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The role of schools and physical education curriculum in the promotion of physical activity (PA) has been widely recognized in recent years and schools have been identified as an appropriate setting for the promotion of PA (Cale, 2000). Physical educators have the unique role of working with children in a physically active environment, and have been called upon to work towards increasing PA behaviors of children outside of the school-based environment. Thus, this study was designed to examine the factors associated with out-of-school PA promotion by physical educators. The purpose of the first study was to identify the predictive factors associated with physical educators assigning PA homework. The results revealed that the most important factors associated with physical educators' assigning homework behavior were (a) knowledge of how to assign PA homework; (b) teachers' attitude

toward PA homework; and (c) expectations from significant others including; school administrators, parents, other teachers, and people of importance to the physical educator. The second study tested a theoretical model of physical educators' intention and behavior promoting out-of school PA using a framework of the theory of planned behavior (TPB). The results of the study indicated that the importance of (a) knowledge of available PA programs for students; (b) physical educators' attitude toward physical activity promotion; and (c) subjective norm. It is recommended that physical educators have knowledge of local community-based PA programs and extracurricular-based PA programs. Physical educators also need to have an understanding of how to age-appropriate PA homework to their students. Given the importance of subjective norm including support from school administrators, parents, other teachers, and people of importance to the physical educator, it is recommended that physical educators work towards gaining support from these people regarding PA promotion.

Practices of Physical Educators Regarding Out-of-School Physical Activity Promotion

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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes the release of my thesis to any reader upon request.

Stephen Thom, Author

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CONTRIBUTION OF AUTHORS

Dr. Joonkoo Yun was involved with the conceptualization of the study and research design, recruitment of participants, data analysis, interpretation of results, and reviewing of the thesis.

Dr. Heidi Wegis was involved with recruitment of participants.

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Chapter 1: General Introduction

Regular participation in Physical Activity (PA) is an important component of a healthy lifestyle (Ringuet & Trost, 2001). Adequate participation in PA during childhood and adolescence may be critical in the prevention of obesity and chronic disease later in life (Wallhead & Buckworth, 2004). Knowing this information, there are growing concerns for the lack of PA children engage in on a daily basis and the health risks associated with inactivity. Current PA recommendations from the Centers for Disease Control (CDC) for children 6-17 years of age are for 60 or more accumulated minutes of PA per day, with a majority of the time coming from activities that focus on aerobic activities such as running or biking (CDC, 2009). Play 60® (NFL, 2011), has been a heavily marketed mass media campaign throughout the United States aligning with CDC recommendations for 60 minutes per day of PA.

Research documenting PA among adolescents has been well established. In a nationally representative sample from the CDC focusing on PA for adolescents 9-13 years old, it was found that 61.5% of children do not participate in any organized PA during their nonschool hours and that 22.6% do not engage in any free-time PA (Duke, Huhman & Heitzler, 2003). A 2009 Youth Risk Behavior Surveillance System reported similar findings (CDC, 2009). Twenty-three percent of high school students did not participate in at least 60 minutes of any kind of PA that increased their heart rate and made them breathe hard on at least 1 day during the 7 days prior to filling out

the survey. Physical inactivity was found in 30% of females compared to 17% of males. Although 33% of high school students in the sample attended physical education class daily, many of these students are not receiving adequate amounts of Moderate to Vigorous Physical Activity during physical education.

This lack of PA is also a concern for children with disabilities (Rimmer, 2008). Children with disabilities can be at an even greater risk of sedentary living because of the presence of a disability leading to deterioration of physical functioning (Sit, McManus, McKenzie, & Lian, 2007). Data from the 2005 Youth Risk Behavior Survey (YBS) indicated the proportion of students who engaged in sedentary activities (i.e., playing video/computer games 3+ hours/school day) was higher in those with physical disabilities (26.6%) compared to those without disabilities (20.4%) (Rimmer, 2008). Although the health benefits of PA are similar in individuals with and without disabilities, PA disparities exist, which can lead to an increase in the prevalence of secondary conditions.

Physical education teachers have the opportunity to make a substantial impact on the lives of their students both with and without disabilities regarding PA. Teachers are typically regarded as highly relevant and credible models for children and have the power to profoundly affect children's attitudes and behaviors (Cardinal, 2000). Although qualified physical education teachers are equipped with the skills necessary to provide appropriate lesson plans and instructional strategies to increase PA during physical education time, in many schools physical education class has been reduced or even eliminated (Annes, Westcott, Faigenbaum, & Unruh, 2005), making it

even more difficult for children to reach the CDC recommendations for PA during the school day. Therefore, there is a significant need for students to be physically active not only inside, buy also outside of school to ensure adequate opportunities for the benefits associated with regular PA. This issue has also been recognized by the National Association for Sport and Physical Education (NASPE, 2004). NASPE defines six standards of a physically educated person with Standard 3- focusing on regular participation in PA (NASPE, 2006).

Due to the lack of children's PA, there is a need for physical education teachers to move beyond their traditional roles of providing appropriate classroom instruction, to also promoting PA beyond the school-based setting to assist students with the accumulation of PA. Baranowski et al (1997) argues that physical education teachers should encourage students to be physically active outside of school and be able to refer students to community-based sports and recreation programs. The CDC (2009) also recommends physical educators promote PA by assigning PA homework. However, a majority of parents do not view physical education as an appropriate setting for providing homework (Tannehill, Romar, O'Sullivan, England, & Rosenberg, 1994). In addition, initial physical education teacher education standards as well as the advanced physical education standards do not emphasize strategies of promoting out-of-school PA as one of the important competences of a physical educator (NASPE, 2006). Furthermore, the behaviors of physical educators regarding out-of-school PA promotion are unknown.

The primary purpose of this study was to evaluate the factors influencing physical educators to promote out-of-school PA, under the framework of the Theory of Planned Behavior (TPB; Ajzen, 1991).

Research Questions

1. What are the factors influencing physical educators assigning PA homework?

2. What are the factors influencing physical educators' intention to promote out-of-school PA?

Delimitations

1. Data were collected at two professional conferences located in the western portion of the United States.

2. Data are from physical educators attending professional conferences.

3. Behaviors associated with out-of-school PA promotion by physical educators were limited to (a) community-based PA, (b) extracurricular-based PA, and (c) PA homework.

Assumptions

1. All respondents answered truthfully to all portions of the questionnaire.

2. The three most common behaviors associated with promoting out-of-school PA are:(a) community-based PA, (b) extracurricular-based PA, and (c) PA homework.

Limitations

The study was limited to the following:

1. The use of a biased sample of physical educators attending professional conferences, who may not necessarily represent the physical education profession as a whole.

Operational Definitions

1. Out-of-School Physical Activity: PA performed by students outside of school hours.
2. Community-Based Physical Activity: PA that takes place in a community-based setting such as programs through the Boys and Girls Club, YMCA, Special Olympics, community-based sport involvement, and local gym memberships.
3. Extracurricular-Based Physical Activity: PA that takes place at a school, but occurs either before or after school hours. Examples of extracurricular-based PA are school-based sports teams, PA clubs, and intramurals.

4. Physical Activity Homework: Homework assigned by the physical educator to students encouraging them to be physically active outside of school.

CHAPTER 2

Factors Affecting Physical Educators Assigning Physical Activity Homework

Stephen Thom and Joonkoo Yun

ABSTRACT

The purpose of this study was to examine the factors affecting physical educators assigning physical activity homework. A self-report questionnaire was developed and individually distributed to physical educators attending professional conferences in the western portion of the United States. A variety of potential factors were tested in relation to the effect on individual's behavior to assign physical activity homework: personal exercise behavior, knowledge of current physical activity recommendations, knowledge of how to assign physical activity homework, attitude, subjective norm, and perceived behavioral control. The most significant predictors of behavior were knowledge of how to assign PA homework, attitude, and subjective norm. Correlations and a multiple regression were utilized to analyze these factors. It may be necessary to instill physical education teacher education students with the skills necessary to assign physical activity homework, and about the importance of attitude and subjective norm related to assigning physical activity homework.

Factors Affecting Physical Educators Assigning Physical Activity Homework

Adequate participation in Physical Activity (PA) during childhood and adolescence may be critical in the prevention of obesity and chronic disease later in life (Wallhead & Buckworth, 2004). The Centers for Disease Control (CDC) and the National Association for Sport and Physical Education (NASPE) recommend 60 or more accumulated minutes of PA per day for children 6-17 years of age (CDC, 2009; NASPE, 2004). Despite these recommendations, there is a growing concern for the amount of PA children engage in on a daily basis and the health risks associated with inactivity. In a nationally representative sample from the CDC focusing on PA for adolescents 9-13 years old, it was found that 61.5% of children do not participate in any organized PA during their nonschool hours and that 22.6% do not engage in any free-time PA (Duke, Huhman & Heitzler, 2003).

Schools provide one of the few opportunities to address the full range of individuals in a population, and a last chance to assess, at no extra cost, a captive audience (Cale, 2000). Although school is viewed as an appropriate setting to influence PA behavior, time allotted for PA within school tend to be limited. With the sedentary design of schools, and priority for meeting cognitive demands, physical educators are encouraged to influence PA behaviors of their students outside of the school-based environment (Lambdin & Erwin, 2007).

Assigning out-of-school PA homework has been a recommended strategy for increasing PA and a role to be adopted by physical educators (Gabbei & Hamrick,

2001; Lambin & Erwin, 2007; Smith & Claxton, 2003; Stezler 2005;). The use of homework in physical education is justified when one considers the amount of time required for sufficient fitness and motor-skill development (Mitchell, Barton & Stanne, 2000). Assigning active homework has the added potential to develop and increase PA levels of students and to address the psychomotor domain of learning (Smith & Claxton, 2003). In addition, encouraging students to be physically active by assigning PA homework aligns with NASPE Standard Three stating that "students participate regularly in PA" and NASPE Standard Four stating that "students achieve and maintain health enhancing levels of physical fitness," (NASPE, 2004).

Although literature supports the notion of assigning PA homework to assist with increasing PA, there is little evidence about the behavior of physical educators assigning PA homework and their attitudes regarding homework. Mitchell et al. (2000) examined the self-reported attitudes toward and uses of homework by high school physical educators participating in district-wide in-service trainings geared towards meeting state mandates in physical education. It was found that 80% of the participants in the study believed in assigning some form of PA homework, but only 50% actually assigned PA homework. Although this study provides important descriptive information about teacher's beliefs and behaviors regarding homework in physical education class, the sample was limited to only 54 physical educators within the south eastern portion of the United States who teach high school physical education. In addition, the author's did not examine the potential factors influencing physical educators assigning PA homework.

