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Relationship Between Physical Activity and Stress Among Junior High School Students in the Physical Education Environment

David C. Barney
Brigham Young University, david_barney@byu.edu

Frank Pleban
Tennessee State University, fpleban@tnstate.edu

Terrance Lewis
Tennessee State University, lewisterrance1@gmail.com

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Abstract

The study purpose was to explore grade level differences (7th, 8th, and 9th) among junior high school students' perception of participation in physical education class on individual environmental stress. Physical activity's role as a stress reduction tool has been well documented. However, physical activity as a stressful event in the school and physical education environment has been less established; particularly in junior high school students. Study participants were comprised of 872 junior high school students, 585 males (67%) and 287 females (33%), enrolled in four junior high schools. Stratified by grade, 315 7th grade students (228 males and 87 females) (M = 1.28, SD = .448), 281 8th grade students (204 males and 77 females) (M = 1.27, SD = .447), and 276 9th grade students (153 males and 123 females) (M = 1.45, SD = .498) responded. By grade level, significant differences ($p < .05$) were reported for five of the twelve scaling questions. In general, 7th graders were more likely to respond they could better handle stress after participating in PE class, looked forward to coming to their physical education, reported lower stress levels before arrival to PE class, and reported lower stress levels after participation in PE class, than 8th and 9th graders. Altogether, follow-up qualitative finding reported three major themes regarding the physical education environment and stress. Physical education acted as a stress mitigation mechanism and an opportunity for social bonding. Qualitative findings also referenced classmates as a negative stress mechanism in the physical education environment.

Key Words: Stress, Physical Education, Junior High School Student

Introduction

Every person, at some point in time and at varying degrees, experiences stress. According to Grant et al. (2003), stress has been defined as "…environmental events or chronic conditions that objectively threaten the physical and/or psychological health and well-being of individuals of a particular age in a particular society" (p. 462). Because stress is an inevitable part of life, an individual needs to be equipped with healthy mechanisms to combat stressors. Physical activity is one positive stress management method to address life stressors (Aherne, 2001; Barney, Benham, & Haslem, 2014; Haugland, Wold, & Torsheim, 2003).

Literature specific to the relationship between physical activity and stress has indicated that physical activity is a likely mediator between stress and health (or illness) (Gill, 1994). Physical activity has been associated with a reduced psychological stress response (Rejeski, Thompson, Brubaker, & Miller, 1992) and decreased physiological responsiveness to physical and psycho-social stressors (Blumenthal et al., 1989; Dishman, 1994; Petonnet & Szabo, 1993; Rimmele, 2007); resulting in psychological and physiological benefits enabling individuals to more effectively cope with stress (Fleshner, 2005; Taylor, 2000). Conversely, less active or non-active individuals tend to experience more susceptibility to the adverse influences of life stress (Crews & Landers, 1987), increased illness when experiencing negative life events (Brown, 1991), and slower recovery from stressful events (Crews & Landers, 1987).

Stress Response to Physical Activity in the Physical Education (PE) Environment

Physical activity levels, through participation in sports or structured physical activities, and stress levels were investigated in a sample of Norwegian adolescents. Results indicated changes from low physical activity levels to moderate or high levels of physical activity was associated with lower levels of reported stress (Moljord, Moksnes, Ericksen, & Espenes, 2011).

Haugland, Wold, & Torsheim, (2003) surveyed adolescents and compared their perceived school-related stress and leisure-time physical activity outside of school. Participants who reported school-related stress were less likely to report health complaints if they participated in leisure physical activities every week.

Research has also investigated physical activity on stress in college-aged students. Barney, Benham, & Haslem (2014) investigated college student's perceptions regarding the effects of participation in physical activity courses on life stressors in a sample of 350 college students. Study findings suggested that a college student's participation in physical activity classes helped to mediate life stressors. Specifically, college students felt that participation in physical activity courses helped accomplishing other academic assignments. As well, this sample perceived that college student participation in physical activity helped in better handling of other life stressors.

In adolescence, physical activity can be used as the vehicle to better control personal stress. For many adolescents, common life stressors include bullying (O'Neill, 2017), family dynamics (Aherne, 2001), peer influences (Allan & Lawless, 2003), perceived expectations of self and from others (Deutsch & Schwertz, 2011), and difficulty in time management (Gonzalez, Hooper, Lee, & Lin, 2010). Yet, within the school context, physical education classes provide students with opportunities to be physically active; possibly helping to mitigate daily stress. Lang et al. (2016) developed a physical education stress coping program for German speaking vocational students in Switzerland titled Effects of a Physical Education Coping Training (EPHECT). The primary purpose of EPHECT was to foster resilience through the development of an individual and adequate coping repertoire. Physical education teachers in the EPHECT program completed eight modules specific to module implementation into their regular physical

education lessons. Students were instructed to perform motor leaning tasks followed by a short reflection moderated by the physical education teacher. Findings suggest implementation of the EPHECT program in PE classes can make positive contributions to help vocational students develop adaptive coping (Puhse & Gerber, 2005).

Physical Activity as a Stressful Event in the Physical Education Environment

Physical activity's role as a stress reduction mechanism has been well documented. However, physical activity as a stressful event in the school and physical education environment has been less established. Little research has addressed physical education in the school environment as producing student stress; as well as ways to decrease its stressful effects (Back, 2015; Blankenship, 2013; Currie & Sumich, 2014; Gerber, 2009; Ho, Chiang, & Lin, 2016; Ishii & Osaka, 2010; Lee, Kang, & Kim, 2017). Table 1 presents systematic review findings of studies addressing student exposure to stress in the physical education environment across primary and secondary grade levels.

