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Relationship of Health Behavior Theories with Self-Efficacy among Insufficiently Active Hypertensive African-American Women

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Abstract

Objective—While self-efficacy plays an important role in physical activity, relatively little research has examined this construct in minorities. This study identified theoretical correlates associated with self-efficacy amongst insufficiently active, hypertensive Black women.

Methods—Correlates of self-efficacy to: (1) overcoming barriers to physical activity; (2) making time for activity; and (3) “sticking with” physical activity were studied.

Results—Sixty-one women ($M = 50.48 \pm 4.2$ years) participated. We accounted for 32% of the variance in confidence in overcoming barriers. Women confident in overcoming barriers reported less worry about physical activity. The TTM processes of change were also in the model: consciousness raising, environmental reevaluation, counter conditioning, and self liberation. We accounted for 16% of the variance in “making time” self-efficacy. An aversiveness barrier (e.g., physical activity is boring, physical activity is hard work) was the dominant variable in the model. Confidence to ‘stick with’ physical activity was associated with self-reevaluation (i.e., reflection on how personal values correspond to behavior). Social support and competing demands were not associated with self-efficacy.

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Conclusions—Consistent with Social Cognitive Theory, results suggest that self-efficacy is behavior specific and each measure likely provides unique information.

Practice Implications—Interventions should be tailored to address specific self-efficacy types.

Keywords

Hypertensive; Exercise; African American Women; Self-Efficacy

1. Introduction

Physical activity is an important lifestyle modification for individuals with high blood pressure. According to the Seventh Report of the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7), the “Adoption of healthy lifestyles.... is an indispensable part of the management of those with hypertension.” (1) A focus on promoting physical activity for the management of hypertension is particularly important for Blacks. In Blacks, hypertension develops at an earlier age, is more severe, and is less likely to be controlled (2). Moreover, mortality rates also differ by race. For example, the 2004 death rate from high blood pressure for Black females was 40.6 per 100,000 compared to 14.3 per 100,000 observed in white females (3). Despite the ability of physical activity to reduce blood pressure (4–12), the majority of Americans(13), especially Black women, do not meet physical activity recommendations(14–22). Consistent with the Healthy People 2010 objective of “increasing the proportion of adults with high blood pressure who are taking action to help control their blood pressure,” (23) this study engaged relatively sedentary, hypertensive women who expressed an interest in increasing their level of physical activity.

To better understand physical activity behavior, researchers have examined theory-based determinants of physical activity. (24) Self-efficacy, a central component of Social Cognitive Theory (SCT), is a strong predictor of physical activity. Self-efficacy is the belief in one’s ability to organize and execute the actions required to produce desired outcomes. (25) In the general population, self-efficacy is both a correlate and predictor of physical activity behavior; higher levels of self-efficacy are associated with more physical activity (26–33). Studies of self-efficacy in Black women are also positive; Black women with higher levels of self-efficacy are more physically active(19; 34–36). Little is known, however, on the factors associated with self-efficacy in this population. One study that examined the correlates of self-efficacy in African-American women concluded that interventions should incorporate strategies that would decrease the extent to which factors, such as work and child care, interfered with being physically active (i.e., decreasing social role constraint) (37). Studies amongst older, hypertensive African Americans indicate that this population reports confidence in performing behaviors related to physical activity, (38) may be more confident in their ability to be physically active for a certain duration of time (i.e., when walking) versus walking a certain distance (39) and that self efficacy is associated with physical activity (39; 40).

While many studies use a general measure of self-efficacy, according to SCT, self-efficacy is situation and behavior specific. In other words, it is important to assess and understand self-efficacy across the range of self-regulatory behaviors associated with physical activity. In one study for example, two measures, barrier efficacy and scheduling efficacy, independently predicted behavioral intention to exercise. Moreover, only one measure, scheduling efficacy, predicted exercise attendance(26). In a study amongst youth, the strength of the relationship between self-efficacy and physical activity varied by type of self-

efficacy assessed (41). These studies suggest that different types of self-efficacy can contribute independent information to our understanding of physical activity.