Given the large number of students physical educators interact with on a daily basis, understanding the potential factors affecting physical educators assigning PA homework is important for the profession. Knowledge of these factors will provide an evidence-based practice on how to improve the current practices of physical educators and the factors associated with their practices. Therefore, the purpose of this study was to examine the factors affecting physical educators assigning PA homework.

Method

Participants

A total 140 physical educators (19% males (n=27), and 61% females (n=86) participated in the study (19% did not identify their gender). Participants were recruited at two professional physical education conferences in the western portion of the United States. A total 275 surveys were individually distributed to the potential participants and 140 surveys were returned for a response rate of (51%). Characteristics of the sample are presented in Table 2.1.

Instrument

For this study, a new survey was developed to examine the potential factors for physical education teachers' assigning PA homework. The survey included (a) demographic information, (b) physical educators' behavior assigning PA homework, and (c) potential factors affecting physical educators assigning PA homework including; personal PA behavior, knowledge, attitude, subjective norms, and perceived control toward assigning PA homework.

The potential factors influencing physical educators to assign PA homework was identified based on research within the health-care professions as well as the theory of planned behavior (TPB; Ajzen, 1991). Several studies in the healthcare field indicated that healthcare professional's knowledge of appropriate PA recommendations (McKenna, Henderson, & Baic, 2004, Petrella & Wight, 2000), his/her own PA participation (Walsh, Swangard, Davis, & McPhee, 1999) and self efficacy (McKenna, Naylor, & McDowell, 1998) were common barriers to PA promotion. TPB is a very powerful psychological framework in explaining one's behavior, and provides a framework for understanding the effects of factors such as the relationships between attitude toward the behavior, normative beliefs, perceived behavioral control, and intention (Ajzen, 1991). Studies utilizing the TPB have focused on a wide variety of factors related to health promotion from predicting attitudes towards teaching physical education (Faulkner & Reeves, 2000) to predicting PA in adolescents (Martin, Oliver, & McCaughtry, 2007). TPB items were created from Francis et al. (2004) referring to direct measures of attitude, subjective norms, and perceived behavioral control, and were modified to reflect the study's population and behavior of interest (physical educators, assigning PA homework).

Demographic questions in the survey focus on (a) current age, (b) gender, (c) educational level, (d) years teaching, (e) grades teaching, (f) minutes per week students receive physical education, (g) typical class size, and (h) Title 1 designation.

The behavior/practice of physical educators assigning out-of-school PA homework was measured. A five-point scale was used to determine scores pertaining

to the statement ranging from *1 Not at All to 5 Very much*. An example item is, "I have encouraged my students to be active by assigning regular physical activity homework."

Items measuring knowledge of PA homework were divided into two aspects: (a) knowledge of how to assign PA homework and (b) knowledge of PA recommendations as recommended by the CDC and NASPE. A five point scale was used ranging from *1 Don't Know to 5 Know Well*. (a) I know how to assign physical activity homework to my students, (b) I know age appropriate physical activity for my students (c) I know CDC recommendations for my students, and (d) I know NASPE recommendations for my students. The sum of the responses was divided by the total number of statements served as the measure for *knowledge of recommendations* (α= .75, 2 items), and *knowledge of programs* (α= .36, 2 items).

Attitude is an indication of a person's favor towards performing the desired behavior (Ajzen 2006). This construct is measured using bipolar opposites (i.e. pairs of opposites) which are evaluative (e.g. *good-bad*) to measure attitude (Francis et al, 2004). Bipolar opposites are *(a) good/bad, (b) harmful/beneficial, (c) pleasant/unpleasant, (d) useful/worthless*, and were measured using a 5 point scale ranging from *Strongly Disagree, Disagree, Neutral, Agree,* and*, Strongly Agree.* A fifth attitude question was added using a 5 point scale ranging from *Strongly Disagree, Disagree, Neutral, Agree,* and, *Strongly Agree*: (a) I am doing something positive for my students by assigning regular physical activity homework. The sum of the responses was divided by the total number of statements (α= .87, 5 items).

Subjective norms are a person's own estimate of the social pressures to perform or not perform the target behavior (Francis et al 2004). A 5 point scale ranging from *Strongly Disagree, Disagree, Neutral, Agree,* and, *Strongly Agree* was used to measure subjective norm: (a) school administrator (b) parents/guardians (c) other teachers, and (d) people of importance, were the targeted figures related to subjective norm. The sum of the responses was divided by the total number of statements served as the measure for *subjective norm* (α= .78, 4 items).

Perceived behavioral control is the extent to which a person feels able to perform the behavior (Francis et al 2000). Two aspects focusing on perceived behavioral control are self efficacy (confidence to perform the behavior) and controllability (whether performing the behavior is up to them). A 5 point scale ranging from *Strongly Disagree, Disagree, Neutral, Agree,* and, *Strongly Agree* was used to measure perceived behavioral control: (a) I am confident I can encourage my students to be active by assigning regular physical activity homework, (b) Encouraging my students to be active by assigning regular physical activity homework is beyond my control. The sum of the responses was divided by the total number of statements served as the measure for *perceived control* (α= -.54, 2 items).

The Godin Leisure-Time Exercise Questionnaire (GLTEQ; Godin & Sheppard, 1985) is a self report measure that was used to determine the participants' quantity of physical activity behavior. The GLTEQ was scored as followed: (9 x strenuous) + (5 x moderate) + (3 x light) = Total METs.

Table 2.1 Demographics of Physical Educators (n=140)

Characteristics	N	%
General Ed. PE Teacher	33	24%
Adapted PE Teacher	93	66%
Education	-	-
Bachelors Degree	44	31%
Masters Degree	84	60%
Doctoral Degree	7	5%
Other Degree	4	3%
Years Teaching	-	-
0-5	37	26%
6-10	23	16%
11-15	15	11%
16-20	25	18%
21+	48	29%
Age	-	-
22-28	23	16%
29-35	25	18%
36-41	16	11%
42-48	16	11%
49+	56	40%
Grades Teaching	-	-
K-5	113	81%
6-8	87	62%
9-12	62	44%

Note- A majority of participants teach multiple grade levels

Data Analysis

To identify potential factors effecting physical educators assigning PA homework, a multiple regression was employed. The dependent variable was behavior and independent variables were (a) personal PA exercise behavior, (b) knowledge of how to assign PA homework, (c) knowledge of PA recommendations (d) attitude, (e) subjective norm, and (f) perceived control. In addition, participants were characterized using descriptive statistics (i.e., means, standard deviations, and percentages) and correlations were calculated for all variables using SPSS 16.0 (2008).

Results

Descriptive statistics for variables in the instrument can be found in Table 2.2. Participants mean scores were relatively positive; knowledge of how to assign PA homework mean was 4.21, attitude 3.85, knowledge of PA recommendations 3.75, and subjective norm 3.06. Mean score for participant behavior was the lowest mean of 2.42, followed by perceived behavioral control 2.89. Personal PA behavior as measured by the GLTEQ was 48.66 METs (SD= 23.92).

Table 2.2 Descriptive Statistics

Subscale	M	SD
Physical Activity in METS	48.66	23.92
Behavior	2.42	1.17
Knowledge of Programs	4.21	.64
Knowledge of Recommendations	3.75	1.16
Attitude	3.85	.77
Subjective Norm	3.06	.72
Perceived Control	2.89	.62

Correlation coefficients between each factor found that three of the potential six factors were significantly associated with assigning PA homework were significant at the 0.01 level (2-tailed). The significant factors associated with assigning PA homework were (a) knowledge of how to assign PA homework (r=.38, p<.01), (b) attitude (r=.40, p<.01), and (c) subjective norm (r= .38, p<.01). The zero order correlation matrix among factors can be found in Table 2.3.

Table 2.3 Correlations Matrix Among Variables

Variable	1	2	3	4	5	6	7
1 HW	-	.13	.38**	.12	.40**	.04	.38**
2 PAL		-	.04	.15	.24**	.12	.04
3 KP			-	.35**	.27**	.07	.22**
4 KR				-	.12	.06	.03
5 AT					-	.17	.43**
6 PC						-	.19*
7 SN							-

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Note. HW= Homework Behavior; PAL= Physical Activity Level; KP= Knowledge of how to assign PA HW; KR= Knowledge of Recommendations Average; AT= Attitude Average; PC= Perceived Control Average; SN= Subjective Norm Average;

A multiple regression analysis was computed (n=140) to examine which factors were significant predictors of physical educators' behavior of assigning PA homework. All predictor variables were entered simultaneously, and the overall regression model was significant F (6, 126) = 8.59 (p <.001). All of the predictors accounted for 29% of physical educators' homework assigning behavior, R= .54. As expected, knowledge of how to assign PA was the most important variable in

predicting the dependent variable (β =.50, t =3.25, p<.001). Also, the results of the regression revealed that physical education teachers attitude (β =.34, t =2.56, p<.01), as well as support from parents, teachers, school administrators, and people of importance to the physical educators (β =.39, t =2.81, p<.01) became important predictors of physical educators' behavior. Although literature in the health-care professions suggested that personal PA behavior influences PA behavior, the results of the current study suggest that physical education teacher's personal PA behavior did not influence PA homework assignments. The results of the regression analysis are shown in Table 2.4.

Table 2.4 Multiple Regression Results With Behavior Assigning Homework as Dependent Variable

Variable	B	Beta	t	SE
PAL	0.01	.07	0.91	.004
KP	0.50*	.27	3.25	.154
KR	-.02	-.01	-.21	.082
AT	0.34*	.23	2.56	.133
PC	-.14	-.08	-.97	.145
SN	0.39*	.24	2.81	.138

Discussion

Assigning out-of-school PA homework has been a recommended strategy for increasing PA that should be adopted by physical educators (Lambin & Erwin, 2007; Stezler 2005; Smith & Claxton, 2003; Gabbei & Hamrick, 2001). This study found that the most important factors affecting physical educators assigning out-of-school

PA homework were (a) knowledge of how to assign PA homework, (b) individual attitude towards assigning PA homework, and (c) support from school administrators, colleagues, parents/guardians of students, and people of importance to the physical educator.

It is important to note that the most predicting factor was knowledge of how to assign PA homework. This finding indicates that it is critical for pre-service physical education teacher education (PETE) students to have an understanding of how to assign age-appropriate PA to their students. This discovery is consistent with the literature from the health-care field, finding lack of physician knowledge of appropriate PA to be a common barrier to PA promotion (McKenna, Henderson, & Baic, 2004, Petrella & Wight, 2000). PA homework has the potential to have a positive effect on student's out-of-school PA behavior, and instilling PETE candidates with the skills necessary to assign PA homework, prepares them to assign PA homework. However, current NASPE teaching standards (NASPE, 2004) do not including knowing how to assign PA homework as one of the performance criteria, although a small amount of literature is advocating the importance of this role (Lambin & Erwin, 2007; Stezler 2005; Smith & Claxton, 2003; Gabbei & Hamrick, 2001). If physical education teachers are not well equipped to assign age appropriate physical activity homework, then it would be a difficult task to accomplish. Empowering pre-service PETE students to assign PA homework is a realistic step towards incorporating this behavior into future professionals in the field of physical education.

