

The Theory of Planned Behavior and Ethnically Diverse Community College Students and Their Intentions to Exercise: A Preliminary Analysis

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Abstract: Although regular exercise is the key to a healthy lifestyle, college students are insufficiently active to maintain good health. Motivations to exercise may vary among different ethnic groups. The results of a pilot study using the Theory of Planned Behavior (Gordon, 2008) showed that ethnically diverse college students can rate their beliefs (behavioral, social, and cognitive) pertaining to physical activity.

There is a nationwide obesity epidemic in America. According to the National Health and Nutrition Examination Survey (U.S. Department of Health and Human Services, 2007), two-thirds of U. S. adults are either overweight or obese. Data obtained from the 2005 National Health Interview Survey showed that 62% of U.S. adults aged 18 years and older are not engaging in the recommended amount of leisure time physical activity as reported by the Centers for Disease Control (CDC, 2007). Negative effects of lack of exercise and fitness have been documented for college students (e.g., high cholesterol, a major determinant for future cardiovascular disease). For example, Spencer (2002) found that 29% of college students had undesirably high total cholesterol levels, 10% had unfavorably low high-density lipoprotein cholesterol, 10% had high systolic blood pressure, and 11% had high diastolic blood pressure. College students are at increased risk of morbidity and mortality due to the detrimental effects of a sedentary lifestyle. Researchers (e.g., Buckworth & Nigg, 2004) show that the majority of college students are inactive and that lifetime habits are established in the college years. Wellness courses can be designed to address identified attitudes, motivations, and actions toward a physically active lifestyle among a culturally diverse student population, which will lead to a higher quality of life.

Although many researchers have studied factors that motivate college students to participate in physical activities, research related to the possible influence of ethnic diversity of college students and their motivation to engage in fitness activities is limited. The two-fold purpose of the study is to identify beliefs that contribute to and promote physical activity for college students, such as how culture and ethnicity affect attitude towards physical activity participation, and to determine if intention to exercise varies among different ethnic groups of college students. In this paper, only the results of a preliminary analysis will be reported. The purpose is to describe (a) questionnaire development through a written beliefs elicitation survey and (b) cognitive response analysis through a group interview to confirm that the college students from ethnically diverse backgrounds understand the terminology and questions.

Theoretical Framework

The central hypothesis that will be used to investigate these factors is the Theory of Planned Behavior (TPB) developed by Ajzen (1991). Ajzen's theory suggests that the TPB can predict intention to exercise and possibly identify differences in behavioral, normative, and control beliefs. These differences can be useful to educators when designing successful wellness programs and exercise interventions. According to the theory, an individual's intention to

Gordon, M. (2008). The theory of planned behavior and ethnically diverse community college students and their intentions to exercise: A preliminary analysis. In M. S. Plakhotnik & S. M. Nielsen (Eds.), *Proceedings of the Seventh Annual College of Education Research Conference: Urban and International Education Section* (pp. 52-59). Miami: Florida International University.

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perform a particular behavior is the major determinant of actual behavior (Ajzen, 1998). Intentions are an indicator of an individual's effort to try to accomplish a goal. As individuals form their intentions, three factors are considered. The first is a favorable or unfavorable attitude towards the behavior; the second is the perceived social pressure to perform the behavior; and lastly is the individuals' perception of control over the behavior. In general, a more favorable attitude, higher social pressure, and higher perception of control will result in the greater intention to perform the identified behavior (Ajzen, 1998). Many researchers, such as Rhodes, Jones, Courneya (2002) and others, concur that Ajzen's TPB has emerged as one of the foremost social cognitive frameworks for understanding exercise motivation and behavior.