Recognizing the importance of specific types of self-efficacy, researchers have developed skill specific instruments. Marcus and colleagues (42) developed a measure to assess confidence in overcoming barriers to physical activity. Across racial/ethnic groups, barriers to physical activity are well documented.(43–53). In a study of primarily African American participants with diabetes, patients who reported a physical activity barrier also reported fewer days of exercise and physical activity for shorter durations (54). In another study of which 30% of the sample were Black women, self-efficacy for overcoming physical activity barriers was associated with future walking behavior (55) Self-efficacy's ability to promote activity in the face of barriers highlights its importance as a determinant of activity and argues for the inclusion of a barrier specific measure of self-efficacy in research studies.

Sallis and colleagues also developed an important measure of self-efficacy (56). This measure makes three important contributions to the field. First, it requires participants to report how confident they were in being able to (1) motivate themselves; (2) *consistently* engage in the healthy behavior and (3) do so for a period of at least 6 months. This multidimensional measure recognizes the complexity of physical activity behavior and incorporates many important aspects (i.e., motivation, practice, and persistence). This scale includes two subscales: self-efficacy for 'making time' for exercise and self-efficacy for "sticking with it." Lack of time for physical activity is consistently identified as a barrier to exercise. For example, in a population based survey of women across racial and ethnic groups (57) lack of time and caregiving duties were the most frequently reported barriers. The Sallis measure thus provides an assessment of self-efficacy for a construct (i.e., making time for physical activity) that is consistently reported as a significant barrier to physical activity.

The construct 'sticking with it' reflects the importance of being able to self-regulate behavior across challenging situations and therefore, may speak to relapse prevention. Understanding how to help individuals maintain physical activity is a persistent challenge among researchers. In one study for example, only 18% of African American women maintained their active lifestyle for more than 6 months after becoming physically active. (43) Given the public health goal to help individuals adopt a physically active lifestyle, understanding an individual's confidence in 'sticking' with physical activity across challenging situations and being able to do so across *time*, is a worthwhile goal.

The purpose of the present study was to further advance our understanding of the correlates of physical activity related self-efficacy in Black women. We engaged midlife Black women as a population at risk for inactivity(14) and at risk for multiple cardiovascular disease risk factors (58–60). Expanding upon previous research that focused on a single global measure of self-efficacy, we included three specific measures of self-efficacy; we included the scale by Marcus that assesses efficacy to overcome barriers and the two scales by Sallis previously described. Understanding the complexity of physical activity behavior, we examined the relationship between self-efficacy within the context of theoretical variables important to physical activity including social support (61; 62), barriers (48; 63), a component of the Health Belief Model (64), and the Transtheoretical Model (TTM) cognitive and behavioral processes of change (24; 65–69).

2. Methods

2.1. Sample

Eligible participants were hypertensive Black women aged 40–65 years who presented to participate in a randomized trial to increase their level of physical activity. Women were recruited through two methods: (1) advertisement in the University's newspaper and (2) invitations mailed to Black, female, University employees within the target age range. Mailing lists were obtained from the Human Resources department. All advertisements specifically targeted women with hypertension. During a telephone screening we administered the Physical Activity Stages of Change Questionnaire (69) to assess stage of readiness to be physically active. The questionnaire assessed a woman's level of moderate-intensity physical activity. Women were included if they were not regularly physically active (i.e., did not have a total of at least 30 minutes of physical activity at least 5 days per week)(70). Prior to study enrollment, women obtained medical clearance from their personal physician. This study was approved by the University Institutional Review Board.

Measures

2.2. Measures

2.2.1. Self-efficacy: As described in the introduction, our study had three self-efficacy outcome measures.

Exercise self-efficacy Using a 5-item measure we measured self-efficacy to be physically active despite barriers. The measure used in this study was developed by Marcus and colleagues (1992) (42). The questionnaire was developed to reflect making time for exercise, resisting relapse, and negative affect as areas that had been previously reported to be important for physical activity behavior. Using a 5-point Likert scale (i.e. 1 = Not At All Confident to 5 = Extremely Confident), participants rate their confidence to overcoming barriers (i.e., when tired, when in a bad mood, when the individual feels they do not have time, when on vacation, and when it is raining/snowing). The scale has good internal consistency, 0.82. This measure and a slightly modified version, have been included in a variety of studies including randomized controlled trials (e.g., Project STRIDE, Diabetes Prevention Program).(71; 72)