Insert Table 1 Here

Across all grade levels, Currie and Sumich (2014) outline several strategies in reducing stress and anxiety in physical education, in general. Positive class climate, promoting humanistic values, tolerance, individual expression, student choice, and self-evaluation are suggested for reducing PE stress. Two studies were identified addressing stress and physical education (Back, 2015; Lee, Kang, & Kim, 2017). Back (2015) reported a negative correlation between academic stress and school physical education in high school students; with a partial mediating effect between the relationship of attitudes toward physical education and psychological well-being.

Lee, Kang, & Kim (2017) reported a correlation between high stress and athlete satisfaction and burnout.

Four studies were identified addressing stress in physical education class and junior high school students (6^{th}-9^{th} grades) (Blankenship, 2015; Gerber, 2009; Ho, Chiang, & Lin, 2016; Ishii & Osaka, 2010). Ho, Chiang, & Lin (2016) identified stress in junior high physical education to athletic training and competition; with Ishii & Osaka (2010) identifying exercise in-and-of-itself as a stress-inducing agent. Additionally, Ishii and Osaka (2010) reported that junior high school students who disliked physical education and sport did not benefit from stress-reducing potential of physical education. Gerber (2009), similar to Ishii and Osaka (2010) identified that stressful junior high school physical education experiences negatively impacted positive attitudes towards physical activity and PE. Junior high school physical education experiences leading to increased class stress included: issues with a teacher or classmates, psychological and physical violence, pain or discomfort, poor classroom organization and class structure, and low perceived ability or consistent feelings of failure (Gerber, 2009).

A review by Blankenship (2013) addressed several methods, similar to Currie and Sumich (2014) to reduce stress during junior high PE, including: creating developmentally appropriate tasks, private practice sessions, the use of stations, practice sessions, creating a motivational climate, and changing student perceptions of demands and abilities.

Materials and Methods

For this study the salutogenic approach conceptual framework was utilized (Quennerstedt, 2008). The salutogenic conceptual framework is not about what health is, but pays attention to resources in the creation, preservation, and development of health. Quennerstedt stated:

> Physical activity and movement can be regarded as something more than mere protection against disease or overweight, and by posing salutogenic questions we can enrich our understanding of the relation between physical activity and health, and in consequence richness to the perspective of health in physical education. (p. 277)

For the purpose of this study the 'resources' was the physical education class. It is implied that physical education class can serve as a way to help students maintain and control their stress. The purpose of this study was to investigate what extent do grade level differences (7^{th}, 8^{th}, and 9^{th}) exist among junior high school students' perception of participation in physical education class on individual environmental stress.

Participants

For this study, 822 junior high school students (585 males and 287 females) from four intact junior high schools, three from Utah and one from California, were sampled. Student ages ranged 11 to 15 years. Grade levels for all four junior high schools encompassed of 7^{th}, 8^{th}, and 9^{th} grades. Stratified by grade level, 315 7^{th} grade students (228 males and 87 females), 281 8^{th} grade students (204 males and 77 females), and 276 9^{th} grade students (153 males and 123 females) responded to the survey instrument.

Study Question

1. To what extent do grade level differences exist among junior high school students' perception of participation in physical education class on individual environmental stress?

Instrumentation

Through a review of the literature, investigators did not identify an instrument specific to physical education class and stress related to junior high school students. For this study, a 12-

question survey instrument was developed. The survey consisted of six questions with yes/no/sometimes response options (two of six yes/no/sometimes response questions contained qualitative follow-up), three questions with Likert scale response options (1=low; 2=medium; 3=high; and 4=very high) (one of the three Likert scale response questions contained qualitative follow-up), and three demographic questions. To establish content validity, junior high aged students reviewed survey questions for clarity and understanding. For reliability, the instrument was pilot-tested on junior-aged students who did not participate in this study.

Participants answered questions regarding physical education and stress indices (questions 3-8), self-reported stress levels before and after physical education class (questions 9 and 10) , and self-perception of participation in physical education for daily stress management (question 11).

Procedures

Convenience sampling was employed to collect data for this study. Before study implementation, investigators contacted the junior high physical educators explaining both the study and survey. After securing agreement from the physical educators, the researchers had them administer the surveys to their student. Before survey administration, the physical educators explained the study to their students. Prior to data collection, the physical educators were instructed on survey administration. Completion of survey, explanation and administration took approximately 15 minutes.

Prior to any survey distribution and data collection, university Institution Review Board (IRB) reviewed study protocol and granted approval to conduct the study. All participants were subsequently assured that their voluntary decision to participate or not participate in the study would not affect their grade in class or class standing. A 98% survey response rate was recorded.

The school's classes ran on block schedule, A-day/B-day with class lasting approximately 80 minutes, from bell to bell. Quantitative and qualitative data were analyzed regarding junior high school students' experiences with physical education class and individual stress. Only observed data were used for quantitative and qualitative analyses.