While PETE students can be instructed through curriculum modifications focusing on how to assign PA homework, effort also need to made towards educating current physical educators on how to assign PA homework. At both local and state level physical education conferences, it is recommended that professionals be trained on how to assign PA homework. Mitchell et al, (2000) describes four main components for assigning PA homework related to physical education units. (1) Homework needs to be relevant to class; (2) students are motivated and understand what has been assigned; (3) parents support the value of assigned PA homework; and (4) students are held accountable for their homework.

This study also found that school administrators, parents/guardians, other teachers, and people of importance to the physical educator (subjective norm) were also an important predictor of behavior related to assigning PA homework. Given the dynamics of a school, all of these subjective norm components have the ability to positively or negatively affect curriculum ideas within multiple subject areas. It is vital for physical educators to educate other school personnel about the importance of physical education, and the potential benefits associated with PA homework. This information could be presented at staff meetings throughout the school year to educate individuals about the importance of PA and PA homework, and also function as a collaboration effort and cross-curricular approach to physical education. Incorporating cross-curricular homework ideas can include simple additions such as using pedometers or heart rate monitors and recording information, mathematically

checking percentages of heart rate obtained during exercise or focusing on different types of aerobic and anaerobic activities.

Gaining support from parents regarding PA homework is also a pivotal factor related to physical educators' behavior. Prior research found that parents did not view physical education as an appropriate setting for providing homework (Tannehill, Romar, O'Sullivan, England, & Rosenberg, 1994). Although this study found negative parental perceptions regarding PA homework, the changing trends in obesity as a national health concern since this study was published could influence parent's current attitudes toward PA homework. Parents also need to be educated on the importance of their children being active outside of the school-based environment and the potential effects that a novel task such as PA homework can have on their child's academic success and lifelong health. Back-to-school nights, open houses and newsletters home to parents are potential outlets for physical educators to introduce their curriculum and views of PA homework to parents. Using cross-curricular educational approaches discussed earlier also may have the potential to display to parents that other teachers and departments at the school are supportive of PA homework.

Physical educators' attitude were also correlated with behavior (r =.40) and were an important variable associated with the behavior of assigning PA homework. Even if individual attitudes can be challenging to alter, it is worth mentioning that attitudes and subjective norms were also correlated with one another (r =.43). Although the primary purpose of the study was to examine the factors associated with

the behavior of assigning PA homework, this is evidence of the importance and the effect that physical educators' subjective norms can have on an individuals' attitudes. If support is gained from school administrators, parents, teachers, and people of importance to the physical educator, this may have a positive effect on a physical educators' attitudes towards assigning PA homework.

Perceived behavioral control displayed the least significant effect on physical educators' behavior in this study. Although this is an interesting finding of the study, it may be because of measurement issues within the instrument associated with perceived behavioral control. Responses to the two items related to perceived behavioral control displayed a potential measurement error (Cronbach alpha of (-.54)).

Research in the health-care field found individual exercise behavior to be a common barrier to PA promotion. However, in this study, individual exercise behavior as measured by the GLTEQ (Godin & Sheppard, 1985) did not have a significant effect on any of the variables. Although a lack of significance was found related to exercise behavior and assigning PA homework, it is interesting to note that this study displayed virtually identical GLTEQ scores to Cardinal's (2000) study of Michigan Association for Health, Physical Education, Recreation, and Dance professionals (M= 48.66, SD= 23.92 vs. M= 46.75, SD= 25.15).

In conclusion, while this is the first study examining the factors associated with physical educators' assigning PA homework, there are recognizable limitations regarding generalizability of these results. The sample was comprised of physical educators attending professional conferences and therefore may not be an accurate

representation of the profession as an entirety. There were also measurement issues found within the instrument. Although behavior was measured using a 5 point Likert scale ranging from *1 Not at All to 5 Very much*, it is difficult to predict the amount of PA homework assigned by the physical educator with the scale used. For future studies, it is recommended to utilize a time-framed Likert scale ranging from *1 rarely* to *5 all of the time* for behavior questions to gain a better understanding of how often physical educators' actually assign PA homework.

Future research should diversify the sample to all physical educators, rather than solely focusing on those attending professional conferences to display more generalizable findings of the profession as a whole. It is also recommended to test the theory of planned behavior as a model fit psychological framework related to physical educators assigning PA homework.

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CHAPTER 3

Factors Affecting Physical Educators' Promotion of Out-of-School Physical Activity

Stephen Thom and Joonkoo Yun

Abstract

The primary purpose of this study was to examine the factors affecting physical educators promoting students to be active outside of the school-based environment. For this study, the three behaviors associated with out-of-school physical activity promotion were; (a) community-based physical activity promotion, (b) extracurricular-based physical activity promotion, and (c) assigning physical activity homework. A self-report questionnaire was developed and individually distributed to physical educators attending professional conferences in the western portion of the United States. A variety of factors were tested in relation to the effect on individual's behavior to promote out-of-school physical activity: personal exercise behavior, knowledge of programs, knowledge of recommendations, attitudes, subjective norms, perceived behavioral control, intentions, and individual behavior. A path analysis was utilized to determine these findings. The most significant predictors of intentions were (a) attitudes, (b) knowledge of physical activity programs, and (c) subjective norms. Gaining knowledge of these findings has the potential to lead to more effective training of physical educators related to out-of-school physical activity promotion.

Factors Affecting Physical Educators' Promotion of Out-of-School Physical Activity

Increased Physical Activity (PA) is associated with improvements in health conditions, including coronary artery disease, hypertension, stroke, insulin sensitivity, osteoporosis and depression (Brevata, 2007). Although school-aged children have more spontaneous activity compared to adults, a growing number of young people are insufficiently active at a level to confer health benefits (Seghers, Martelaer, & Cardon, 2009). Current PA recommendations from the Centers for Disease Control (CDC) and the National Association for Sport and Physical Education (NASPE) are for 60 or more accumulated minutes of PA per day (CDC, 2009; NASPE, 2009).

The role of schools and physical education curriculum in the promotion of PA has been widely recognized in recent years and schools have been identified as an appropriate setting for the promotion of PA (Cale, 2000). In schools, physical educators are positioned to be the strongest advocates of a healthy and active lifestyle (McKenzie, 2007). McKenzie (2007) suggested that physical educators promote out-of-school PA so that students become aware of potential opportunities to be active outside of physical education class. Additionally, physical educators should work towards developing PA linkages in the community. Baranowski et al (1997) also suggested that physical educators should encourage students to be physically active outside of school and be able to refer students to community-based sports and recreation programs.

Understanding physical educators' behavior related to PA promotion is important in the national fight against childhood inactivity. Theoretical models present a systematic way of understanding behaviors and can help explain how these behaviors can be influenced (Keats & Culos-Reed, 2009). Keats and Culos-Reed (2009) also suggest that theoretical frameworks provide a foundation upon which evidence-based interventions are built and that these frameworks play a critical role in the development and implementation of best practices.

A number of behavior change theories exist, but the Theory of Planned Behavior (TPB) has gained significant attention regarding health changing behavior (Faulkner & Reeves, 2000; Falukner, Reeves, & Chedzoy, 2004; Martin, Oliver, & McCaughtry, 2007; Martin, Kullina, Eklund & Reed, 2001). TPB provides a framework for understanding the determinants of an individual's decision to enact a particular behavior (Ajzen, 1991). Ajen suggests that one's intention to perform a behavior is influenced by three types of beliefs; a) behavioral beliefs, b) normative beliefs (subjective norm), and c) control beliefs (perceived behavioral control). Although the TPB is a systematic representation of behavior, research among health care professionals has captured additional variables that may affect the promotion of PA. Lack of knowledge regarding appropriate PA promotion and PA recommendations were common themes found in the health care professional literature (McKenna, Henderson, & Baic, 2004; Petrella & Wright, 2000; McKenna, Naylor, & McDowell, 1998). Along with lack of knowledge in the health care field to

promote PA, McKenna et al (1998) found an overwhelming importance of personal heath behavior in increasing the chances of regularly promoting PA.

Currently, knowledge regarding physical educators' behavior and the factors associated with their behavior are missing from the physical education literature. Given that teachers are regarded as highly credible role models for children (Cardinal, 2000), it is important we begin to understand the factors associated with their behavior to ensure best practices within schools. Therefore, the primary purpose of this study was to examine the factors affecting physical educators' intention to promote out-of-school PA using the TPB as a theoretical framework.

Method

Participants

A total of 140 physical educators, 19% males (n=27), and 61% females (n=86) participated in the study (19% did not identify their gender). Participants were recruited at two professional physical education conferences in the western portion of the United States. A total 275 surveys were individually distributed to the potential participants and 140 surveys were returned for a response rate of (51%). After accounting for missing values, 90 fully completed surveys were included in the analysis.

Table 3.1 Demographics of Physical Educators (n=90)

Characteristics	N	%
General Ed. PE Teacher	22	24%
Adapted PE Teacher	60	70%
Education	-	-
Bachelors Degree	32	36%
Masters Degree	49	55%
Doctoral Degree	5	6%
Other Degree	4	3%
Years Teaching	-	-
0-5	28	31%
6-10	19	21%
11-15	10	11%
16-20	15	17%
21+	18	20%
Age	-	-
22-28	20	22%
29-35	19	21%
36-41	12	13%
42-48	9	10%
49+	28	31%
Grades Teaching	-	-
K-5	72	79%
6-8	57	63%
9-12	39	43%

Note- A majority of participants teach multiple grade levels

Instrument

For this study, a new instrument was developed to examine the potential factors influencing physical education teachers to encourage students to be active out-of-school using the TPB as a psychological model and recommendations from Francis et al. (2004) for instrument development. The three behaviors associated with out-of-school PA promotion were (a) community-based PA promotion, (b) extracurricular-based PA promotion, and (c) assigning PA homework. The survey included demographic information and potential factors affecting out-of-school PA promotion including; knowledge, attitude, subjective norms, perceived behavioral control, generalized intention, personal behavior, and personal exercise behavior. All questions were measured using a 5 point scale, and the sum of the responses was divided by the total number of statements for each question.

Knowledge of programs was measured related to (a) community-based programs, (b) extracurricular-based programs, (c) age appropriate activities, and (d) how to assign PA homework (α= .42, 6 items). Knowledge of recommendations focused on (a) NASPE PA recommendations, and (b) CDC PA recommendations (α= .90, 2 items).

