Moral Disengagement and Student Misbehavior in Physical Education

Wei-Ting Hsu [1] and **Yi-Hsiang Pan** [2]✉
[1] Center for General Education, Fo Guang University, Taiwan
[2] Graduate Institute of Physical Education, National Taiwan Sport University, Taiwan

Abstract
This study examined how mechanisms of moral disengagement (MD) were related to students' self-reported misbehaviors. Participants were 282 and 336 high school students enrolled in physical education classes. In Stage 1, results of regression analysis showed that advantageous comparison and non-responsibility positively predicted four misbehaviors (i.e., low engagement, failure to follow directions, poor self-management, and distracting behavior). In Stage 2, results of the structural equation modeling confirmed that advantageous comparison and non-responsibility were the significant predictors of student misbehavior in physical education. It is suggested that prevention and intervention programs should address students' advantageous comparison (e.g., compared to skipping class, it is not a big deal to be shirking in class) and non-responsibility (e.g., no one is taking the class seriously; I am just one of them) to reduce misbehaviors in the physical education context.

Key words: Classroom management, instruction in physical education, youth development.

Introduction

In the context of physical education, some troubling behaviors such as shirking, skipping class, idleness, disrespect, and talking out of turn have a negative impact on the learning environment (Goyette et al., 2000; Kulinna et al., 2006). More seriously, aggressive behaviors such as bullying and fighting with others occasionally occur during a physical education class (Weiss et al., 2008). Studies on physical education have showed that students' negative behavior not only affects teaching quality but it also interferes with peer learning (Cothran et al., 2009; Kulinna et al., 2006). Therefore, it is important to identify ways to reduce students' misbehaviors in physical education.

Current studies on students' misbehaviors in physical education have concentrated on behavior types and development of measurement tools. For example, Goyette et al. (2000) categorized students' negative behaviors in physical education into three types. In terms of measurement tool development, a more representative study is the Physical Education Classroom Instrument (PECI) developed by Cothran and Kulinna (2007). The PECI is a self-reported scale comprising 59 questions and 6 factors. In order to enhance the usability of tests, Krech et al. (2010) simplified the PECI and proposed a short-form version that modified the original six-factor PECI into a five-factor scale with 20 items. In terms of follow-up extended studies, Agbuga et al. (2010) adopted the PECI to examine the correlation between achievement goal orienta-

tion and negative behaviors of students. Their results showed that students' performance orientation can positively predict various negative behaviors and mastery orientation can negatively predict various negative behaviors in physical education. Additionally, this study revealed that, if students' achievement goal orientation is aligned towards the performance orientation, negative behaviors are more likely to emerge. Conversely, if students' achievement goal orientation is aligned towards mastery orientation, negative behaviors are less likely to emerge. These studies have made a great contribution to the literature on student misbehavior in physical education.

However, although a number of studies have been conducted on students' behaviors (Cothran and Kulinna, 2007; Cothran et al., 2009; Kulinna et al., 2006) and ideal measurement tools have been developed (Krech et al., 2010), the existing research on students' misbehaviors does not provide sufficient insight into the antecedents of the misbehavior. More specifically, since we have not yet been able to explain the psychological mechanism of students' display of misbehaviors, current strategies of physical education class management are mostly derived from practical experience, rather than theory-based research results. Considering the inadequate research results on this issue, it is necessary to explore students' psychological mechanisms contributing to their misbehaviors in physical education through a theoretical framework.

One approach to guide this investigation is the mechanism of moral disengagement proposed by Bandura (1991). After a comprehensive review of literature on moral issues (Kavussanu, 2008), moral disengagement has been identified as a psychological mechanism that can explain the misbehaviors of individuals. Bandura's (1991) social cognitive theory identifies various psychosocial factors, including the consequences of one's actions, in defining behavior as moral. He also describes how moral conduct is regulated. Individuals may experience guilt or pride when engaging in moral behaviors, depending on the nature of their behaviors. Such reactions result from self-monitoring and judgment regarding these actions. Although this process is thought to regulate moral conduct, individuals do not always act the way they should. While conducting the behaviors that are contrary to one's moral reasoning, one may selectively adopt the mechanisms of moral disengagement to avoid self-evaluative emotional reactions, such as guilt. Additionally, some psychosocial mechanisms in moral disengagement allow individuals to cognitively construe transgressive behaviors into benign or laudable acts (Bandura, 1991). There-

fore, the mechanisms of moral disengagement proposed in Bandura's (1991) social cognitive theory were adopted as the framework in the current study, to examine the antecedents of student misbehavior in physical education.