Quantitative Research Design

The study was quasi-experimental mixed-methods design. Data were collected in the form of survey from 872 participants (junior high school students), 585 males (67%) and 287 females (33%), enrolled in four junior high schools. Stratified by grade level, 315 7^{th} grade students (228 males and 87 females) (M = 1.28, SD = .448), 281 8^{th} grade students (204 males and 77 females) (M = 1.27, SD = .447), and 276 9^{th} grade students (153 males and 123 females) (M = 1.45, SD = .498) responded to the survey instrument.

The following survey questioners were considered for analyses:

1. *"When I come to this physical education class, I forget about what is stressing me out?"* (question 3)
2. *"After participating in the class activities, I feel I can handle what is stressing me out?"* (question 5)
3. *"I look forward to coming to my physical education class?"* (question 6)
4. *"Rate your stress when you arrive to your physical education class."* (question 9)
5. *"Rate your stress after you have finished participation in your physical education class."* (question 10)

The response choices given for question 6 were: Yes, No, or Sometimes. The Likert scaling response choices given for questions 9 and 10 were: (1=low; 2=medium; 3=high; and 4=very high)

Quantitative Data Analysis

Analyses were performed on student response data to the survey instrument. Quantitative data analysis consisted of a Pearson's Chi-Squared Tests (χ^2); as well as measures of central tendency and dispersion. Chi-Square Tests were conducted used to compare stress in the physical

education environment stratified by grade level and significant effects reported. Chi-Squares, levels of significance ($p < .05$) were reported for all significant effects. SPSS Statistics 21 was used for analyses. Only observed data values were used for these summaries. Significant differences were reported for three (questions 3, 5, 6, 9, and 10) of the nine scaling questions when compared to grade level.

A Chi-Square Tests showed that there was a statistically significant difference by grade level in questions related to physical education and stress between grade levels. Question 3 *"When I come to this physical education class, I forget about what is stressing me out?"* indicated an association by grade level, with 7th graders ($M = 1.70$, $SD = .877$), 8th graders ($M = 1.96$, $SD = .782$), and 9th graders ($M = 2.02$, $SD = .903$); χ^2 (4, $N = 872$) = 12.53, $p < .01$. Cramer's V effect size was .085, representing a small effect. Students in 7th grade were more likely to forget about stress (37.1%), than 8th (36.5%) and 9th (26.4%) grade students when coming to PE class. (Figure 1) Question 5 *"After participating in the class activities, I feel I can handle what is stressing me out?"* indicated an association by grade level, with 7th graders ($M = 1.66$, $SD = .856$), 8th graders ($M = 1.92$, $SD = .772$), and 9th graders ($M = 2.16$, $SD = .906$); χ^2 (4, $N = 872$) = 17.41, $p < .01$. Cramer's V effect size was .100, representing a small effect. Students in 7th grade were more likely to respond that they could better handle stress (41.7%), than 8th (31.5%) and 9th (26.9%) grade students after participating in PE class. (Figure 2) For question 6 *"I look forward to coming to my physical education class?"* indicated an association by grade level, with 7th graders ($M = 1.50$, $SD = .838$), 8th graders ($M = 1.40$, $SD = .805$), and 9th graders ($M = 1.78$, $SD = .940$); $\chi 2$ (4, $N = 872$) = 25.23, $p < .0001$. Cramer's V effect size was .120, representing a small effect. Students in 7th grade were more likely to look forward to coming to their physical education class (38.0%), than 8th (36.5%) and 9th (26.4%). (Figure 3) For question

9 *"Rate your stress when you arrive to your physical education class."* indicated an association by grade level, with 7th graders (M = 1.68, SD = .798), 8th graders (M = 1.69, SD = .798), and 9th graders (M = 1.93, SD = .959); χ^2 (4, N = 872) = 23.54, $p < .001$. Cramer's V effect size was .116, representing a small effect. Students in 7th reported lower stress levels before arrival to PE class (38.8%), than 8th (33.3%) and 9th (27.9%). (Figure 4) For question 10 *"Rate your stress after you have finished participation in your physical education class."* indicated an association by grade level, with 7th graders (M = 1.45, SD = .766), 8th graders (M = 1.47, SD = .820), and 9th graders (M = 1.71, SD = .911); χ^2 (4, N = 872) = 21.04, $p < .01$. Cramer's V effect size was .110, representing a small effect. Students in 7th grade also reported lower stress levels after participation in PE class (38.7%), than 8th (34.8%) and 9th (26.5%). (Figure 5)

Insert Table 2 Here

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Insert Figure 5 Here

Qualitative Follow-Up Data Analysis

Additional data results were comprised of short-answer responses from the study participants. Thematic analysis and findings reported for 4 of the 12 survey questions (questions 4, 7, 8, and 11). Participants were asked to explain and expound their responses to the four open-ended questions. Thematic content analysis performed on open-ended responses. Referencing qualitative analysis, researchers read and re-read content until common themes became evident for each survey question. Responses were first examined using inductive content analysis (Lincoln & Guba, 1985 & Sarvela & McDermott, 1983) in order to identify emerging themes. A constant comparative method (Glasser and Strauss, 1967) was employed, first to categorize then compare and contrast each unit of information with all other units of information with the intent of linking those with similar meanings (Patton, 2002).