Attitude were measured using bipolar opposites (i.e. pairs of opposites). Bipolar opposites were *(a) good/bad, (b) harmful/beneficial, (c) pleasant/unpleasant, (d) useful/worthless.* A fifth attitude question was added, "I am doing something positive by encouraging my students to be active..." (α= .86, 15 items). Subjective norms was assessed with four statements; (a) school administrator (b) parents/guardians (c) other teachers, and (d) people of importance to the physical

educator (α= .83, 12 items). Perceived behavioral control was measured with two questions. Two aspects focusing on perceived behavioral control were self efficacy (confidence to perform the behavior) and controllability (whether performing the behavior is up to them) (α= .21, 6 items).

Intention was measured using three questions of generalized intention (α= .80, 9 items). Behavior questions were measured with the statement, "I have encouraged my students to be active in…" (a) community-based PA programs, (b) extracurricular-based, and (c) assigning PA homework."

The Godin Leisure-Time Exercise Questionnaire (GLTEQ; Godin & Sheppard, 1985) is a self report measure that was used to determine the participants' quantity of personal exercise behavior. The GLTEQ was scored as followed: (9 x strenuous) + (5 x moderate) + (3 x light) = Total metabolic equivalent of task (METs).

Data Analysis

Prior to conducting data analysis, participants with missing values on construct items within the measure were removed from the main data analysis. Intercorrelations and a path analysis were employed to examine the strength of the relationships among the endogenous and extraneous variables, and also to determine the TPB as a model fit related to out-of-school PA promotion by physical educators. Indices used to determine model fit included; Goodness of Fit Index (GFI), Root Mean Squared Residual (RMR), Root Mean Square Error of Approximation (RMSEA), and Comparative Fit Index (CFI). In the selected model fit indices; the CFI and GFI use a

0 to 1.0 scale with 1.0 being perfect fit. RMSEA also use the 0 to 1.0 scale with a higher score indicates less of a fit to the model. AMOS 4.0 was utilized for the path analysis (SPSS Inc., Chicago, IL., 2008).

Results

Descriptive statistics for variables in the instrument can be found in Table 3.2. Participants mean scores were relatively positive; behavior mean was 3.33, knowledge of programs 3.65, knowledge of recommendations 3.90, attitude 4.36, subjective norm 3.56, perceived control 3.07, and intention 3.99. Personal PA behavior as measured by the GLTEQ was 49.48 METs (SD= 24.77). Correlation coefficients between each variable indicated that four of the potential seven variables were significant predictors of intention at the 0.01 level (2-tailed). The significant factors associated with intention were (a) behavior ($r=.57$, $p<.01$), (b) knowledge of programs ($r=.36$, $p<.01$), (c) attitude ($r=.65$, $p<.01$), and (d) normative beliefs ($r=.57$, $p<.01$). Personal physical activity behavior was also a predictor of intention ($r= .25$, $p<.05$). The zero order correlation matrix among factors can be found in Table 3.4.

Results from the path analysis revealed that intention was significantly predicted by a direct relationship from attitude ($\beta= .41$, $p< .001$), subjective norm ($\beta= .19$, $p< .003$), and knowledge of programs ($\beta= .30$, $p< .001$). All relationships can be seen in Figure 3.2. Fifty two percent of intention was accounted by personal PA behavior, knowledge of programs, attitude, subjective norm, and perceived behavioral control. Additionally, the path analysis revealed that the TPB was an acceptable

theoretical model to assess physical educators' behavior of encouraging students to be physically active outside of school. Model fit results showed an adequate level of fit for CFI= .95, GFI= .96, RMSEA= .15.

Table 3.3 Correlations Matrix Among Variables

Variable	1	2	3	4	5	6	7	8
1 IN	-	.57**	.25*	.04	.36**	.65**	.57**	.11
2 BEH		-	.38**	.18	.60**	.60**	.44**	-.01
3 PAL			-	.16	.13	.34**	.13	-.01
4 KR				-	.26**	.19	.10	-.01
5 KP					-	.30**	.32**	.01
6 AT						-	.46**	-.11
7 SN							-	.22**
8 PC								-

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Note. IN= Intention Average; BEH= Behavior Average; PAL= Physical Activity Level; KP= Knowledge of programs; KR= Knowledge of Recommendations Average; AT= Attitude Average; SN= Subjective Norm Average; PC= Perceived Control Average.

Table 3.2 Descriptive Statistics

Subscale	M	SD
Physical Activity in METS	49.48	24.77
Behavior	3.33	.91
Knowledge of Programs	3.65	.68
Knowledge of Recommendations	3.90	1.03
Attitude	4.36	.45
Subjective Norm	3.56	.50
Perceived Control	3.07	.42
Intention	3.99	.46

Discussion

Making students aware of potential opportunities to be physically active is a recommended strategy for physical educators to adopt (McKenzie, 2007). Although current literature signifies the importance of PA promotion beyond the school day (Lambdin & Erwin, 2007; McKenzie, 2007; Stelzler, 2005), this is the first study analyzing the potential factors associated with physical educator's behavior related to out-of-school PA promotion. Results from our path analysis indicated that the most important factors related to the intention of physical educators encouraging students to be active out-of-school were (a) physical educator's attitude toward out-school-PA promotion ($\beta = .42$, $p < .001$), (b) knowledge of programs including knowledge of community-based programs, knowledge of extracurricular-based programs, and knowledge of how to assign PA homework ($\beta = .20$, $p < .001$), and (c) normative beliefs ($\beta = .17$, $p < .003$).

Physical educators' attitude regarding out-of-school PA promotion was the most important factor revealing the intention of physical educators to promote out-of-school PA. Given physical educators' positive attitude (M=4.36) toward out-of-school PA promotion, this study provides evidence that physical educators may be viewing this behavior as an important component of their job. This evidence supports literature calling for physical education teachers to move beyond solely providing appropriate lesson plans during physical education time to adopting more of a whole school PA director role. Beighle, Castelli, Erwin, and Ernst (2009) advocate that

physical educators are the ideal professional within a school to be a PA director and argue that a component of their role is to promote out-of-school PA.

Adopting the behavior of promoting students to be active outside of school requires sufficient knowledge of potential opportunities for out-of-school PA. This study found that knowledge of programs related to out-of-school PA opportunities was also an important predictor of intention. This finding is consistent with the literature from the health-care field, finding lack of physician knowledge of appropriate PA to be a common barrier of PA promotion by physicians (McKenna, Henderson, & Baic, 2004, Petrella & Wight, 2000). If physical educators are not knowledgeable of opportunities for PA outside of school, then the behavior of promoting students to be active outside of school will not exist. Knowing about opportunities for PA is a vital factor related to out-of-school PA promotion and is a necessary skill for physical educators to obtain.

Knowledge of potential outlets for out-of-school PA promotion should focus on both community-based and extracurricular-based activities. School-based extracurricular programs can consist of competitive sports, intramurals, or PA clubs such as a walk/jog club. Many physical educators may already be involved with coaching competitive sports, but competitive sports tend to be exclusive towards children that may not have the athletic ability for successful participation. Therefore, physical educators need to expand their knowledge of out-of-school PA in a more comprehensive manner that encompasses opportunities for all students to participate in community-based PA. As a school leader in PA, it may be necessary for physical

educators to collaborate with other teachers, staff, and parents, about offering extracurricular-based PA at the elementary and secondary level. Given that some schools may be unable to offer extracurricular-based PA for students, it is essential for physical educators to also have sufficient knowledge of community-based PA programs.

Community programs extend to a large segment of the population in a cost-effective manner and provide opportunities to promote PA among children (Faber, Kullina, & Darst, 2007). Given that many teachers may not live in the communities in which they teach, it is important for teachers to seek community-based programs such as the Boys and Girls Clubs of America, YMCA, local health clubs, and Special Olympics, as potential opportunities for their students to be physically active outside of school. Encouraging students to be physically active outside of school has the potential to have a positive effect on students' out-of-school PA behavior, and instilling PETE candidates with the importance of being knowledgeable about PA opportunities, prepares them to be immediate out-of-school PA promoters and potential leaders in their schools. For PETE students, it may be recommended include a project regarding age appropriate community-based programs in communities where they are student teaching. This might involve creating a flier or newsletter to send home to parents with a list of community-based and extracurricular-based PA programs for their child to potentially participate in. Not only will this type of assignment increase physical educators' knowledge of programs, but this will also be a

collaborative effort between the physical educator and the parent regarding out-of-school PA.

Receiving support from parents, colleagues, administrators, and people of importance to the physical educator (subjective norm) was also an important factor in this study related to intention. McKenzie (2007) suggests that teachers must have substantial collaboration skills and must be able to network with vast networks of persons both directly (children, parents, other teachers, principals) and indirectly (district administrators, government officials). Given that these figures were important in predicting physical educators' intention to promote out-of-school PA, physical educators need to address the importance of students being active out-of-school to gain support from these individuals. Staff meetings or back to school nights can serve as an outlet between the physical educator and the target audience regarding the importance of students being active outside of school. If school administrators, colleagues, parents, and people of importance to the physical educator expect them to promote out-of-school PA, then there is the possibility of increasing the likelihood of the behavior occurring.

It is also important to discuss current literature advocating physical educators to promote out-of-school PA (Beighle et al. 2009; Faber, Kullina, & Darst, 2007; McKenzie, 2007; Wallhead & Buckworth 2004), and NASPE professional teaching standards (NASPE, 2004). Although researchers advocate for this role, current NASPE teaching standards do not advocate physical educators to promote their students to participate in out-of-school PA. In the future, when rewriting professional

teaching standards in physical education, it may be wise to focus on the importance of physical educators promoting out-of-school PA.

Although the primary purpose of this study was to analyze the factors associated with physical educators promoting out-of-school PA, it is important to also analyze the relationship between subjective norm and attitude. Past studies utilizing TPB have supported the relationship between subjective norm and attitude. Taylor (2011) focused on afterschool PA program staff and inclusion of youth with disabilities. The study found that subjective norm and attitude were correlated with another ($r = .45$ $p < .01$). Similarly, Conaster, Block, and Gansneder (2002) utilized TPB to predict physical educators' intention to include students with severe disabilities in aquatics classes and found that attitude and subjective norm were correlated with another ($r = .51$ $p < .01$). The important relationship between attitude and subjective norm were also apparent in this study ($r = .46$ $p < .01$).