“Making time” self-efficacy and “sticking with it” self-efficacy were measured with the 12-item Self-efficacy for Exercise Behaviors Scale (73) revised from the original version.(56). Sallis and colleagues first interviewed individuals regarding situations and behaviors (71) associated with exercise. Potential scale items were generated and subjected to a principal components analysis to yield the two scales included in this measure. The questionnaire instructions, “Whether you exercise or not, please rate how confident you are that you could really motivate yourself to do things like these consistently, for at least 6 months” was applied to a range of behaviors (e.g., exercise when social obligations are very time consuming; set aside time for a physical activity program, stick to your exercise program when you have household chores to attend to etc.). For each item, participants used a 5-point Likert scale to indicate their level of confidence (i.e. 1 = I know I cannot to 5 = I know I can). The scale has yielded an internal consistency score of .95 (34) and had an adequate test-retest reliability of .68 (56) Various versions of the scale have been used in studies with Black women (34; 74–76).

2.2.2. Social support: The Social Support for Exercise Behavior scale (77) used previously in studies with middle-aged women (78) was used to assess level of support. In this study we omitted the 3-item optional scale, leaving 10 items. Using a 5-point Likert scale participants reported the frequency that family and friends supported their physical activity in the

previous three months, with 1 = None to 5 = Very Often. This scale yields two social support scores: (1) Friend Participation and (2) Family Participation. The scale has good reliability ($\alpha = .86$) (77). This scale (74) and a slightly modified version of this questionnaire was used previously with Black and other minority women (62).

2.2.3. Barriers to physical activity: Barriers to physical activity were assessed with a 26-item measure(79). Respondents used a 5-point Likert scale to rate items from 0 = Never to 4 = Very Often to indicate the degree to which items interfered with being physically active. In a previous study (79) , 18 of the items were submitted to a factor analysis to yield four factors: (1) Aversiveness of Activity (e.g., physical activity is boring); (2) Inconvenience (e.g., no convenient place); (3) Worries (e.g., I am too overweight); and (4) Competing Demands (e.g., family demands, lack of money). A score for each factor was calculated and these factor scores were used in the analysis (79)

2.2.4. Processes of Change: Behavioral and cognitive strategies used to support a physically active lifestyle were assessed with the 40-item Processes of Change Questionnaire (PCQ)(69). For each questionnaire item participants rated the extent to which they used various strategies. Ratings for each strategy range from 0 – 4, with 0 = Never to 4 = Repeatedly. The scale yields scores for five behavioral processes and five cognitive processes. The subscales have good reliability (α s = .62 – .89)(69).

In this study we focused on the cognitive and behavioral processes particularly relevant for initiating physical activity (65–68). Three cognitive processes, consciousness raising (e.g., increase one's knowledge, gain understanding, and obtain feedback about the benefits of physical activity and how to become more physically active), environmental reevaluation (e.g., assessments of how physical activity affects one's social environment –friends, family etc. and how one can/cannot serve as a role model for others), and self-reevaluation (e.g., reflect on personal values and how that corresponds to behavior) and three behavioral processes, counter conditioning (e.g., substitute sedentary behaviors with more active behaviors), reinforcement management (e.g., reward oneself for being physically active, changing the contingencies for the behavior), and self-liberation (e.g., belief in the ability to change and commitment and recommitment to change) were included.

2.2.5. Demographic and Clinical Variables: We also collected demographic variables (e.g., age, education, marital status) and we measured their weight and height in our clinic setting.

2.3. Data analyses

Statistical analyses were performed using SAS Version 9.0. Simple frequencies and means were used to summarize demographic characteristics of the sample. To examine the incremental effects of several groupings of independent variables we ran hierarchical linear models for each self-efficacy outcome (“exercise self efficacy,” “making time” self-efficacy, and “sticking with it” self-efficacy.) To avoid the potential for model overspecification we first examined the association of each proposed variable with self-efficacy through bivariate analyses and then formed six blocks based on logical groupings of variables of the significantly associated variables. Demographic variables formed the first block (age, education level, and marital status). We treated education level as an ordinal variable ranging from 1 (eighth grade or less) to 8 (doctoral degree) and dichotomized marital status (married or lives with a partner vs. all other categories). The second block consisted of body mass index (BMI), which was considered a physiologic factor. The third block of variables examined included the four barrier factors (aversiveness, inconvenience, worries, and competing demands). Block four included the cognitive processes consciousness raising,