Participants answered questions regarding stress indices: stress after completion of physical education class (question 4), stress reduction after participation in physical education class (question 7), stress from participation in physical education class (question 8), and participation in physical education class in managing life stressors (question 11). Analysis revealed three major themes: (a) stress mitigation from physical education, (b) social bonding from physical educatioin, and (c) PE classmates as negative stress in physical education. (Figure 6)

Insert Figure 6 Here

Stress Mitigation After Participation in the Physical Education Environment. Participant responses focused on the mitigation of stress after participating in physical education: "Sometimes I forget about my stress, often doing fun things in PE.", "Yes, because I think physical activity is healthy and when I run or do physical activities, it helps get my mind off things and is like therapy.", "When I have fun I forget about the things that stress me.", "Running makes me calm.", and, "After working out, my brain is empty and refreshed and ready for the next class."

Social Bonding as Stress Reduction in the Physical Education Environment. Referencing social bonding as a stress reducer, responses included: "Because I can talk to friends, and physical activity can help me forget about stress.", "I get to hang out with my friends and talk to them about life.", and "I talk to my friends and play sports."

One minor theme that arose from was, for stress reduction during class, stress reduction in PE was contingent on activity type. Statements included: "If I enjoy the activity and get into what's happening during PE, it occasionally takes my mind off of my stress.", and "Depends on what we do in PE class."

Classmates as Negative Stress in the Physical Education Environment. Conversely, to the major theme of social bonding, participant responses focused on classmates as producing stress in the physical education environment: "Classmates are too much.", "I don't like some kids in my class.", and concise responses such as "Bullies!"

Discussion

The purpose of this study was to explore grade level differences (7th, 8th, and 9th) among junior high school students' perception of participation in physical education class on individual environmental stress. Findings suggest PE class helped junior high school students

with stress in their lives, particularly among 7th grade students. In general, 7th graders were more likely to respond they could better handle stress after participating in PE class, looked forward to coming to their physical education, reported lower stress levels before arrival to PE class, and reported lower stress levels after participation in PE class, than 8th and 9th graders. Overall, follow-up qualitative findings also helps support quantitative results. For reference, when students left PE class they felt their participation in class activities helped them "be more calm", "distracted me from my worries" and helped get "their mind off things." Moljord et al. (2011) studied the relations of physical activity, stress, and happiness in a sample of Norwegian adolescents, 13 to 18 years old. Moljord et al. (2011) reported adolescents with moderate or high physical activity levels reported lower stress and higher happiness than adolescents with lower physical activity levels.

Another point of discussion references participants expressing their feelings and thoughts in regards to PE class helping them lessen stress experienced from daily stress. Sharp and Barney (2016) studied the effects of stress in college students attending a university that did not require physical activity classes for graduation compared to students attending a university requiring students to take physical activity classes for graduation. Students participating in physical activity classes recorded the following statements, "I still have stress, but physical activity helps", "I would be more cranky and restless without it", "I feel I am in a better mood and can handle situations better", and "It relieves my stress and problems so I can encounter them." Finds parallel with previous research, while adding to the literature supporting one potential beneficial mechanism for adolescents to address stress.

One of the main goals of physical education is to make activities and games fun and enjoyable (NASPE, 2009). Yet, historically physical educators have used inappropriate

instructional practices in activities and games that have not been fun and enjoyable for students. Thus, possibly creating or adding stress for the student. Barney, Pleban, Fullmer, Griffiths, Higginson, & Whaley (2016) studied exercise as punishment in physical education class and its effects on former students' attitudes. Participants were interviewed about their past PE experiences and the use of exercise as punishment. Participants were asked, "Was the overall classroom environment affected when students had to exercise as punishment?" Overwhelming, participants reported "yes", the classroom environment was negatively affected. Additional statements included, "The atmosphere usually became tense", "It's awkward to watch", "It scares the group or makes them feel uneasy", and "It made us fear the teacher." Student responses do not specifically address stress from exercise and punishment, yet the responses alluded to the notion that these experiences did not create a positive learning environment.

Implications for Physical Education Teacher Education Programs

The salutogenic conceptual framework states, "understanding of the relation between physical activity and health and in consequence richness to the perspectives of health in physical education" (Quennerstedt, 2008). After data and thematic content analyses, junior high school students participating in PE class tend to report better stress management. Another implication from this study is that PE teachers should be mindful of activities students can participate in that will be most beneficial in helping students relieve stress in their lives. Table 2 outlines Physical Education Teacher Education Program guidelines and their proposed associated effects on student stress in the physical education environment.

Insert Table 2 Here

Additionally, Pangrazi and Beighle (2013) suggested when students enter class they should be engaged in activity; with active teacher interaction.

One last implication of this study that Physical Education Teacher Education (PETE) faculty should be mindful of their preparing PETE majors and that benefits that can come to their students through participation in class activities thus resulting in managing stress in their lives. When the PETE major graduates and teaches their own classes, they can use this information to better inform parents, administrators, and the classroom teachers the benefits of student's activity in PE class and throughout the student's life.

Study Limitations

Investigators have noted certain limitations to this study. Four junior high schools from two states participated in this study. The four junior high schools in this study were from two states. Because the participants came from certain locales and grade levels, it may not allow a representative sampling of participants from other schools, grade levels, or in other geographic regions, thus limiting the generalizing of the findings. Thus, themes, conclusions, and implications are mostly applicable to those participant demographics. Research on refining physical education teacher education and the physical education environment needs to be continued in new meaningful directions. Physical education teacher education research should continue incorporate diverse investigation methodology in order to better examine the environmental factors in the physical education environment (Hassandra, Goudas, & Chroni, 2003). In order to identify more robust causal relationships between stress and physical activity, a longitudinal study design would be needed.