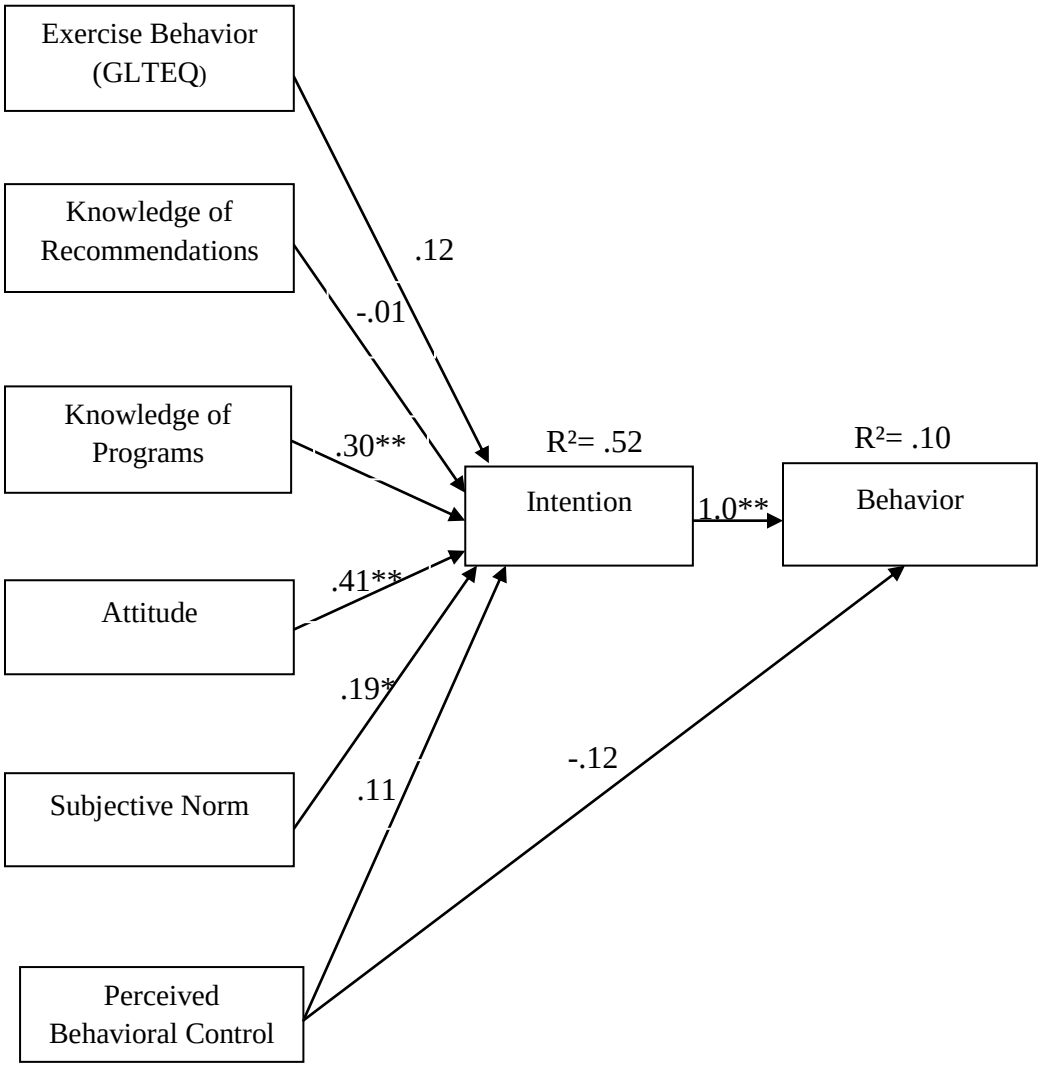
While attitude, knowledge of PA programs, and support to promote out-of-school PA were important factors predicting intention, not all variables in this study were found to have an effect on intention. Research in the health-care field found individual exercise behavior to be a common barrier to PA promotion. However, in this study, individual exercise behavior as measured by the GLTEQ (Godin & Sheppard, 1985) did not have a significant effect on intention. Although a lack of significance was found related to exercise behavior and intention, it is interesting to note that this study displayed virtually identical GLTEQ scores to Cardinal's (2000)

study of Michigan Association for Health, Physical Education, Recreation, and Dance professionals (M= 48.66, SD= 23.92 vs. M= 49.48, SD= 24.77).

While this study is the first to utilize the TPB and additional constructs from the healthcare field as factors related to out-of-school PA promotion, there are recognizable limitations related to the generalizability of these results. The sample was comprised of physical educators attending professional conferences and therefore may not be an accurate representation of the profession as an entirety. There is also measurement issues found within the instrument associated with perceived behavioral control due to the lack of internal consistency (α= .21, 6 items). Although behavior was measured using a 5 point Likert scale ranging from *1 Not at All to 5 Very much*, it is difficult to predict how often this behavior is occurring with the current scale used. For future studies, it is recommended to utilize time framed behavior questions for a better understanding of how often the behavior is occurring, "In the past 30 days, I have encouraged my students to be active in community-based programs."

While this was the first study analyzing the factors associated with out-of-school PA promotion, future research should diversify the sample to all physical educators, rather than solely focusing on those attending professional conferences to display more generalizable findings of the profession as a whole. It is also suggested for future research to analyze other potential behaviors associated with out-of-school PA promotion.

Figure 3.1 Path Analysis Model (n=90)



**. Factor is significant at the 0.01 level (2-tailed).

*. Factor is significant at the 0.03 level (2-tailed).

Note- Path analysis is displayed in standardized regression weights.

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CHAPTER 4: CONCLUSIONS

The following summary includes overall research conclusions from the two studies presented including future research directions and research conclusions specifically addressing each research question presented in Chapter 2 and Chapter 3.

Overall Conclusions

The primary purpose of the two studies presented was to determine the factors associated with physical educators promoting their students to be active outside of the school-based environment. The results of both studies indicated the importance of knowledge of out of school PA opportunities including; (a) knowledge of how to assign PA homework; (b) knowledge of community-based PA programs; and (c) knowledge of extracurricular-based PA programs. Results from the two studies also indicated the importance of attitude and subjective norm related to physical educator's intention to promote out-of-school PA and to assign PA homework. In order to increase the likelihood of physical educators promoting out-of-school PA, it may be necessary to instill the importance of these behaviors in physical education teacher education (PETE) students, and current physical educators. PETE students may be easier to address with curriculum modifications which has the possibility to affect future leaders in physical education. Focusing on the ability to assign PA homework and locate community-based programs in communities in which they teach has the potential to affect out-of-school PA behavior of students.

For future research, it is recommended to focus on the diversity of the sample to obtain more generalizable results. Although this was the first study to examine the factors associated with out-of-school PA, the sample consisted of physical educators attending professional conferences on the west coast of the United States. Additional areas of future research could also focus on implementing other behavioral theories other than the TPB.

Specific Research Conclusions

1. What are the factors influencing physical educators assigning PA homework?

A multiple regression was employed with the dependent variable being behavior and independent variables being (a) personal PA exercise behavior, (b) knowledge of how to assign PA homework, (c) knowledge of PA recommendations (d) attitude, (e) subjective norm, and (f) perceived control. All of the predictors accounted for 29% of physical educators' homework assigning behavior, R= .54. Knowledge of how to assign PA homework was the largest predictor of behavior (β =.50, t =3.25, p <.001). Also, the results of the regression revealed that physical education teachers attitude (β =.34, t =2.56, p <.01), as well as how significant others view supporting physical educators to assign PA homework (β =.39, t =2.81, p <.01) became important predictors of physical educators' actual behavior. These results indicate the importance of knowledge of how to assign PA homework, attitude, and subjective norm in predicting the behavior of assigning out-of-school PA homework.

2. What are the factors influencing physical educators' intention to promote out of school PA?

A path analysis was employed to examine the strength of the relationships among the endogenous and the extraneous variables. The path analysis revealed that intention was significantly predicted by a direct relationship between attitude ($\beta = .41$, $p < .001$), subjective norm ($\beta = .19$, $p < .003$), and knowledge of programs ($\beta = .30$, $p < .001$). These results also indicate the importance of knowledge of community-based PA, extracurricular-based PA, and how to assign PA homework. Additionally, these results also indicate the importance of attitude and subjective norm as direct predictors on physical educators' intention to promote out-of-school PA.

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APPEDNDICES

APPENDIX A: REVIEW OF LITERATURE

Increased Physical Activity (PA) is associated with improvements in health conditions, including coronary artery disease, hypertension, stroke, insulin sensitivity, osteoporosis and depression (Brevata, 2007). Despite the accumulation of evidence for its health benefits, the amount of PA in developed nations is quite low (Gustafson & Rhodes, 2006). In a review focusing on PA and youth-based interventions, approximately 25% of male adolescents and 50% of female adolescents fail to meet the guidelines for participation in sustained moderate to vigorous PA (Ringuet & Trost, 2001). Although school-aged children have more spontaneous activity compared to adults, a growing number of young people are insufficiently active at a level to confer health benefits (Seghers, Martelaer, & Cardon, 2009). Research has also lead to the idea that PA habits developed early in life may persist into adulthood (Telema, Yang, & Vilkari, 1997).

Physical education teachers have an opportunity to not only educate students to be physically active during school, but also to encourage and educate students to be physically active outside of the school environment. Physical education teachers see large numbers of students at both the elementary and secondary level giving them the access necessary to potentially influence overall PA behaviors. The purpose of this literature review is to (a) introduce an overview of youth PA, (b) PA in the school based setting, (c) national PE standards and recommendations, (d) the role of the PE

teacher, (e) PA promotion strategies, and (f) the Theory of Planned Behavior as it relates to the promotion of PA.

Overview of Physical Activity

PA can come from a variety of different activities such as, biking, running, walking, yard work, skateboarding, soccer, and an assortment of other activities resulting in different amounts of energy expenditure. Current PA recommendations from the Center for Disease Control (CDC) for children 6-17 years of age are for 60 or more accumulated minutes of PA per day, with a majority of the time coming from activities that focus on aerobic activity such as running or bike riding (CDC, 2009). PA is positively associated with higher levels of physical fitness, HDL cholesterol, bone mass, and psychological well-being (Ringuet & Trost, 2001). Regular participation in PA can have a direct effect on youth's long-term health behaviors, yet there is a growing health concern associated with inactivity in youth.

Students who perform more hours of PA and/or more intense PA have better academic achievement than those who are less physically active (Fox, Barr-Anderson, Neumark-Sztainer, & Wall, 2010). Evidence also reveals that appropriate levels of PA among children and youth, including sufficient time in moderate to vigorous physical activity, are positively related to increased on-task classroom behavior, cognitive development, and academic performance (Siedentop, 2009). Siedentop also reported that Magnetic Resonance Imaging (MRI) results show a positive dose-response between PA levels and frontal-lobe brain activity.