Bandura (1999) specifically proposed the following eight mechanisms of moral disengagement. (1) Moral justification: this mechanism involves the cognitive reconstruction of behaviors. People do not ordinarily engage in harmful conducts unless they morally justify such actions. In this process, aggressive behaviors are made morally and socially acceptable by attaching them with social worth or moral purposes (i.e., reframing a personal attack against opponents during a game as a means to honor the team). (2) Euphemistic labeling: euphemistic language is frequently used to make consequences of harmful conducts less unpleasant and more acceptable by concealing aggressive behaviors in innocent or sanitizing parlance (i.e., saying "I am only letting my emotions out" when pushing or provoking others). (3) Advantageous comparison: in this mechanism, behaviors are compared against counterparts that are more serious. By exploiting the contrast principle, reprehensible behaviors can be made more acceptable (i.e., comparing cursing with injuring others in order to highlight its harmless nature). (4) Displacement of responsibility: individuals view their aggressive behaviors as the result of the demands of authorities or social pressure, and not their personal responsibility. Thus, as the individual is not viewed as the actual agent of such actions, the self-condemning reactions can be spared (i.e., a foul made by the player was demanded by the coach). (5) Diffusion of responsibility: the sense of responsibility may be diffused by division of labor, group decision-making, or group action. Individuals may act more ruthlessly in a group because their actions may not be held personally accountable. (i.e., "Everyone is cheating, so it's okay for me to cheat too"). (6) Disregard or distortion of consequences: individuals diminish or overlook the negative consequences caused by their harmful actions. As long as the harmful results are minimized, distorted, or ignored, the self-condemnation is less likely to be activated (i.e., "The kind of injury that I caused my opponent will heal in no time, so its fine"). (7) Dehumanization: individuals deprive the human characteristics or attributes animalistic qualities to the victims of their aggressive actions so that self-censure of such conduct can be disengaged (i.e., "My opponent is acting like an animal, so I will treat him like one"). (8) Attribution of blame: individuals consider that they are forced to take aggressive conducts by provocation thus such actions are justified as defensive reactions and to blame the victims for bringing misery on themselves. Viewing one's harmful conduct as driven by compelling situations rather than personal decision can also avoid self-condemnation (i.e., acting violently to "get even" for previous aggressive behavior on the part of the opponent).

Although the eight mechanisms of moral disengagement that were supported in previous studies (e.g., Aquino et al., 2007; McAlister et al., 2006), Bandura et al. (1996) suggested that moral disengagement may be context-specific, and that the impact of moral disengagement on moral behaviors in different contexts should be exam-

ined discreetly. Boardley and Kavussanu (2007) also suggested that behaviors displayed in sports must be included in the items so the levels of moral disengagement in a sports context can be examined; therefore, they developed a six-dimensional model of moral disengagement for use in sports settings based on Bandura's eight mechanisms of moral disengagement. The six dimensions are conduct reconstrual (a combination of moral justification and euphemistic labeling), advantageous comparison, non-responsibility (a combination of displacement of responsibility and diffusion of responsibility), distorting consequences (another name for disregard or distortion of consequences), dehumanization, and attribution of blame. The six mechanisms dimensions developed in accordance with sport behaviors are most closely related to the context of physical education. However, the nature of both sports and physical education contexts may remain distinct, since the former is competitive oriented, while the latter occurs in an educational environment. Based on the outcomes of Boardley and Kavussanu (2007), Pan and Hsu (2017) examined the six factors and developed an instrument called "Moral Disengagement in Physical Education" (MDPE), which was specifically designed for the physical education context. The three-study project examined the factors and items through qualitative and quantitative approaches and showed that the "dehumanization" factor should be removed, since the connotation of dehumanization, and the items, such as "some opponents deserve to be treated like animals," would not apply to the physical education context. The remaining five factors of conduct reconstrual, advantageous comparison, non-responsibility, distortion of consequences, and attribution of blame were retained; therefore, these five mechanisms were adopted in the present study as the predictors of student misbehavior in physical education.