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Table 1
Student exposure to stress in the physical education environment across primary and secondary grade levels

Title	Author(s)	Publication Date	Study Country	Study Design	Grade Level/Age	Sample Size	Assessment Method	Outcome(s)
Changes in Satisfaction with Physical Education and Intrinsic Sport Motivation as a Function of Chronic Stress Experiences in Physical Education Classes	Gerber	2009	Switzerland	Cross-sectional	Junior High (6^{th} to 9^{th} grade)	302 boys & girls	Survey	1. Stress negatively affected intrinsic motivation & contributed to reduced PE satisfaction levels. 2. Stressful experiences in PE impacted positive attitudes towards physical activity & PE: • problems with teacher or classmates • psychological & physical violence • pain during or after PE • poor organization & class structure • low perceived ability or consistent feelings of failure.
Physical Education and the Degree of Stress	Ishii & Osaka	2010	Japan	Cross-sectional	Junior High	268 (129 boys, 139 girls)	Survey	1. Students who disliked physical education & sports did not benefit from stress-reducing potential of exercise & sport. 2. Exercise may be stress-inducing agent.
The Stress Process in Physical Education	Blankenship	2013	USA	Review	7^{th} grade	N/A	N/A	1. Reducing stress during PE: • Create developmentally appropriate tasks • Arrange private practice sessions • Use stations • Maximize practice • Create a task-involved motivational climate • Identify students with low perceived competence/high trait anxiety

								• Change student perceptions of demands & abilities • Teach relaxation techniques.
Creating Stress-Free Learning Environments for Sport and Physical Education	Currie & Sumich	2014	Australia	Review	All Grades / Non Identified	N/A	N/A	1. Reducing anxiety in PE: • Ensure positive class climate with zero-tolerance for bullying • Promote humanistic values • Build tolerance • Encourage free, creative, individual expression • Establish 80% success rate to build confidence • Allow student choice or offer activities rated high enjoyment • Permit students to self-evaluate & measure results.
The Mediating Effects of Hope Between Attitude Toward School Physical Education, Academic Stress, Ego-Resilience, and Psychological Wellbeing of High School Students	Back	2015	Korea	Cross-sectional	High School (ages 14 to 18 years)	780*	Survey	1. Positive correlation toward school PE: attitude toward school physical education, academic stress, ego-resilience, & psychological well-being. 2. Negative correlation toward school PE: academic stress. 3. A partial mediating effect between youth attitude toward school PE & academic stress, ego-resilience, & psychological well-being.
A Study on Relation Between Stress and Coping Strategies of Junior High School Students in the Physical Education Programs	Ho, Chiang, & Lin	2016	Taiwan	Cross-sectional	Junior High	589 boys & girls	Survey	1. Junior high student stress in PE related to PE athletic training & competition. 2. Significant differences in gender, grade, competition level, sports, & experience

								been in physical education programs. Positive correlation between stress identification & application of coping strategy.
Relationships Among Stress, Burnout, Athletic Identity, and Athlete Satisfaction in Students at Korea's Physical Education High Schools: Validating Differences Between Pathways According to Ego Resilience	Lee, Kang, & Kim	2017	Korea	Cross-sectional	High School	332 (225 boys & 107 girls)	survey	1. High stress correlated with burnout & high levels of burnout negatively related to athletic identity & athlete satisfaction.

Note. N/A = Not Applicable.

*Gender not identified.

Table 2
Physical Education Teacher Education Program Guidelines Impacting Stress in the Physical Education Environment

Stress Promoting Experiences in Physical Education	Stress Mitigating Experiences in Physical Education
• Problems with teacher or classmates. • Psychological & physical violence. • Pain during or after PE. • Poor organization & class structure. • Low perceived ability or consistent feelings of failure. (Gerber, 2009)	• Create developmentally appropriate tasks. • Arrange private & maximize practice sessions. • Use of stations. • Create a task-involved motivational climate. • Encourage free, creative, individual expression • Ensure positive class climate with zero-tolerance for bullying. • Identify students with low perceived competence/high trait anxiety. • Establish 80% success rate to build confidence. • Allow student choice or offer activities rated high enjoyment • Change student perceptions of demands & abilities. • Permit students to self-evaluate & measure results. • Teach relaxation techniques. • Promote humanistic values. 1. Build tolerance. (Blankenship, 2013; Currie & Sumich, 2014)