Review of Literature

The literature review focuses on the areas of physical activity and exercise among college students, the differences that have been identified among ethnic groups, and the TPB (Ajzen, 1991). The researcher conducted a search for articles published in the years 2000-2007 in peer-reviewed journals and indexed in the following databases: Omni file Full Text Mega-Wilson Web, Pro Quest, Cambridge Scientific Abstracts, Educational Resources Information Clearinghouse, Psych Info, Physical Education Index, Medline, and Journal Storage. Keywords included Theory of Planned Behavior, exercise, physical activity, ethnicity, culture, and college student. In the first section, the researcher critiqued quantitative studies related to physical activity and the college student (e.g., Buckworth & Nigg, 2004), which revealed that students are not sufficiently physically active to maintain good health. The interventions designed to increase the physical activity of college students included one qualitative study (Clemmens, Engler, & Chinn, 2004) and five quantitative studies (e.g., DeVahl, King, & Williamson, 2005). The researcher critiqued this body of evidence, finding that students can be influenced by purposeful physical activity interventions. In the next section, the researcher critiqued studies related to ethnicity and physical activity, finding only one study that focused on ethnicity, physical activity and pertained to college students (Suminski & Petosa, 2002). Thus, studies were included related to high school female students (Fahlman, Hall, & Lock, 2006) and older female adults (Heesch, Brown, & Blanton, 2000; Henderson & Ainsworth, 2000). This body of research showed differences among various ethnic groups in perceptions about physical activity as well as participation. In the last section, the researcher critiqued studies where the TPB was applied to exercise activities (e.g., Rhodes et al., 2002). Identifying and subsequently targeting salient beliefs can increase measures of the intention to exercise. TPB research has revealed that attitude and intention are statistically significant contributors to exercise behavior. The research also showed that differences do exist among the various ethnic groups.

Research Design

In the full study, a quantitative, correlation design was used. The dependent variables were the constructs of the TPB (Ajzen, 1998), which combine to form a measure of the intention to exercise. TPB constructs include behavioral beliefs, normative beliefs, and cognitive beliefs. Sources of data included the TPB questionnaire (TPBQ) and the Godin Leisure Time Questionnaire (GLTQ). The TPBQ (a beliefs elicitation survey) was developed according to the process described by Ajzen and Fishbein (1980), Ajzen (2004), and (Francis et al., 2004). The development of a TPBQ required both quantitative and qualitative research methods. This study received exempt status and approval from the Institutional Review Board at Florida International University and approval for data collection by the Vice President for Academia Affairs at the community college.

Development of the Instrument and Affirmation of Clarity of Items

The draft questionnaire was developed in the fall of 2006 when students who were enrolled in wellness courses were asked to complete a nine item open-ended questionnaire (Appendix) to determine beliefs about intention to be physically active for at least 30 minutes per day in the coming month. The questionnaire was modeled after a similar one given as an example by Ajzen (2002). Completion of the draft questionnaire was voluntary. The response rate was 100%. From the questionnaire, common beliefs were categorized and counted for frequency by the researcher and checked for accuracy by another researcher. From this list of salient beliefs concerning intention, social norms, perceived behavioral control, and attitudes about exercise, a rough draft of the TPBQ was developed.

To establish content validity, Ajzen (2004) recommends an interview process to further uncover beliefs, attitudes, social norms, and perceived behavioral control towards physical activity and cultural expectations or differences that may not have surfaced with the earlier elicitation of beliefs (e.g., from the review of the literature). This interview process is also used to affirm the clarity and phraseology of the survey instrument. Students who completed wellness courses within the previous two semesters were recruited to be interviewed in a group (Appendix). The group included five students that represented various cultures. Participants were solicited via an email sent to their college email addresses.

To develop the TPBQ items related to behavioral beliefs, the researcher selected the most frequently named advantages and disadvantages of being physically active for at least 30 minutes each day in the coming month from the belief elicitation surveys and group interviews. Thirty minutes of physical activity or exercise per day was chosen for four reasons: simplicity, data from prior studies, the 2005 U.S. Dietary Guidelines for Americans, and the American College of Sports Medicine and American Heart Association's guidelines (Haskell et al., 2007). To develop the questionnaire items related to normative beliefs, the researcher selected the most frequently named people or groups of people who would approve or disapprove of the students being physically active at least 30 minutes each day in the coming month. To develop the questionnaire items related to control beliefs, the researcher selected the most frequently named barriers to or facilitating factors that make it easier or more difficult to be physically active for at least 30 minutes each day in the coming month. The final topic for discussion solicited their opinions of the influence of their culture or ethnicity on their attitude, social support, and perceived control over whether they are physically active for at least 30 minutes each day.

The Godin Leisure-Time Exercise Questionnaire (GLTQ) was utilized to assess leisure time physical activity. In contrast to other questionnaires, which were lengthy and difficult for the subject to complete accurately, the GLTQ has been validated and found reliable using community research populations (Godin & Shephard, 1985). In the GLTQ, the respondents considered the frequency of physical activity in which they have engaged during the previous week. In response to the three statements about physical activity intensity, the respondents wrote the number of times per week they exercised at that level for more than 15 minutes. The fourth and final question asked how often the individual engages in regular activity long enough to work up a sweat (often, sometimes, or never/rarely). The researcher later calculated a total leisure activity score.