Behaviors associated with inactivity such as watching television, playing video games, and computer use, have a negative impact on the amount of PA children receive on a daily basis because of the amount of time per day children use these types of devices. Research from the Kaiser Family Foundation (2010), found that children ages 8-18 spend upwards of 1 and a half hours of television viewing per day, and 1 hour fifteen minutes of computer use per day (Rideout, Foehr, & Roberts, 2010). According to Duke, Huhman, and Heitzler (2003), 61.5% of children aged 9-13 years do not participate in any organized physical activity during their nonschool hours and that 22.6% do not engage in any free-time PA.

Due to this newly established generation of inactive youth, obesity rates over the past 20 years in children have increased significantly. Results from the 2007-2008 National Health and Nutrition Examination Survey (NHANES), using measured heights and weights, indicate that an estimated 17 percent of children and adolescents ages 2-19 years are obese (CDC, 2009). Obesity rates have steadily risen even though children have an extraordinary amount of free time (Sherman, 2000). Longitudinal studies have found evidence that young children who leave 3rd grade overweight are likely to remain so throughout adolescents and into adulthood (Siedentop, 2009). Not only will these sedentary habits be difficult to change later in life, but research has also documented that PA levels in both boys and girls decrease each year between 4th and 10th grade (Bradley, McMurray, Harrell, & Dang, 2000). As suggested by Hill (2009), these sedentary habits formed during pre-adolescence tend to be difficult to change later in life. Therefore, elementary aged children need the skills necessary to

adopt a physically active lifestyle to better ensure long term health once they reach adolescents and adulthood.

Until recently, not much attention has been paid to the PA behavior of people with a disability in relation to their health and well-being (Van der Ploeg, et al, 2004). Children with disabilities are at particular risk for sedentary living because the presence of disability generally leads to deterioration of physical functioning, leading to the development of secondary conditions. Van der Ploeg et al (2004) also suggest that physically activity lifestyles for the health and well-being of people with disabilities is probably even more important than for the general population. Despite this argument, children and adolescents with disabilities have significantly lower levels of PA compared to their nondisabled peers (Rimmer, 2008). Rimmer also mentioned that data from the 2005 Youth Risk Behavior Survey (YBS) indicated the proportion of students who engaged in sedentary activities (i.e., playing video/computer games 3+ hours/school day) was higher in those with physical disabilities (26.6%) compared to those without disabilities (20.4%). Research from Faison-Hodge and Porretta (2004) focusing on PA levels of students with and without Mental Retardation (MR) found that children with mild MR are typically similar in physical and motor skills to their same age inactive peers without disabilities, yet children with disabilities tend to accumulate substantial amounts of inactivity. Although the health benefits of PA are similar in individuals with and without disabilities, PA disparities exist, which can lead to an increase in the prevalence of secondary conditions.

Physical Activity in Schools

In 2008, public elementary and secondary enrollment approached 49.8 million students, with 34.9 in kindergarten-8th grade and 14.9 million in 9th-12th grades (Siedentop, 2009). Schools provide one of the few opportunities to address the full range of individuals in a population, and a last chance to assess, at no extra cost, a captive audience (Cale, 2000). Although most children can be reached during school, the amount of PA time accumulated during the school day is insufficient to meet the recommended 60 minutes of PA per day. Opportunities for involvement in school based PA comes primarily from physical education and recess time. According to a national study conducted by the Center on Education Policy in 2007, 62% of elementary schools and 20% of middle schools have significantly increased time allotted for reading/language arts and mathematics, while 44% of school districts reported cutting time in areas such as physical education, and recess since the passing of No Child Left Behind (NCLB) (Trost & van der Mars, 2010).

A position paper from the National Association of Sport and Physical Education (NASPE) (2006) focusing on recess for elementary schools, recommends at least one daily period of recess at 20 minutes in length (COPEC, 2001). Recess, a regularly occurring period of free time in elementary schools, can offer an excellent opportunity to help youngsters discover enjoyable physical activities and increases their motivation to engage in more movement (Stellino & Sinclair, 2008). Even if recess scheduling follows the NASPE recommendations, children that rely on recess for PA during the elementary years are still falling short of the recommended PA time

by at least 30-40 minutes. Recess can serve as a time to accumulate PA for children but, according to the American Association for the Childs Right to Play, nearly 40% of the nation's schools have modified, removed, or are considering removing recess from the elementary school calendar (CPOEC, 2001). When recess is provided, children are free to participate in PA such as soccer, basketball, playing tag, or climbing on the jungle gym, which would assist in the accumulation of aerobic activity, but sedentary behaviors are also acceptable during recess.

A study focusing on PA during recess and outside of school indicated that children spend a majority (>60%) of their recess time in PA, and a smaller portion of their outside of school time in PA (>20%) (Beighle, Morgan, LeMasurier, & Pangrazi, 2006). During a daily 15 minute recess session, on average students only accumulated 10 minutes of PA. Recent studies out of the UK focused on measuring Moderate to Vigorous Physical Activity (MVPA) with the use of heart rate monitors in normal-weight and overweight boys and girls with and without disabilities during school recess (Gareth, Ridgers, Stuart, Fairclough, & Richardson, 2007). The results of the study showed that boys were more active than girls during recess, and of the four subgroups studied (boys and girls with and without disabilities), normal-weight girls spent the least amount of time involved in MVPA.

Along with recess, physical education can also serve a vital role in the accumulation of daily PA. Current NASPE recommendations for physical education are 150 minutes per week during the elementary years, with a jump to 225 minutes per week during secondary years (NASPE, 2008). Physical Education guidelines from the

California Department of Education (CDE) require a minimum of 400 minutes of physical education every 10 school days in grades 7-12, with 2 years of required physical education during grades 9-12 (CDE, 2006). However, the CDE also allows a two year exemption of physical education in grades 10-12 with the passing of a physical performance test in the 9th grade. To pass the physical performance test, the student must score in the Healthy Fitness Zone (HFZ) on the Fitnessgram® on any 5 of the 6 catergories (CDE, 2006).

Well-taught physical education provides opportunities for participating in PA on a regular basis and helps develop fitness, motor skills, and knowledge that will enable children to have an active lifestyle into adulthood (Sit, McManus, McKenzie & Lian, 2007). Previous research has shown that physical education has a key role to play in increasing PA time (Seghers, Martelear, & Caron, 2008), but with the time constraints that physical education faces in the elementary years, PA needs cannot solely be met though school-based physical education. Hill (2009) argued that even if students are active 100% of the time during physical education class, it is unlikely that they will meet the recommendations for health-promoting levels of PA. His point of view suggests the importance and need for PA outside of the school-based settings to confer the health benefits associated with PA.

Providing appropriate physical education during the elementary years has been a challenge due to the financial restraints that are put on school districts in regards to physical education teacher funding. California education budget cuts have reached 4.2 billion dollars for the 2009-2010 school year (Martinez, 2009), putting

pressure on school administrators to cut school-wide budgets. With these budget cuts along with the NCLB era, classes such as physical education are viewed as nonessential and secondary to the academic missions of schools (Trost & van der Mars, 2010). This means that organized physical education responsibility is shifted to classroom teachers due to the costs associated with hiring qualified physical education teachers. As school districts and classroom teachers are inundated with vigorous academic performance outcomes laid out by NCLB, physical education time is often pushed aside. The results of a 2003 focus group study by Dwyer (2003), indicated that classroom teachers perceived physical education as a low priority. It was also found that other performance measures, such as reading, writing and mathematics have precedence over physical education, and the infrastructure required for PA participation is insufficient. With the budget crisis still affecting many states, the future of physical education delivered to children by credentialed physical education teachers at the elementary level is in jeopardy. As a result, empowering classroom teachers to deliver regular physical education remains an important part of the equation (Sherman, Tran, & Alves, 2010).

With the decline over the past decade in the percentage of students who attend physical education, it becomes clear that having increased student PA within physical education lessons is insufficient to meet the CDC recommendations for health promoting levels of PA (Wallhead & Buckworth, 2004). School structures and most school programs are designed primarily to keep children sedentary and to ensure that students meet cognitive outcomes (McKenzie, 2007). Due to the rise in sedentary

behaviors, it is imperative that physical education teachers understand the lack of PA accumulated within the school day, and the importance of students being physically active outside of class.

According to the report from the 2009 Youth Risk Behavior Surveillance System (YRBSS) monitoring youth risk behaviors, 23% of high-school students did not participate in at least 60 minutes of any kind of PA that increased their heart rate and made them breathe hard on at least 1 day during the 7 days prior to filling out the survey. Physical inactivity was found in 30% of females compared to 17% of males, and 33% of the surveyed participants attended physical education class daily during school. Although 33% of high school students attended physical education class daily, 23% of the students reported less than 60 minutes of PA per day, showing that students are receiving inadequate amounts of MVPA during physical education. This is a direct call to the need for physical education teachers to promote PA beyond the school- based environment as the numbers of physical inactivity are relatively high.

National Physical Education Standards

Physical education national standards have been developed by NASPE for grades K-2, 3-5, 6-8, and 9-12 (NASPE, 2004), providing accountability and rigor to the profession, while also guiding physical education programs in standards-based education. There are currently 6 national standards for physical education, with modifications for appropriateness in each of the grade level categories listed above. The 6 national standards are (a) demonstrating competency in motor skills and

movement patterns needed to perform a variety of physical activities, (b) demonstrates an understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities, (c) participates regularly in physical activity, (d) achieves and maintains and health enhancing level of physical fitness, (e) exhibits responsible personal and social behavior that respects self and others in a physical activity setting, and (f) values physical activity for health, enjoyment, challenge, self expression, and/or social interaction. This developmental approach to physical education differs at each grade with an emphasis in the elementary years on developing specific locomotor movements, object control skills, and socially responsible behaviors, while the secondary level focuses more on specific skills related to lifelong activities while also focusing on skills needed to design and monitor individual workout plans.

The importance of participating regularly in PA is the primary focus of standard 3 (NASPE, 2004). Standard 3 focuses on regular participation in PA both inside and outside of the school-based environment, with a comprehensive approach to the idea of a healthy lifestyle. A reoccurring theme in standard 3, with developmental appropriateness for each grade level, is the importance of participating in PA outside of the school-based environment. As mentioned earlier, this is a necessary skill for students to learn because recommended levels of PA are difficult to reach within the school-based environment, and the idea that PA behaviors developed early in life may persist into adulthood (Telema, Yang, & Vilkari 1997).