Figure 1. Response Rates by Grade Level for Question 3

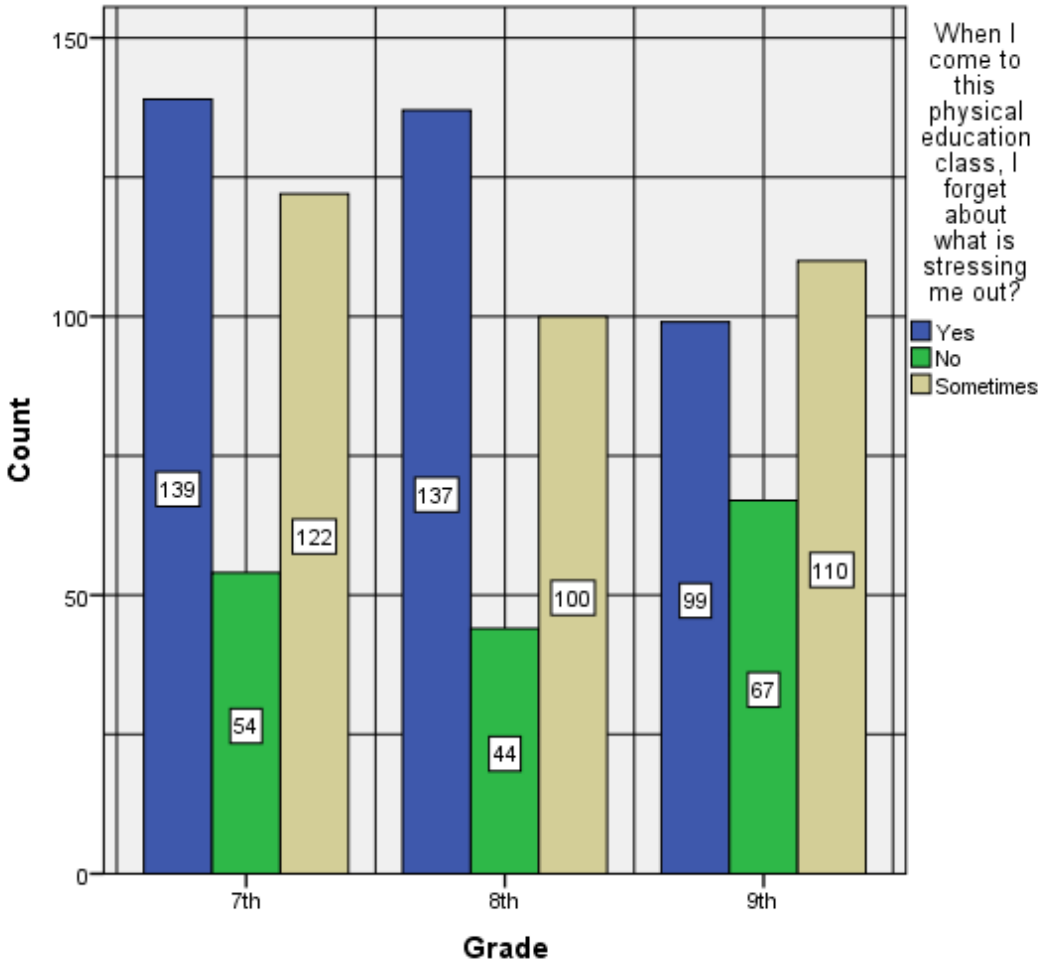

Figure 2. Response Rates by Grade Level for Question 5

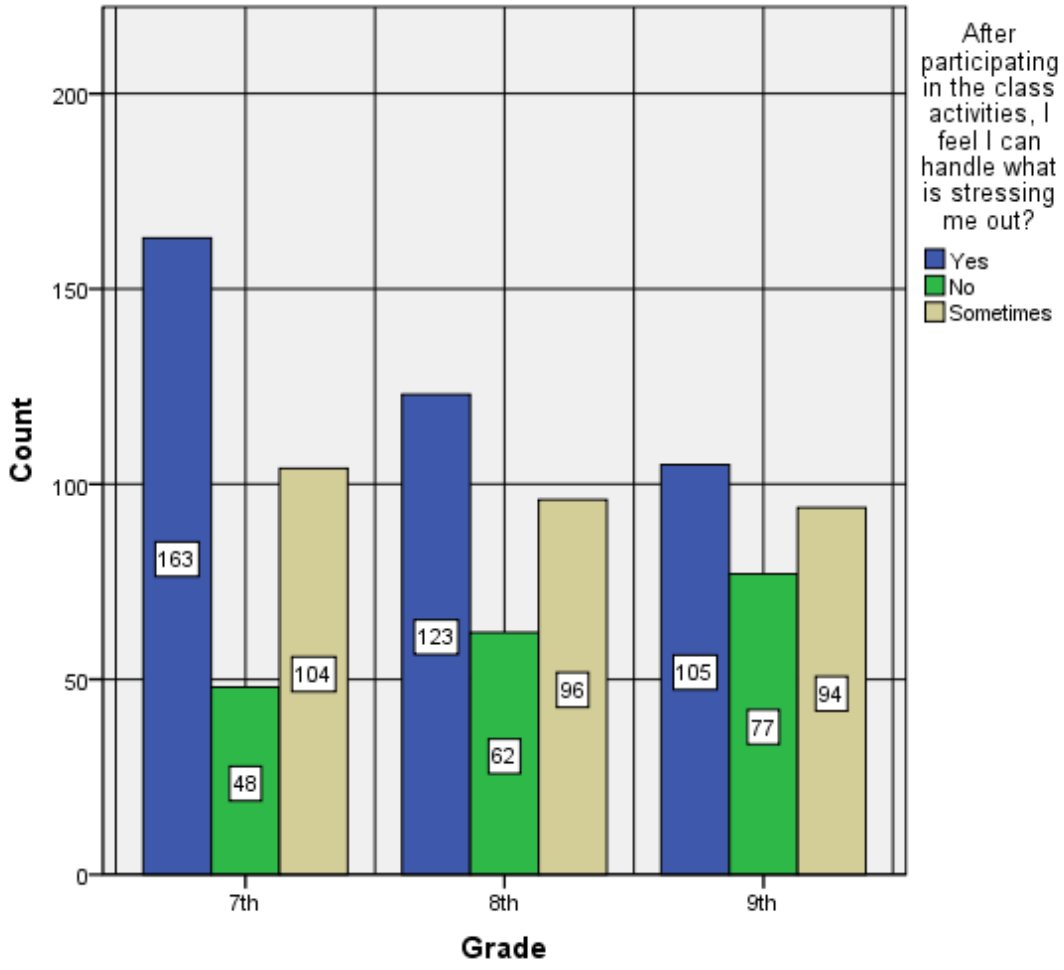

