pronounced in these decisions, then perhaps the relationship between culture and physical or mental focus orientations would prove more meaningful and useful to scholars and health care professionals alike.

Furthermore, the results of regression show significant relationships among the established theoretical constructs of self. This finding supports the claims of previous studies (e.g. Lim & Kim, 2013; Lim et al., 2011; Kim et al., 2013). Showing that organic holism and whole-part attention can be associated with promotive regulatory focus strengthens important relationships within the holism theory, itself. This supports the idea

that holism and what are traditionally regarded as individualistic tendencies need not be arbitrarily dichotomized or juxtaposed. The relationship between holism, independence, and promotion may support the idea that holism and individualism do not operate on a diametric scale, but that an individual can possess degrees of each. The hierarchical regressions also demonstrated the predictive ability of holism as a fundamental theory, in general, and the high reliability of the three holism constructs continues to demonstrate the theory's value and utility for communication and behavioral researchers.

This study also showed that preventive and promotive regulatory focus have similar influence upon motivating reasons of exercise behavior as interdependence and independence, respectively. This lends credence to previous hypotheses that self-construal does extend into the realm of health choices. Although the mechanisms and paths of this influence remain elusive, the study shows that culture should continue to be considered a significant aspect of health communication.

Future studies can further expand on these ideas through larger, more diverse sampling and more refined question items. Refining a set of motivating reasons that are paired in sentences of similar meaning, but phrased in both promotive and preventive syntax, might prove more beneficial in isolating a causal relationship between these specific constructs and the desired dependent variables. The significant limitations of using a predominantly American sample to measure these nuanced cultural influences cannot be ignored, either. It was assumed that a gradient of culturally mediated concepts of self would exist within any cultural group of notable size. This may have been the case in the present sample, but researchers should expect such relationships to be more pronounced across nationality and cultural borders. Pursuing these changes would make

for a more definitive investigation. Even with these refinements in operationalization, the relationships between the target constructs and real world health behavior may continue to prove too elusive in comparison to other influences.

Overall, the insights gained here can be used to guide further investigation of the influence of culture on health behaviors. Culturally mediated conceptions of self cannot be ruled out as influencing individual health choices, but this relationship may be more nuanced than we assumed. There continues to be significant connections between communication-specific theory and other behavioral and psychological theories that have been developed in different discipline-specific studies. More investigation in will doubtlessly continue to benefit all of these fields.

References

Choi, I., Koo, M., & Choi, J. (2007). Individual differences in analytic versus holistic thinking. Personality and Social Psychology Bulletin, 33, 691–705.

Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision making. *Organizational Behavior and Human Decision Processes, 69,* 117-132. doi: 10.1006/obhd.1996.2675

Dahl, S. (2012). *An Overview of Intercultural Research.* Middelsex: Middlesex University Business school. Retrieved from http://stephan.dahl.at/intercultural/about_culture.html

Hampson, S. E., Glasgrow, R. E., & Toobert, D. J. (1990). Personal models of diabetes and their relations to self-care activities, *Health Psychology, 9,* 632-646. doi: 10.1037/0278-6133.9.5.632

Hofstede, G. (1991). *Cultures and organizations: Software of the mind.* London, England: McGraw-Hill.

Kim, S**.**, Lim, T., Song, H., Hawkins, J. M., Herrman, A. R., Kim, H., Ota, H., Kim, J., Kim, J, England, N., Tenzek, K., Cramer, E., Omori, K., Grimes, D., & Dilbeck, K. (2013, February). *Promotive versus preventive dietary practice and self-construal: Communicating healthful food choice.* Presented at the 85th annual convention of Western Communication Association, Reno, NV.

Kim, S**.**, Ahn, S., & Cramer, E. M. (not yet published). *Promotive versus preventive dietary practice and self-construal: communicating healthful food choice*.

Kitayama, S., Markus, H. R., & Matsumoto, H. (1995). Culture, self, and emotion. A cultural perspective on "self-conscious" emotions. In J. P. Tangney & K. W. Fischer (Eds.), *Shame, guilt, embarrassment, and pride: Empirical studies of self conscious emotions,* pp. 439-463. New York: Guilford.

Kitayama, S., Markus, H. R., Matsumoto, H., & Norasakkukit, V. (1997). Individual and collective processes in the construction of self: Self-enhancement in the United States and self-criticism in Japan. *Social Psychology, 72,* 1245-1267. doi: 10.1037/00223514.72.6.1245

Lim, T., Kim, S., & Kim, J. (2011). Holism: A missing link in individualism-collectivism research. *Journal of Intercultural Communication Research 40*(1), 21–38

Lim, T., Kim, S. (2013). *The impact of holism, cognitive relativity, culture, and gender on face need across the U.S., Korea, and Japan.* Presented at the 99th annual convention of National Communication Association, Washington, D.C.

Aaker, J. L., Gardner, W. L., & Lee, A. Y. (2000). The pleasures and pains of distinct self-construals: The role of interdependence in regulatory focus. *Journal of Personality and Social Psychology*, 78, 1122-1134. doi: 10.1037//0022-3514.78.6.1122

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98,* 224-253. doi: 10.1037/0033295X.98.2.224

Markus, H. R., & Kitayama, S. (1998). The cultural psychology of personality. *Journal of Cross-Cultural Psychology, 29*, 63-87. doi: 10.1177/0022022198291004

Oyserman, D., Coon, H. M., & Kemmelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, *128*, 3–72.

Rhee, E., Uleman, J.S., Lee, H.K., (1996). Variations in Collectivism and Individualism by Ingroup and Culture: Confirmatory Factor Analyses. *Journal of Personality and Social Psychology 7*(15)*.*

Schwartz, S.J., Weisskirch, R.S., Zamboanga, B.L., Castillo, L.G., Ham, L.S., Huynh, Q., Park, I.J.K., Donovan, R., Kim, S., Vernon, M., Davis, M.J., Cano, M.A. (2011). Dimensions of acculturation: Associations with health risk behaviors among students from immigrant families. *Journal of Counseling Psychology, 58* (1), 27-41. doi: 10.1037/a0021356