An increasing number of studies report that moral disengagement can positively predict antisocial behaviors in sports, such as cheating, aggression, fouls, and using illegal substances (Boardley and Grix, 2014; Boardley and Kavussanu 2007; 2009; 2010; Hodge and Lonsdale, 2011). Although these studies have contributed to the literature of moral disengagement and antisocial behaviors in the sport context, the results cannot be directly inferred to the context of physical education, since the competitive atmosphere athletes experience is much different from what students experience in physical education classes. Finally, few studies have applied the concept of moral disengagement in the physical education context. In a recent study (Hsu et al., 2017) the mediating role of moral disengagement between the relationships of high school students' goal orientations and misbehaviors in physical education was examined in Taiwan. This study reported that students in physical education classes, who endorse performance-approach and performance-avoidance goals, might use the mechanism of moral disengagement to escape from self-monitoring and behave improperly. Although the role of moral disengagement in relation to student misbehavior has been confirmed, the understanding of this issue is still unclear. The major limitation of Hsu and his colleagues' study (Hsu et al., 2017) is that moral disengagement was regarded as a

single concept, rather than as individual mechanisms. In other words, we still do not have a full grasp of the mechanisms of moral disengagement that students may use to rationalize their misbehavior in physical education. Therefore, it is important to examine the relationship between the mechanisms of moral disengagement and student misbehavior.

In general, as suggested by previous studies (Petitpas et al., 2005; Pope 2006; Theeboom and Martelaer, 2006), the causes of student misbehavior should be explored to serve as a strong basis for designing programs that cultivate students' interest in physical education. Information on the causes of student misbehavior would make significant contributions to the literature on physical education. More specifically, it would enable the development of more effective responsibility-facilitating strategies in instruction models after further understanding the psychosocial mechanisms behind these misbehaviors. Given the importance of understanding the psychosocial mechanisms of student misbehavior in physical education, the purpose of the present study was to determine whether the five-type mechanisms of moral disengagement could serve as predictors of student misbehavior in physical education. After reviewing previous studies, it was found that the extant knowledge is still insufficient for proposing a framework that on the mechanisms of moral disengagement that can predict students' misbehaviors in physical education. Therefore, the first stage of the current study was conducted using an exploratory approach. The second stage was conducted to confirm the results proposed in the previous stage.

Methods

Student misbehavior in physical education
The Chinese version of the Physical Education Classroom Instrument (C-PECI; Wu et al., 2016) was used to measure students' misbehavior in physical education. The C-PECI has been developed based on the original short-form version of the Physical Education Classroom Instrument (PECI-S; Krech et al., 2010). The C-PECI consists of five subscales, including aggressive (four items: e.g., "threatens others"), low engagement, failure to follow directions (four items: e.g., "unsafe actions"), poor self-management (four items: e.g., "temper tantrums"), and distracts (four items: e.g., "makes fun of others"). Students are required to rate how often they engage in the misbehaviors in their physical education class, on a scale ranging from 1 (never) to 5 (always). Wu et al. (2016) have reported good levels of internal consistency and the evidence for the tool's factorial, convergent, and concurrent validity. In the present study (Stage 1), the CFA model indicated that the hypothesized factor structure provided an acceptable fit. Tucker-Lewis index (TLI) = 0.96; comparative fit index (CFI) = 0.96; root-mean-square error of approximation (RMSEA) = .05; standardized root-mean-square residual (SRMR) = .05. Cronbach's alpha coefficient value for each sub-scale was .82, .84, .71, .85, and .74, respectively.