Figure 3. Response Rates by Grade Level for Question 6

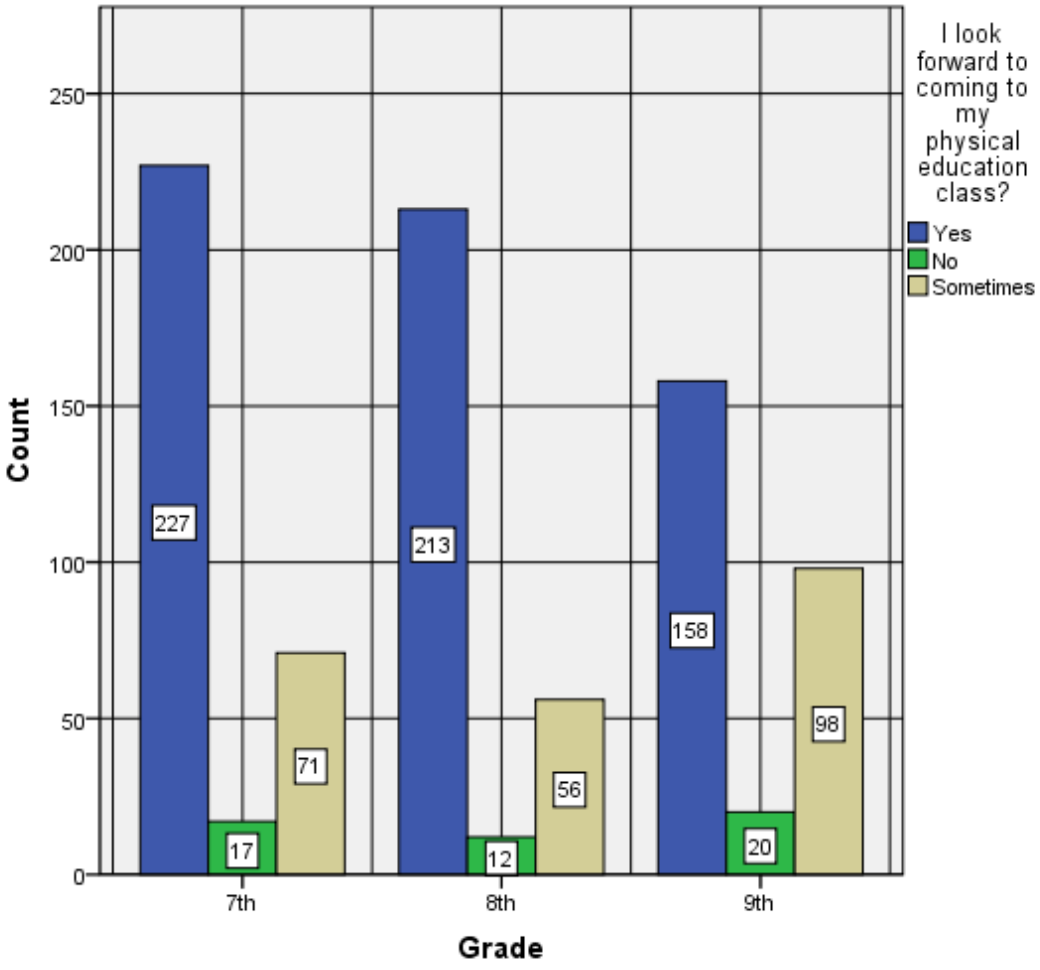

Figure 4. Response Rates by Grade Level for Question 9