environmental reevaluation and self-reevaluation. Block five, included the behavioral processes: counter conditioning, reinforcement management, and self-liberation. The final block, block six, included two measures of social support, friends and family. Once a parsimonious set of blocks was obtained the incremental effect of adding new blocks was assessed by calculating the change in the multiple coefficient of determination (R^2) and the associated p-value. Our ordering of the theoretically-based blocks for entry into the model was influenced by several factors. Given the influence of barriers in physical activity reported in the literature, we were interested in ascertaining whether processes of change would account for a significant amount of variance after the variance already accounted for by barriers was considered. Thus, we first entered barriers then entered the processes of change. Our decision to enter cognitive processes of change before the behavioral processes is consistent with TTM. As noted by Lewis and colleagues, (80) cognitive changes in an individual emerge earlier and perhaps before the appearance of behavioral strategies. Thus, the ordering of the processes of change represented the proposed natural history of how processes unfold across stages. Finally, social support was entered last to determine if external resources contributed to self-efficacy once all other variables were entered in the model. Because we did not have an a priori justification for the ordering of the variables *within* each of the blocks, we were most interested in the Type III sums of squares.

3. Results

3.1. Descriptive statistics

Sixty-one women participated in the study. At the time of our baseline assessment, 92% of the participants were in precontemplation, contemplation, or preparation (88.52% in contemplation). The mean age of the sample was 50.48 ± 4.2 years. Additional demographics are included in Table 1.

3.2. Hierarchical modeling

As expected the blocks as initially planned caused the model to be overspecified. Several of the variables in bivariate analyses proved to be nonsignificant for all three self-efficacy outcomes including age, education, marital status, BMI, competing demands (barrier factor), reinforcement management (behavioral process), social support from friends, and social support from family (results not shown). For “sticking with it” self-efficacy, self-reevaluation was the only variable found to be significant ($b = 0.2468$, $p=0.03$) (results not shown).

The most parsimonious model for both “exercise self-efficacy” and “making time” self-efficacy consisted of three blocks: barriers, cognitive processes, and behavioral processes. The full set of variables accounted for 32% of the variance in “exercise self-efficacy” (Table 2, $p=0.001$). Further examination of the “exercise self-efficacy” model revealed that a statistically significant increase in the R^2 value (from 14% to 30%) occurred with the introduction of the cognitive processes block in Model 2 ($p=0.003$), specifically because of the environmental reevaluation variable. The addition of behavioral processes in Model 3 did not significantly increase the amount of explained variability ($p=0.45$). The model for “making time” self-efficacy accounted for 16% of the variance (Table 3, $p=0.045$). In this model, the R^2 value did increase with successive blocks, but these increases were not statistically significant. The barrier of aversiveness was the dominant factor in this model.

4. Discussion and Conclusion

4.1. Discussion

This study makes an important contribution to the field in its examination of the theoretical correlates for three measures of self-efficacy in midlife, insufficiently active, hypertensive Black women. In our study, the correlates of self-efficacy varied by type of self-efficacy. This finding is similar to the work of Ryan and colleagues in youth (41) that indicated that different types of self-efficacy were associated with different types of physical activity (e.g., moderate versus vigorous). Our findings highlight the importance of including specific and diverse measures of self-efficacy in physical activity studies as each likely contributes different information to understanding the complexity of physical activity behavior. Our study also suggests that we may understand the correlates associated with some types of self-efficacy better than others. In this study we accounted for 32% of the variance in “exercise self-efficacy” and 16% of the variance in “making time” self-efficacy. While we identified several correlates of “exercise self-efficacy” and “making time” self-efficacy, only one variable was associated with “sticking with it” self-efficacy. Researchers are challenged to better understand the factors associated with the many dimensions of self-efficacy so that we can better inform intervention research aimed at increasing self-efficacy in this population.

In the present study women who had higher levels of “exercise self-efficacy” (i.e., were more confident in their ability to overcome barriers to physical activity) were less likely to report that worries related to physical activity prevented them from being physically active. Almost half of the variance of “exercise self-efficacy” was accounted for by the two barrier factors (inconvenience and worry).