Moral disengagement

The Moral Disengagement in Physical Education Scale (MDPE; Pan and Hsu, 2017) was used to measure students' moral disengagement in the physical education context. The MDPE has been developed based on the Moral Disengagement in Sport Scale (MDSS; Boardley and Kavussanu, 2007). In the first study, interviews were conducted in order to produce an item bank for use in the MDPE, while the confirmatory factor analysis (CFA) of the second study revealed the MDPE included five factors. In the third study, CFA and criterion-related validity analyses provided even more psychometric evidence. Overall, results of the previous study showed that MDPE was valid and reliable.

The MDPE measured conduct reconstrual (four items; e.g., "Acting aggressively is just a way of showing you are tough"), advantageous comparison (three items; e.g., "Mocking a classmate is not bad compared to injuring him or her."), non-responsibility (four items; e.g., "I should not be blamed for violating class rules if everyone is doing it"), distortion of consequences (three items; e.g., "Aggressive language toward a classmate does not actually harm anyone"), and attribution of blame (three items; e.g., "If I retaliate to something a classmate has done, it is the classmate's fault"). Participants were asked to rate each item on a 6-point Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree). In the present study (Stage 2), the CFA model indicated that the hypothesized factor structure provided an acceptable fit (TLI = 0.95; CFI = 0.96; RMSEA = 0.07; SRMR = 0.06). Cronbach's alpha coefficient value for each sub-scale was 0.74, 0.80, 0.81, 0.71, and 0.78 respectively.

Data analysis
The first stage of the present study attempted to explore the appropriate mechanisms of moral disengagement that could serve as predictors of student misbehavior in physical education classes. After 314 completed questionnaires were reviewed, incomplete questionnaires and responses that included the same score for all items were excluded from the data analysis. Finally, 282 questionnaires were retained for the data analysis. Data were analyzed using SPSS 18.0, and linear regression was used. Descriptive statistics and correlations were also examined. The second stage was conducted to confirm the results proposed in Stage 1. In the preliminary analysis, all data were subjected to accuracy screenings and descriptive analyses. Sixty-eight of 404 questionnaires were deleted; the effective response rate was 83.16%. To address the research questions, structural equation modeling was conducted with maximum likelihood estimation in the AMOS 18.0 program. According to the review of reporting practices in previous studies (see Jackson et al., 2009), TLI, CFI, RMSEA, and SRMR are critical indices for the measurement model. For the CFI and TLI indices, values greater than 0.90 are considered acceptable, and those greater than 0.95 indicate a good fit to the data. For the RMSEA and SRMR indices, values less than .08 are acceptable and those less than 0.06 indicate a good fit to the data (Browne and Cudeck, 1993; Byrne 2001; Marsh et al., 2004).

Results

The first stage
The independent variables in this study were the five mechanisms of moral disengagement (i.e., conduct reconstrual, advantageous comparison, non-responsibility, distortion of consequences, and attribution of blame), while the dependent variables were the five misbehaviors of students in physical education (i.e., aggressive, low engagement, Failure to follow directions, poor self-management, and distracts). The results of collinearity diagnostics showed that the tolerance of conduct reconstrual, advantageous comparison, non-responsibility, distortion of consequences, and attribution of blame was 0.67, 0.53, 0.76, 0.55, and 0.60, respectively; while the variance inflation factor (VIF) was 1.50, 1.88, 1.31, 1.81, and 1.66, respectively, suggesting non-collinearity among these five factors. Therefore, five separate regressions were conducted for each of the dependent variables. Descriptive statistics and correlations among the factors are shown in Table 1.

The results from examining the moral disengagement mechanisms in predicting aggressive yielded a non-significant regression coefficient (F = 2.17, p = 0.33). All the mechanisms of conduct reconstrual (β = 0.12, t = 1.58, p = 0.11), advantageous comparison (β = .12, t = 1.54, p = .12), non-responsibility (β = 0.04, t = 0.50, p = 0.63), distortion of consequences (β = 0.05, t = 0.58, p = 0.56), and attribution of blame (β = 0.07, t = 0.85, p = 0.39), were able to predict aggressive behavior.