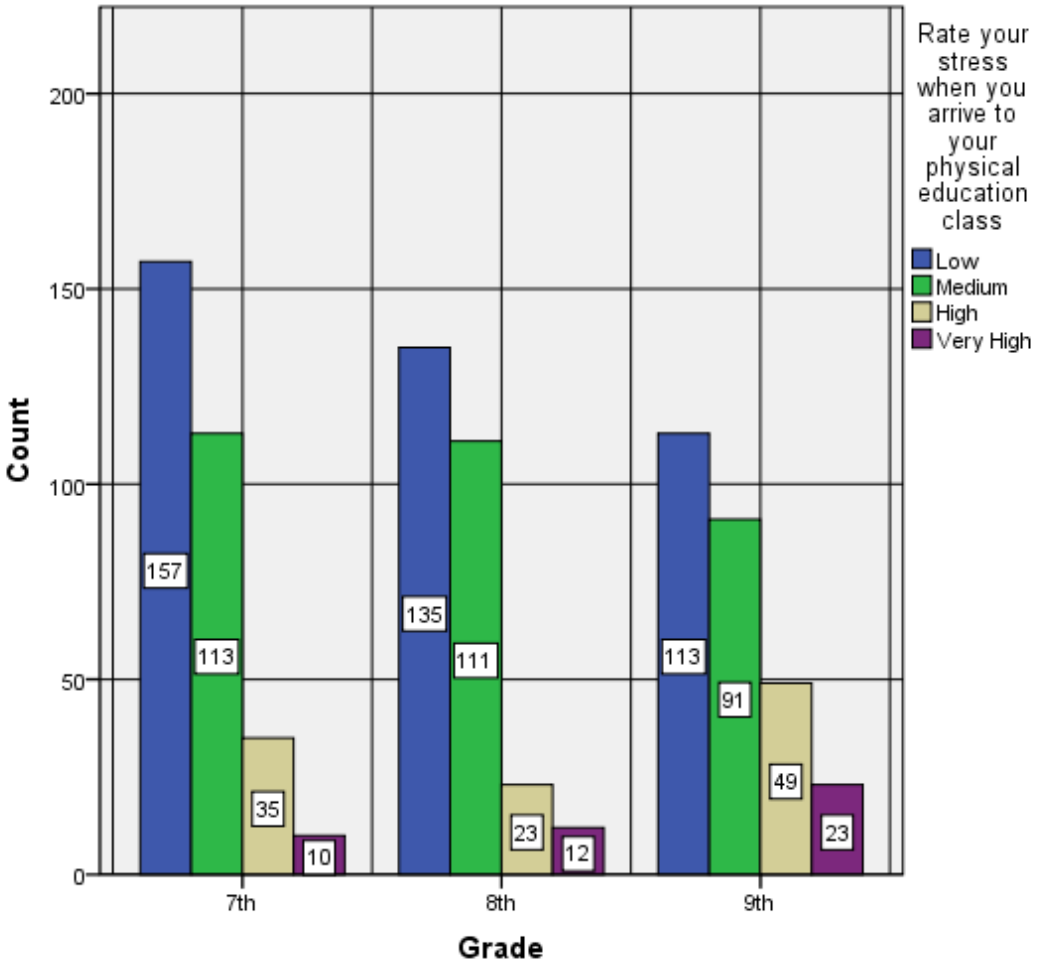

Figure 5. Response Rates by Grade Level for Question 10

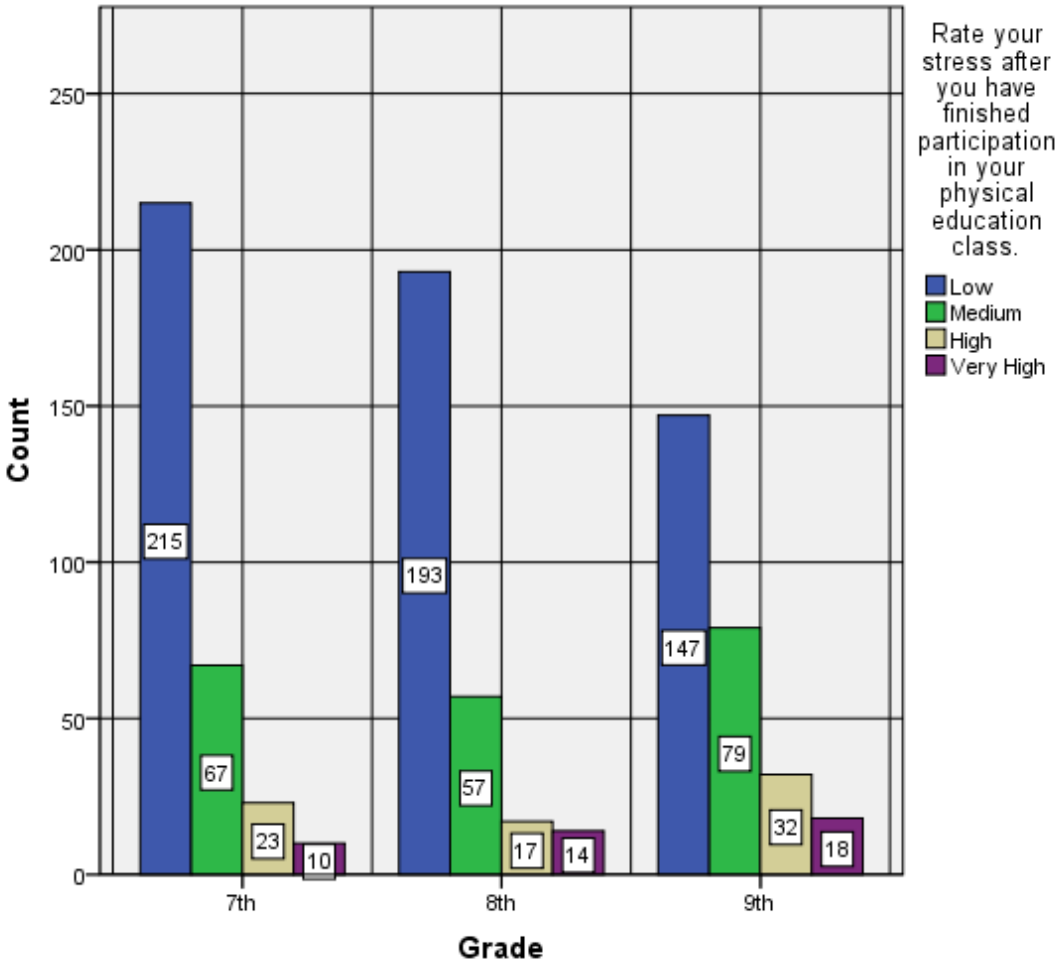

Figure 6. Stress in Physical Education: Major and Minor Themes