More important than barriers however, were the TTM cognitive strategies. Women who indicated greater “exercise self-efficacy” reported more frequent efforts to consider how their activity level influenced their social environment (i.e., environmental reevaluation). Items on this scale were: “I feel I would be a better role model for others if I exercised regularly,” “I wonder how my inactivity affects those people who are close to me,” “I realize that I might be able to influence others to be healthier if I would exercise more” and “Some of my close friends might exercise more if I would.” These findings suggest that interventions that highlight the broad benefits of physical activity (e.g., impact on social network, family etc.) and not only individual benefits (e.g. one’s own improved health) may be especially effective in helping middle-aged, hypertensive Black women increase their “exercise self-efficacy.” Behavioral strategies were also included in the model but after inclusion of all variables in the model, the additional variance accounted for by behavioral strategies was not significant.

The analysis modeling “making time” self-efficacy was also significant but only accounted for 16% of the variance in this outcome. Women who reported that the aversiveness of physical activity interfered with their ability to be physically active also reported less confidence in ‘making time’ for activity. Items on the aversiveness scale were: “physical activity is boring,” “lack of interest in physical activity,” “I do not enjoy physical activity,” and “physical activity is hard work.” Our finding highlights the role of emotion and affect in physical activity behaviors and adds to previous research in which enjoyment of physical activity was positively correlated with physical activity behavior in African American women (81). Of surprise however, is the relative lack of time researchers devote to exploring activity options and/or reconstructing activities that women do engage in to be more enjoyable. Aversiveness remained significant after inclusion of the cognitive factors, but became only borderline significant when the behavioral variable was included in the model.

The finding that barriers related to the inconvenience of physical activity and competing demands was not associated with confidence in “making time” for physical activity suggests that confidence in ‘making time’ is influenced to a greater degree by the affective appraisal of the activity a woman is making time for. This finding may shed light on studies in which researchers were still challenged with low participation rates in a physical activity program despite the removal of barriers (e.g., cost, inconvenience, scheduling around other important activities)(76). Women who find activity more aversive may not make the time to be active. This hypothesis is supported by a study in which individuals who had more positive affect associated with physical activity (i.e., asked how they felt when they thought about physical activity) also had higher levels of physical activity (82). This finding persisted even after controlling for cognitive beliefs (e.g., attitudes, barriers, benefits etc.).

The constructs not associated with self-efficacy in our study, such as social support, are also important to consider. Studies suggest an important role for social support in minority women. In one study, women with low levels of social support were more likely to be sedentary compared to those who had higher levels of social support (although level of social support was not related to whether or not a participant was a regular exerciser) (62) and in another study, baseline social support among African American women predicted changes in physical activity after participation in an intervention (76). In our study we expected that individuals with higher levels of social support would have higher levels of self-efficacy. For example, social support could help one overcome barriers to physical activity. Self-efficacy could mediate the relation between social support and physical activity as reported in previous studies (83; 84). Our study however, did not find a significant association between either friend or family support and any of our measures of self-efficacy. Clarifying the role of social support among Black women as it relates to physical activity and self-efficacy will help us better target our interventions.

Our study did have limitations. First, the cross-sectional design does not allow us to determine a cause and effect relationship. Prospective and experimental research designs will be an important next step. A second limitation was the omission of additional variables that may influence self-efficacy. For example, including a more detailed assessment of environmental infrastructure that supports or does not support physical activity may influence a woman’s confidence to be active. We also did not assess constructs associated with SCT posited to increase self-efficacy (e.g., the extent to which women performed the behavior and received feedback) (85). Our small sample size also calls for our findings to be replicated with larger groups.

4.2. Conclusion

In a recent paper, Sharma and colleagues concluded “physical activity interventions for Black women must build on the constructs of self-efficacy and friends’ social support” (86). The present study is an important first step in examining the relationship between self-efficacy and theoretical constructs from health behavior theories among midlife, insufficiently active, hypertensive, Black women. Our results suggest that there is value in understanding self-efficacy in the context of other leading health theories. However, our study results also suggest that we need to explore a broader range of variables to better identify the correlates and predictors of self-efficacy, as for some models, the variance accounted for was relatively small. We were most challenged to identify correlates of self-efficacy for the consistent performance of behaviors across time (i.e., for at least 6 months). Future research should focus on identifying the factors that improve our understanding of how to promote self-efficacy across time.