Pilot Study

The researcher contacted former students from eight sections of wellness classes via campus e-mail ($N = 200$). They were invited to participate in the focus group interview. The

purpose was of the meeting was (a) to elicit behavioral, normative, and control beliefs and (b) confirm that the definitions and questionnaire items were understood by the participants. The researcher received eight replies from former students who expressed an interest in participating. This focus group convened on the campus of the college in a private room where there would be no interruptions. Five students attended the focus group interview. The session began with the students signing consents to participate in the group interview. The purpose of the meeting was explained as well as the potential benefits of their responses. Students reviewed the written definitions of exercise and physical activity as worded on the questionnaire. The researcher asked the students (a) to add anything to the definitions and (b) to comment on the language and phraseology of the definitions. The researcher then posed each of the open ended interview questions (Appendix) so as to elicit their behavioral, normative, and control beliefs related to exercise and physical activity. The researcher asked students to complete the draft TPBQ which took approximately five minutes. The researcher asked students if they detected any ambiguous or confusing terms. Finally, the researcher asked students how their culture viewed or influenced their physical activity or exercise habits. Prior to completing the interview, the researcher obtained permission to contact them via email if any further questions arose and if they would complete a revised version of the questionnaire. The focus group interview was terminated; the researcher thanked each student and provided a \$10.00 gift card to Barnes and Noble Bookstore as a token of appreciation.

The student group interview ($N=5$) served as a method to conduct a cognitive response analysis. The volunteer students represented the larger student population at the college. The demographic profile of the pilot group participants included three males and two females. One participant was 18-20 years of age and four ≥ 30 years of age. Two students were in their second year of college and three reported > 2 years of college. Student status included three part time students and two full time students. Three students reported being unemployed, one employed 30-40 hours per week and one employed > 40 hours per week. Race or ethnicity and gender were reported as two White females, one White male, one Black (non-Hispanic) male, and one Hispanic male. Socio-economic status was reported as one participant earning $< \$19,000/\text{yr}$, three earning $\$20\text{-}39,000/\text{yr}$, and one reporting $> \$60,000/\text{yr}$ as spousal income because this individual was unemployed. All participants reported having access to exercise equipment.

Results

This section outlines the results from the survey group and from the pilot group.

Survey Group

The results from the beliefs elicitation survey ($N = 38$) revealed that cardiovascular health, fitness level, a healthy weight, and emotional well-being were cited most frequently as advantages to physical activity. The survey also revealed that friends, family members, and the mother are influential in the decision to be physically active. Work, school responsibilities, and lack of time are perceived as effecting control over whether they will be physically active.

Pilot Group

Overall, participants confirmed the previous beliefs elicitation survey in terms of advantages, disadvantages, and barriers to be physically active. They suggested some minor formatting changes but overall confirmed the phraseology. After reviewing the suggestions for revisions offered by the focus group, the researcher slightly revised the questionnaire because the suggested changes were minimal. For example, the students remarked that they were confused about the request to “fill in the blank” next to the item, “How do you identify your race or ethnicity?” They recommended eliminating the blank line. One student felt that the scaling

should be consistent, showing all of the positive responses on the right and the polar opposites on the left. The scaling was not changed because Ajzen (2002) suggests counterbalancing positive and negative endpoints to counteract possible response sets. One student asked that “since their mother was deceased, how they should answer those questions?” Because “mother” had been a popular referent for motivation to exercise reported by previous wellness students, it was not changed in the final questionnaire. None of the participants remarked that the questionnaire was difficult, confusing, or time consuming. None of the participants had difficulty interpreting the GLTQ items correctly.

In response to the question, “How does culture influence your physical activity habits”, responses varied. For example, the Black (non-Hispanic) male student noted, “Exercise is not promoted in my country but soccer is played.” He remarked that schools he had attended focus on “mental fitness.” He remembers a professor who would sweep the roofs on break to relieve mental exhaustion. He called it “vascular.” Comments from the Hispanic male student focused on how he grew up in a “basketball family” and was pushed to exercise. He stated that as a young adult, he later rebelled and stopped all physical activity and gained 50 pounds. He is now exercising and worries if he will ever return to his original shape. The White male student commented that in his culture, there exist the extreme opposites of those who are very fit and those who are unfit. He proudly reported how he got his father to begin exercising and how it has reduced his father’s stress level. He also reports that his mother finds sweating undesirable, but he personally finds it appealing. The White females commented on the inactivity of children, suggesting that schools should take a more active role in promoting physical activity. They also mentioned that efforts to promote physical activity should target couples.