Along with standards for students in physical education, NASPE has also developed 6 standards for the physical education professional. Initial physical education teacher standards include (a) the importance of scientific and theoretical knowledge, (b) skill-based and fitness-based competence, (c) planning and implementation, (d) instructional delivery and management, (e) the impact on student learning, and (f) the importance of professionalism (NASPE, 2008). Among the professional standards for physical educators, standard (e) Professionalism, addresses the idea that an effective teacher demonstrates behaviors that are consistent with the belief that all students can become physically educated individuals (NASPE 2006), but it does not mention the importance of encouraging students to be active in PA outside of school. The 6 standards are written in great depth, but they are missing any specific guidelines concerning physical educators promoting out-of- school PA.

Standard 3 for students focuses on the importance of regular participation in PA, but a gap exists between the standard for regular PA participation among students, and the PE teacher's role of promoting PA beyond the school. Teachers completing physical education teacher education (PETE) programs are educated about the importance of PA, but the standard needs to align more with the importance of PA promotion by physical education teachers so students have more opportunities to accumulate PA.

Physical Education Teacher Roles

The idea of physical education being a subject matter taught solely during the school hours is problematic because it is an ineffective strategy as the evidence of youth inactivity piles up. Current research emphasizes a need for physical education teachers to move beyond their current roles as physical education teachers and adopt the roles of PA directors (Beighle, Castelli, Erwin, & Erst, 2009; McKenzie 2007; Wallhead & Buckworth, 2004). They are not suggesting abandoning physical education curriculum, but there is a need for physical education teachers to move beyond their 30-60 minute daily physical education lessons, into whole school Physical Activity Directors (PAD). The Journal of Physical Education Recreation and Dance published a series of articles discussing the responsibilities of schools in promoting PA, and researchers have argued that physical educators are the ideal professional to take on this role (Beighle, et al, 2009). It is argued that a PAD will not only be responsible for teaching appropriate standardized curriculum, but they will also be school-wide leaders in PA. Beighle et al. (2009) suggests that physical educators are best suited for this role because they are the most qualified to work with students in a physically active environment. PAD's will (1) lead their schools in advocating the importance of physical education, (2) work with classroom teachers to increase in class PA, (3) develop strategies for increasing recess activity, (4) develop PA events involving parents, (5) develop a staff-wellness program, and (6) develop strategies for community-collaboration. Siedentop (1999), has argued that while the mindset of young people toward a healthy lifestyle can be modified, the shift cannot

be accomplished by and single group of mentors acting alone. A three-prong strategy, coordinating the efforts of family, school, and community is recommended, and physical educators are in a unique position to be the vanguard of such an approach (Stezler, 2005).

Lambin & Erwin (2007) suggest four main approaches for physical educators promoting community-based PA. Physical educators should (a) promote appropriate practices in the community-based setting, (b) connect students with activity opportunities, (c) invite members of the community into the school, and (d) promote the appropriate use of school facilities for community-based activities (Lambin & Erwin, 2007)

Assigning out-of-school PA homework has also been a recommended strategy for increasing PA and a role for physical educators to adopt (Lambin & Erwin, 2007; Stezler 2005; Smith & Claxton, 2003; Gabbei & Hamrick, 2001). Active homework is one to expand the physical education curriculum in order to meet PA recommendations and to promote lifelong activity from kindergarten through college (Smith & Claxton, 2003). The major objectives of homework are to (a) review and reinforce selected skills and subject matter, (b) help students develop discipline and self-directedness, and (c) improve communication with parents and the community (Gabbei & Hammrick, 2001). Physical education homework has the unique opportunity to address the cognitive, psychomotor, and affective domains (Mitchell, Barton, & Stanne, 2000). Mitchell et al. (2000) summarizes effective homework as

being relevant to class, keeping students motivated about assignments, holding students accountable, and gaining support from parents about assigning homework.

Although these strategies of involving the community and assign PA homework in physical education are recommended, there is no current research that addresses the physical educator's practices of these promotional behaviors.

Physical Activity Promotion Strategies in Other Professions

Although previous research has not focused specifically on physical education teachers' promotion of PA outside of the school environment, a large body of research exists focusing on PA promotion among health professionals. Calfas et al (1996) suggests that medical professionals have the potential to play a significant role in promoting their patients' to engage in regular PA. Research from the UK using surveys to assess PA promotion found that an 'active lifestyle,' was being encouraged by 87% of Registered Dieticians (RD), but only 24% of the RD received PA-specific training and education for counseling their clients to be physically active (McKenna, Henderson, & Baic, 2004). Over 92% of the registered dieticians surveyed agreed that PA promotion was part of their role and reported actively promoting PA to their clients. Due to the strong evidence that exercise is beneficial, several organizations, including the US Preventative Services Task Force, recommend that all physicians advise all patients to increase PA (Wee, McCarthy, Davis, & Phillips, 1999). Previous research has shown that physicians see exercise counseling and PA as important, but indicate that they are generally not well prepared to counsel patients or

prescribe exercise (Petrella & Wight, 2000), and physician surveys suggested that physicians generally counseled only a minority of patients to be physically active (Wee et al, 1999). Barriers to physicians prescribing PA include perceived lack of time, lack of training and skills, and an absence of counseling tools (Calfas, et al, 1996).

Theory of Planned Behavior

The use of a theoretical framework provides the foundation upon which evidence-based interventions are built and plays a critical role in the development and implementation of best practices (Keats & Culos-Reed, 2009). Keats & Culos-Reed (2009) also mention that theoretical models present a systematic way of understanding events and can help explain how health behaviors such as PA can be influenced. A number of theoretical models exist, but the Theory of Planned Behavior (TPB) (Ajzen, 1991) has gained significant attention in regards to health related behavior. The TPB has been applied to explain the behavior of physical educators in a variety of situations. Conaster, Block, & Gansneder (2002) utilized TPB to analyze the factors associated with aquatic instructors' intentions of including youth with both mild and severe disabilities in aquatics classes. In a similar study, Taylor (2011) utilized the TPB to analyze factors associated with afterschool staff and including youth with disabilities in PA. To predict whether a person intends to do something, we need to know whether the person is in favor of doing it (attitude), how much the person feels under social pressure to do it (subjective norm), whether the person feels in control of

the action in question (perceived behavioral control) and their intention to perform the behavior (Francis et al, 2004). The TPB asserts that the most important direct determinant of behavior is behavioral intention (Ajzen, 1991).

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Institutional Review Board • Office of Research Integrity
B308 Kerr Administration Building, Corvallis, Oregon 97331-2140
Tel 541-737-8008 | **Fax** 541-737-3093 | IRB@oregonstate.edu
http://oregonstate.edu/research/ori/humansubjects.htm

NOTIFICATION OF EXEMPTION

October 19, 2010

Principal Investigator:	Joonkoo Yun	Department:	Nutrition Exercise Science
Study Team Members:	N/A		
Student Researcher:	Stephen C. Thom		
Study Number:	4789		
Study Title:	Practices of Physical Educators Promoting Physical Activity Outside of School		
Funding Source:	None		
Submission Type:	Initial Application received 10/04/10		
Review Category:	Exempt	Category Number:	2

The above referenced study was reviewed by the OSU Institutional Review Board (IRB) and has determined that it is exempt from full board review. You may proceed with the research described in the protocol.

Expiration Date: 10/18/15

*The exemption is valid for **5 years** from the date of the initial determination.*

Annual renewals will not be required. If the research extends beyond the expiration date, the Investigator must request a new exemption. Investigators should submit a final report to the IRB if the project is completed prior to the 5 year term.

Documents included in this review:

- ☒ Protocol
- ☐ Consent forms
- ☐ Assent forms
- ☐ Grant/contract
- ☒ Recruiting tools
- ☒ Test instruments
- ☐ Attachment A: Radiation
- ☒ Letters of support
- ☐ External IRB approvals
- ☐ Translated documents
- ☐ Attachment B: Human materials
- ☒ Other: Waiver of documentation

☐ Project revisions:

Principal Investigator responsibilities:

- Amendments to this study must be submitted to the IRB for review prior to initiating the change. Amendments may include, but are not limited to, changes in funding, personnel, target enrollment, study population, study instruments, consent documents, recruitment material, sites of research, etc.
- All study team members should be kept informed of the status of the research.
- Reports of unanticipated problems involving risks to participants or others must be submitted to the IRB within three calendar days.
- The Principal Investigator is required to securely store all study related documents on the OSU campus for a minimum of three years post study termination.

If you have any questions, please contact the IRB Office at IRB@oregonstate.edu or by phone at (541) 737-8008.

September 30, 2010

Joonkoo Yun, Ph.D.
Oregon State University
Department of Nutrition and Exercise Sciences
Women's Building 107C
Corvallis, OR 97330

Dear Dr. Yun and Mr. Thom,

I am delighted to write this letter in support of your research project entitled Practices of Physical Educators Regarding Out of School Physical Activity Promotion. As an adapted physical educator, I appreciate your effort to reveal the factors influencing physical educators' promoting physical activity beyond the school setting. Considering the recent national attention on the physical inactivity problem among children with and without disabilities, your project has potential to make significant contributions. Involving children with and without disabilities in physical activity outside of the school setting is an important aspect of overall health and is an aspect of physical education. We believe that physical educators have the important role of yet limited research exists supporting their effectiveness at doing so.

As a conference organizer for the National Annual Adapted Physical Education Conference I am happy to support your project. We will be able to provide you with a single table and two chairs in the exhibit hall of the conference center to assist with your data collection. Please let us know if there are any other accommodations that might be necessary to facilitate the collection of your data.

We would like to welcome you for attending our upcoming 39th Annual Adapted Physical Education Conference in Riverside. I Look forward to working with you and assisting with this new and exciting research project. Best of luck and safe travels to California.

Regards,

HyungKyung Oh, Ph.D.

January 10, 2011

Joonkoo Yun, Ph.D.
Oregon State University
Department of Nutrition and Exercise Sciences
Women's Building 107C
Corvallis, OR 97330

Dear Dr. Yun and Mr. Thom,

It is a pleasure to write this letter in support of your research project entitled *Practices of Physical Educators Regarding Out-of-School Physical Activity Promotion*. As a faculty member in the Department of Nutrition and Exercise Sciences at Oregon State University, and someone who works directly with local physical educators, I appreciate your effort to study and understand what factors may have an influence on physical educators' promotion of physical activity beyond the school setting. Including all children in physical activity outside of the school setting is an important goal, and one that can have a huge effect on the overall health of our children and youth. Physical educators play an important role in promoting out-of-school physical activity, yet there is limited research to support their effectiveness.

As a conference organizer for the Council for Children's Expanded Physical Education, I am happy to support your project. We will be able to provide you with a single table and two chairs in the exhibit area of the conference center to assist with your data collection. Please let us know if there are any other accommodations that might be necessary to facilitate the collection of your data.

We would like to extend a welcome for you to attend our upcoming 31st Annual Northwest Conference for Children's Physical Education. Please let us know if we can be of any further assistance.

Regards,

Heidi M. Wegis, Ph.D.