4.3. Practice implications

Our study has several strengths and important public health implications. First, the unique predictive models associated with “exercise self-efficacy,” “making time” self-efficacy, and “sticking with it” self-efficacy remind public health practitioners that self-efficacy is behavior specific and thus, research and intervention programs should assess different self-efficacy types. Interventions can then be tailored to address the specific type of self-efficacy that needs to be enhanced. Second, our results suggest that researchers and practitioners should continue to explore innovative ways to help women build long-term confidence in their ability to motivate themselves to engage in behaviors supportive of an active lifestyle. Interestingly, in our study the only variable associated with “sticking with it” self-efficacy was self-reevaluation, the behavior of evaluating one’s values in relation to one’s behavior. This relationship suggests that commitment to a physically active lifestyle and overcoming challenges may be more successful if physical activity is aligned with an individual’s value system. Third, the “aversiveness” of physical activity, for some women, should not be underestimated. Despite the many health benefits associated with physical activity and efforts to reduce physical activity barriers, women may not have the confidence to make time for activity if they see it as unpleasant or unrewarding.

Finally, it is important to consider study findings in the context of theoretical frameworks. For our participants, the majority of whom were in the contemplation stage of change, facilitating their transition to higher stages of change is an important goal and may be supported by increasing the use of cognitive processes, specifically evaluating how one’s behavior affects others or how one’s values are aligned with behavior. Alternatively, a general SCT intervention may be as effective in increasing motivational readiness to be physically active and supporting progression along the stages of change. The latter hypothesis is supported by a study that compared the effectiveness of a TTM stage matched physical activity intervention to a SCT intervention (87). In this study, both interventions successfully and equally facilitated the movement of participants across the stages of change. Perhaps most interesting, is that the two groups did not differ in physical activity level or in their use of behavioral or cognitive processes of change, suggesting that SCT interventions may influence TTM processes of change. In light of the associations between these theories, future studies should determine how best to optimize the combined use of these theories in physical activity interventions.

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Table 1

Demographic and Clinical Characteristics of Study Sample

Variable	Mean $\pm$ SD
BMI	35.97 $\pm$ 6.88
Systolic Blood Pressure	133.28 $\pm$ 16.41
Diastolic Blood Pressure	78.21 $\pm$ 8.96
	(%)
Marital Status ^a	
Married	45
Not married	55
Education Level ^a	
9–11 th grade	2
High school	9
Some college	38
College/technical school	30
Bachelor's Degree	14
Masters/Doctoral	2
Employment Status ^b	
Full time	98
Part time	2

^a = 56 participants provided data

^b = 55 participants provided data

Table 2

Association of Exercise Self-efficacy and Explanatory Factors by Hierarchical Regression

Block	Variable Name	Model 1		Model 2		Model 3	
		Parameter estimate	p-value	Parameter estimate	p-value	Parameter estimate	p-value
1	Barrier—Inconvenience	-0.14	0.41	-0.17	0.29	-0.13	0.39
	Barrier—Worries	-0.52	0.03	-0.58	0.009	-0.58	0.01
	Cognitive Processes—Consciousness Raising	--	--	0.10	0.39	0.06	0.70
2	Cognitive Processes—Environmental reevaluation	--	--	0.33	0.02	0.29	0.05
	Behavioral Processes—Counter Conditioning	--	--	--	--	0.17	0.23
3	Behavioral Processes—Self-Liberation	--	--	--	--	-0.003	0.99
R ² Change		--	--	0.16		0.02	
Partial F Statistic		--	--	6.55		0.82	
R ² Change P-value		--	--	0.003		0.45	
Total R ²		0.14		0.30		0.32	
Overall F Statistic		4.57		6.00		4.24	
Overall P-value		0.014		0.0004		0.0014	

Table 3
Association of 'Making Time' Self-efficacy Exercise and Explanatory Factors by Hierarchical Regression

Block	Variable Name	Model 1		Model 2		Model 3	
		Parameter estimate	p-value	Parameter estimate	p-value	Parameter estimate	p-value
1	Barrier—Aversiveness	-0.28	0.036	-0.26	0.049	-0.25	0.06
	Cognitive Processes—Consciousness Raising	--	--	0.08	0.40	0.05	0.69
2	Cognitive Processes—Self reevaluation	--	--	0.17	0.15	0.15	0.24
3	Behavioral Processes—Self-Liberation	--	--	--	--	0.08	0.61
R ² Change		--	--	0.08			0.01
Partial F Statistic		--	--	2.722			0.27
R ² Change P-value		--	--	0.11			0.61
Total R ²		0.07		0.15			0.16
Overall F Statistic		4.60		3.44			2.61
Overall P-value		0.0362		0.0227			0.0449