The researcher sent the revised draft TPBQ as an attachment to each focus group participant approximately 2 weeks after the first group meeting to reveal the final product based upon their input and invited to complete it for the second time. Four of the five returned the revised questionnaire.

Conclusions

In summary, the researcher conducted a preliminary analysis of the TPBQ, which incorporated items from the GLTQ as well as demographic information. The pilot study participants confirmed that the definitions and questionnaire items were understandable. Only minor changes were made in the preparation of the final questionnaire. The results of the preliminary analysis are significant for two reasons. First, the participants reflected the ethnic diversity of the student population on college campuses and much of the prior research has been conducted on samples dominated by White students. Second, the pilot study process (a beliefs elicitation survey and cognitive response analysis) verified that college students do understand the value of increased exercise. The health benefits of a physically active lifestyle in decreasing future risk of obesity, diabetes, hypertension, and stroke has been well-established in the literature.

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Appendix

Nine item open-ended questions used to draft TPBQ: A beliefs elicitation survey

1. What do you believe are the advantages of being physically active for at least 30 minutes each day in the coming month?
2. Are there any individuals or groups who would approve of you being physically active at least 30 minutes each day in the coming month?
3. What factors or circumstances would enable you to be physically active for at least 30 minutes each day in the coming month?
4. What do you believe are the disadvantages of being physically active for at least 30 minutes each day in the coming month?
5. Are there any individuals or groups who would disapprove of you being physically active at least 30 minutes each day in the coming month?
6. What factors or circumstances would make it difficult or impossible for you to be physically active for at least 30 minutes each day in the coming month?
7. Is there anything else you associate with your being physically active for at least 30 minutes each day in the coming month?
8. Are there any other individuals or groups who come to mind when you think about walking on a treadmill for at least 30 minutes each day in the coming month?
9. Are there any other issues that come to mind when you think about the difficulty of being physically active for at least 30 minutes each day in the coming month?

Focus Group Interview Protocol: A Cognitive Response Analysis of the TPBQ Survey

Logistics

1. Solicit former wellness students via college email system.
2. Coordinate convenient date, time, and location to meet.
3. Obtain signed consents to participate in group interview.
4. Begin audio-taping.
5. Assure participants of confidentiality prior to beginning interview and explain that they may decline participation at any time.
6. Introduce participants to each other (*to obtain a voice recognition check for the transcriber*) and explain the purpose of the meeting.
7. Explain potential benefits of their responses.
8. *Distribute written* definitions of exercise and physical activity as they will be used interchangeably in the discussion.

Interview Questions

1. Questions to determine behavioral beliefs:

(a) What do you believe are the advantages of being physically active for at least 30 minutes each day in the coming month?

(b) What do you believe are the disadvantages of being physically active for at least 30 minutes each day in the coming month?

(c) Is there anything else you associate with your being physically active for at least 30 minutes each day in the coming month?

2. Questions to determine normative beliefs:

(a) Are there any individuals or groups who would approve of you being physically active at least 30 minutes each day in the coming month?

(b) Are there any individuals or groups who would disapprove of you being physically active at least 30 minutes each day in the coming month?

(c) Are there any other individuals or groups who come to mind when you think about being physically active for at least 30 minutes each day in the coming month?

3. Questions to generate a list of control beliefs:

(a) What factors or circumstances would enable you to be physically active for at least 30 minutes each day in the coming month?

(b) What factors or circumstances would make it difficult or impossible for you to be physically active for at least 30 minutes each day in the coming month?

(c) Are there any other issues that come to mind when you think about the difficulty of being physically active for at least 30 minutes each day in the coming month?

4. After a thorough discussion of the proposed open-ended questions, participants will be asked if they have any further questions, comments, or suggestions for the questionnaire.

Follow Up Pilot Test of Questionnaire Instrument

1. Participants will be told that a study instrument will be developed based upon their responses and they will be asked to later complete the questionnaire and return it. The purpose of the pilot study is to confirm clarity and accuracy of the questionnaire.

2. Participants will be reminded of the researcher's contact information.

3. Thank the participants for their assistance.

4. Stop audio-taping.

5. Say goodbye!