The results of examining the moral disengagement mechanisms to predict low engagement yielded a significant regression coefficient (F = 15.86, p = 0.00). However, the mechanisms of advantageous comparison (β = 0.17, t = 2.43, p = 0.02) and non-responsibility (β = 0.39, t = 6.56, p = 0.00) were the only two significant predictors in the regression model. These two factors explained 20.9% of the variance in low engagement.

Results of examining the moral disengagement mechanisms to predict failure to follow directions showed a significant regression coefficient (F = 7.42, p = 0.00). The mechanisms of advantageous comparison (β = 0.17, t = 2.25, p = 0.03) and non-responsibility (β = 0.18, t = 2.85, p = 0.01) were the only two significant predictors in the regression model. These two factors explained 10.2% of the variance in failure to follow directions.

Results of examining the moral disengagement mechanisms to predict poor self-management showed a significant regression coefficient (F = 8.49, p = 0.00). The mechanisms of advantageous comparison (β = 0.22, t = 2.93, p = 0.00) and non-responsibility (β = 0.16, t = 2.45, p = 0.02) were the only two significant predictors in the regression model. These two factors explained 11.8% of the variance in poor self-management

Results of examining the moral disengagement mechanisms to predict distracts showed a significant regression coefficient (F = 11.87, p = 0.00). The mechanisms of advantageous comparison (β = .20, t = 2.74, p = 0.01) and non-responsibility (β = 0.28, t = 4.52, p = 0.00) were the only two significant predictors in the regression model. These two factors explained 16.2% of the variance in distracts.

In conclusion, results of Stage 1 showed that while none of the mechanisms of moral disengagement were unable to predict students' aggressive behaviors in physical education, the mechanisms of advantageous comparison and non-responsibility positively predicted students' low engagement, failure to follow directions, poor self-management, and distracting behaviors.

The second stage
In this stage, the results from Stage 1 served as the basis for examining whether the two mechanisms, advantageous comparison and non-responsibility, can predict the misbehaviors of low engagement, failure to follow directions, poor self-management, and distracts. As seen in Table 2, the results of the descriptive statistical analysis showed that the skewness and kurtosis of the variables in question were ± 2, which is consistent with the normal distribution hypothesis (Marshall and Mardia, 1985).

The initial analysis results of the measurement model showed no error items in negative values, and the factor loadings of the items were greater than 0.50. As seen in Figure 1, the factor loadings were 0.80, 0.69, and 0.83 (advantageous comparison); 0.87, 0.72, 0.78, 0.84 (non-responsibility); 0.84, 0.70, 0.81, and 0.73 (low engagement); 0.76, 0.72, 0.85, and 0.70 (failure to follow directions); 0.73, 0.75, and 0.82 (poor self-management);

Table 1. Means, SDs, Reliability Coefficients, and Correlations (Stage 1)

	CR	AC	NR	DC	AB	AG	LE	FF	PM	DS
CR	1	.43	.34	.46	.42	.10	.16	.15	.22	.17
AC		1	.33	.45	.41	.02	.28	.27	.31	.30
NR			1	.42	.39	.06	.44	.27	.26	.36
DC				1	.48	.06	.27	.23	.23	.29
AB					1	.07	.20	.23	.24	.20
AG						1	.04	.08	.11	.05
LE							1	.38	.41	.42
FF								1	.43	.46
PM									1	.49
DS										1
Mean	2.61	3.07	2.72	3.02	2.87	1.96	2.14	2.18	2.30	2.26
SD	1.23	1.10	.89	1.21	1.24	1.00	.90	.91	.87	.89
Cronbach's α	.74	.84	.72	.80	.78	.82	.84	.71	.85	.74

All correlations are significant at the 0.01 level. CR = Conduct reconstrual; AC = Advantageous comparison; NR = Non-responsibility; DC = Distorting consequences; AB = Attribution of blame; AG = Aggressive; LE = Low engagement; FF = Failure to follow directions; PM = Poor self-management; DS = Distracts.

Table 2. Means, SDs, and Correlations (Stage 2).