College of Health and Human Sciences
Department of Nutrition & Exercise Sciences
Oregon State University
Women's Building 107D
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541-737-9932

November 5, 2010

Dear Fellow Physical Educator

As you are well aware, the lack of physical activity is a serious concern for school aged children. The importance of physical activity is emphasized by the CDC as well as the National Association for Sport and Physical Education. Physical Education teachers have the opportunity to make a substantial impact on the lives of many students both with and without disabilities regarding physical activity. In recent years, some leaders in physical education advocate physical education teachers to encourage students to be physically active outside of school and be able to refer students to community based sports and recreation programs. However there is no information available on teacher's beliefs or current practices promoting physical activity outside of schools.

We are asking you to share your perspective on research activities. We would appreciate it if you would take about 10 minutes to respond to the enclosed survey and return it to the table. Your responses will be added together with other physical educators and recorded as a group. Your personal response and your identity will not be made public. Your participation in this project is voluntary and you may refuse to answer any question(s) for any reason. There are no foreseeable risks to participate in this study and you will not receive any direct benefits. Only a small number of physical educators will asked to complete the survey, so your perspectives and expertise are important to this study. This research is being used as a Master's thesis for Stephen Thom in the Movement Studies in Disability Program at Oregon State University.

The answers you provide will be kept confidential to the extent permitted by law. Special precautions have been established to protect the confidentiality of your responses. In accordance with the regulations, all study related documents must be securely stored by the investigator for 3 years post study termination. If you do not want to participate and do not wish to be contacted further, please return the uncompleted survey. However, your participation is extremely valued.

If you have any questions about the survey, please contact JK Yun at (541) 737 – 8584 or by email at jk.yun@oregonstate.edu. If you have questions about your rights as a participant in this research project, please contact the Oregon State University Institutional Review Board (IRB) Human Protections Administrator at (541) 737-8008 or by email at IRB@oregonstate.edu.

Thank you for your help. I appreciate your cooperation.

Sincerely,

Stephen C. Thom

Joonkoo Yun, Ph.D.
Associate Professor

OSU Oregon State University

DEPARTMENT OF NUTRITION AND EXERCISE SCIENCE

Out of School Physical Activity Survey

This survey should be completed by either a PE teacher or an Adapted PE teacher. Please answer all of the questions/statements as truthfully as possible. Completion of this survey will help us understand the factors associated with promoting students to be active outside of the school based environment. Please return the completed survey to the table labeled **Out of School Physical Activity Survey.**
The following are definitions used for terminology throughout the survey:
Out of school physical activity: Physical activity that occurs either before or after school.

SECTION ONE: General Information about YOU and YOUR SCHOOL

1. What is your current age?
   22-28 ☐ 29-35 ☐ 36-41 ☐ 42-48 ☐ 49 up ☐
2. Gender? Male ☐ Female ☐
3. What is your educational level?
   Bachelors ☐ Masters ☐ Doctoral ☐ Other ☐
4. How many years have you been teaching?
   0-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21 & up ☐
5. What grades are you currently primarily teaching? (please check all that apply)
   K-5 ☐ 6-8 ☐ 9-12 ☐ Other ☐
6. Do you primarily teach adapted PE or general PE? General PE ☐ Adapted PE ☐
7. How many minutes per week do your students have Physical Education?
   0-30 ☐ 31-60 ☐ 61-90 ☐ 91-120 ☐ 121-150 ☐ 151-180 ☐ 181 & up ☐
8. What best describes your typical class size?
   0-10 ☐ 11-20 ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 61 & up ☐
9. Is your school designated a Title 1 School?
   Yes ☐ No ☐ Not sure ☐ Itinerant (multiple schools) ☐

SECTION TWO: Personal Physical Activity Levels (The Godin Leisure-Time Exercise Questionnaire)

10. During a typical **7-Day Period** (a week), how many times on the average do **you** do the following kinds of exercise for **more than 15 minutes** during your free time (write in each box the appropriate number)?	**Times per Week**
a. **Strenuous Exercise (Heart Beats Rapidly)** (e.g., running, jogging, hockey, football, soccer, basketball, vigorous swimming, vigorous long distance bicycling) **(i.e. If you went long distance bicycling for 3 hours, that would count as 1 bout of strenuous exercise).**	☐
b. **Moderate Exercise (Not Exhausting)** (e.g., fast walking, baseball/softball, tennis, easy bicycle riding, surfing, easy swimming, badminton, dancing) **(i.e. If you played tennis for 45 minutes, that would count as 1 bout of moderate exercise)**	☐
c. **Mild Exercise (Minimal Effort)** (e.g., yoga, bowling, golf, easy walking) **(i.e. If you played golf for 2 hours, that would count as 1 bout of mild exercise)**	☐

SECTION THREE: The following questions are related to **community-based physical activity**.

11. I have encouraged my students to be active in community-based physical activity programs (e.g. YMCA, Boys and Girls Club, local gym membership, community sports programs, Special Olympics, etc.)

Not at All				**Very Much**	No community program available
1	2	3	4	5	☐

12. Encouraging my students to participate in community based physical activity is:

a.	**Harmful**	1	2	3	4	5	**Beneficial**
b.	**Good**	1	2	3	4	5	**Bad**
c.	**Pleasant (for me)**	1	2	3	4	5	**Unpleasant (for me)**
d.	**Worthless**	1	2	3	4	5	**Useful**

13. In my community there are physical activity programs for my students (e.g. YMCA, Boys and Girls Club, local gym membership, community sports programs, Special Olympics, etc.)

Not at All				**Very Much**	No community program available
1	2	3	4	5	☐

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
14. I am doing something positive for my students by encouraging them to be active in community-based physical activity programs	☐	☐	☐	☐	☐
15. I intend to encourage my students to participate in community-based physical activity programs	☐	☐	☐	☐	☐
16. The ability to encourage my students to be active in community-based programs is beyond my control	☐	☐	☐	☐	☐
17. Parents/guardians of my students support me encouraging students to be active in community-based physical activities	☐	☐	☐	☐	☐
18. My school administrator(s) supports me encouraging students to be active in community-based physical activities	☐	☐	☐	☐	☐
19. I plan on encouraging my students to participate in community-based physical activity programs	☐	☐	☐	☐	☐
20. I am confident I can encourage my students to be active in community-based physical activity	☐	☐	☐	☐	☐
21. Other teachers in my department support me encouraging my students to be active in community-based physical activities	☐	☐	☐	☐	☐
22. I want to encourage my students to participate in community-based physical activity programs	☐	☐	☐	☐	☐
23. People of importance to me support me encouraging students to be active in community-based physical activity	☐	☐	☐	☐	☐

SECTION FOUR: The following questions are related to **extracurricular school-based physical activity**

24. I have encouraged my students to be active in extracurricular school-based physical activity programs (e.g. sports teams, intramurals, physical activity clubs, etc.)

Not at All				**Very Much**	No extracurricular program available
1	2	3	4	5	☐

25. At my school there are extracurricular physical activity programs for my students (e.g. sports teams, intramurals, physical activity clubs, etc.)

Not at All				**Very Much**	No extracurricular program available
1	2	3	4	5	☐

26. Encouraging my students to participate in extracurricular based physical activity is:

a.	**Harmful**	1	2	3	4	5	**Beneficial**
b.	**Good**	1	2	3	4	5	**Bad**
c.	**Pleasant (for me)**	1	2	3	4	5	**Unpleasant (for me)**
d.	**Worthless**	1	2	3	4	5	**Useful**

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
27. I am doing something positive for my students by encouraging them to be active in school-based extracurricular physical activities	☐	☐	☐	☐	☐
28. I plan on encouraging my students to participate in school-based extracurricular physical activity programs	☐	☐	☐	☐	☐
29. Other teachers in my department support me encouraging students to be active in extracurricular physical activities	☐	☐	☐	☐	☐
30. I intend to encourage my students to participate in school-based extracurricular physical activity programs	☐	☐	☐	☐	☐
31. I am confident I can encourage my students to be active in school-based extracurricular physical activity	☐	☐	☐	☐	☐
32. The ability to encourage my students to be active in school-based extracurricular physical activity is beyond my control	☐	☐	☐	☐	☐
33. My school administrator(s) supports me encouraging my students to be active in extracurricular physical activities	☐	☐	☐	☐	☐
34. Parents/guardians of my students support me encouraging my students to be active in extracurricular physical activities	☐	☐	☐	☐	☐
35. I want to encourage my students to participate in school-based extracurricular physical activity programs	☐	☐	☐	☐	☐
36. People of importance to me support me encouraging students to be active in extracurricular physical activity	☐	☐	☐	☐	☐

SECTION FIVE: The following questions are related to **physical activity homework**.

37. I have encouraged my students to be active by assigning regular physical activity homework

Not at All				**Very Much**
1	2	3	4	5

38. Encouraging my students to be active by assigning regular physical activity homework is:

a.	**Harmful**	1	2	3	4	5	**Beneficial**
b.	**Good**	1	2	3	4	5	**Bad**
c.	**Pleasant (for me)**	1	2	3	4	5	**Unpleasant (for me)**
d.	**Worthless**	1	2	3	4	5	**Useful**

39. I know how to assign physical activity homework to my students

Don't Know 1 2 3 4 5 **Know Well**

40. I know age appropriate physical activities for my students

Don't Know 1 2 3 4 5 **Know Well**

41. I know the CDC physical activity recommendations for my students

Don't Know 1 2 3 4 5 **Know Well**

42. I know NASPE physical activity recommendations for my students

Don't Know 1 2 3 4 5 **Know Well**

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
43. My school administrator(s) supports me encouraging students to be active by assigning regular physical activity homework	☐	☐	☐	☐	☐
44. Encouraging my students to be active by assigning regular physical activity homework is beyond my control	☐	☐	☐	☐	☐
45. People of importance to me support the assigning of physical activity homework to encourage my students to be active	☐	☐	☐	☐	☐
46. I plan on assigning regular physical activity homework	☐	☐	☐	☐	☐
47. I am doing something positive for my students by assigning regular physical activity homework	☐	☐	☐	☐	☐
48. I intend to assign regular physical activity homework	☐	☐	☐	☐	☐
49. I want to assign regular physical activity homework	☐	☐	☐	☐	☐
50. Parents/guardians support me encouraging students to be active by assigning regular physical activity homework	☐	☐	☐	☐	☐
51. Other teachers in my department support me encouraging my students to be active by assigning regular physical activity homework	☐	☐	☐	☐	☐
52. I am confident I can encourage my students to be active by assigning regular physical activity homework	☐	☐	☐	☐	☐

Thank you very much for your participation in this survey

Do you teach physical education?

Get involved with research &

participate in a survey...

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