	AC	NR	LE	FF	PM	DS
AC	.77	.39	.42	.44	.49	.48
NR		.81	.67	.49	.58	.49
LE			.77	.60	.63	.47
FF				.76	.53	.39
PM					.76	.40
DS						.79
Mean	2.69	2.58	2.32	1. 94	1.98	2.01
SD	1.02	1.18	.92	.89	.94	.93

All correlations are significant at the .01 level. AC = Advantageous comparison; NR = Non-responsibility; LE = Low engagement; FF = Failure to follow directions; PM = Poor self-management; DS = Distracts; Diagonal value = √AVE.
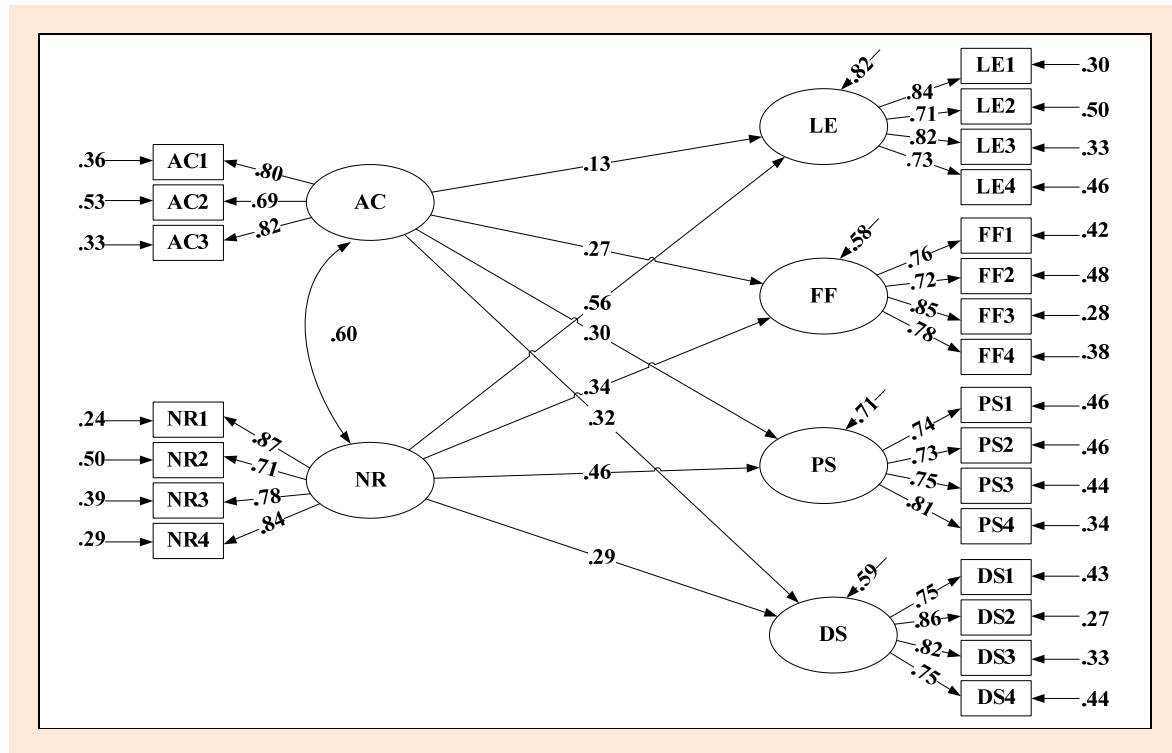
Figure 1. Path model results. AC = Advantageous comparison; NR = Non-responsibility; LE = Low engagement; FF = Failure to follow directions; PS = Poor self-management; DS = Distracts.

0.75, 0.85, 0.82, and 0.75 (distracts), respectively, indicating basic fit results between the data and the model (Hair et al., 2010). The measurement model in this study indicated that the hypothesized factor structure provided an acceptable fit (χ^2 = 423.54, df = 215, p < 0.05, χ^2/df = 1.97; TLI = 0.95; CFI = 0.96; RMSEA = 0.05; SRMR = 0.04). All factor loadings were statistically significant in this model, indicating that the measures of the model were appropriate.

The composite reliability (CR), average variance extracted (AVE), and √AVE values have also been reported. It is suggested that the CR value should be above .60 (Bagozzi and Yi, 1988). According to the results, the CR values for the six factors (0.82, 0.88, 0.85, 0.84, 0.84, and 0.87, respectively) were within the acceptance criteria. It suggested the value for AVE should be above 0.50 (Bagozzi and Yi, 1988). The present AVE values for the six factors were 0.60, 0.65, 0.60, 0.58, 0.58, and 0.63, respectively, showing that all the factors were within the criteria for acceptance. Finally, it suggested that the √AVE value should be higher than the correlations between the construct and other constructs. The √AVE value of the six

factors was 0.77, 0.81, 0.77, 0.76, 0.76, and 0.79, respectively. As seen in Table 2, all √AVE values were higher than the correlation coefficient between the construct and other constructs, showing that the discriminant validity was supported.

Results of the structure model indicated that the respective fit index results were within the acceptable range (χ^2 = 474.41, df = 221, p < 0.05; TLI = 0.94; CFI = 0.95; RMSEA = 0.06; SRMR = 0.04). Furthermore, advantageous comparison and non-responsibility positively predicted low engagement (β = 0.13, t = 2.87, p = 0.004; β = 0.56, t = 10.97, p < 0.001, respectively), failure to follow directions (β = 0.27, t = 4.96, p < 0.001; β = 0.34, t = 7.41, p < 0.001, respectively), poor self-management (β = 0.30, t = 5.23, p < .001; β = 0.46, t = 8.99, p < 0.001, respectively), and distracts (β = 0.32, t = 6.02, p < 0.001; β = 0.29, t = 6.62, p < 0.001, respectively). In conclusion, the result of structural equation modeling confirmed that advantageous comparison and non-responsibility were the significant predictors of students' misbehaviors in physical education (see Figure 1).

Discussion

As suggested by Bandura (1991), moral disengagement should be applied in different contexts to better understand distinct behaviors. The mechanisms of moral disengagement have been applied in recent studies on behaviors during physical activities, supporting the idea that moral disengagement in individuals is significantly correlated to their negative behaviors (Boardley and Kavussanu, 2009; Lucidi et al., 2008). The present study specifically focused on students' misbehaviors in physical education. The results of this study indicate that the mechanisms of advantageous comparison and non-responsibility positively predicted misbehaviors in physical education. In other words, when engaging in misbehaviors, students are likely to adopt the mechanisms of advantageous comparison (exploiting the power of contrast by comparing a negative behavior to one that is far worse) and non-responsibility (displacing or diffusing responsibility onto others). Generally, this study made unique contributions to the literature on moral disengagement mechanisms and student misbehaviors. Furthermore, the present findings suggest that not all mechanisms of moral disengagement are related to misbehaviors in the physical education context.

    Among all the mechanisms of moral disengagement, advantageous comparison is an especially crucial tool for disengaging from moral control (Bandura, 1999). Supporting this finding is the fact that, in the study by Boardley and Kavussanu (2007), youth athletes scored the highest on advantageous comparison among all the moral disengagement mechanisms. Advantageous comparison entails comparing one's transgressions with worse behaviors committed by others, and by doing so, one's own transgressions would seem less harmful or insignificant. Bandura (1999) suggested that individuals tend to demonstrate some less severe deviant behaviors when there are more severe transgressive behaviors exist in the environment. Students can easily compare the misbehaviors in the physical education context with other more-severe deviant behaviors. Hence, students would activate the mechanism of advantageous comparison when demonstrating misbehaviors such as low engagement, failure to follow directions, poor self-management, and distracting behaviors.

    With regard to non-responsibility, previous studies have found that youth athletes tended to employ displacement and diffusion of responsibility to minimize their personal accountability for antisocial behaviors, and that displacement and diffusion of responsibilities were particularly salient in the context of sports (Long et al., 2006). A similar finding also reported that young adult soccer players would primarily employ displacement and diffusion of responsibility to their coaches or teammates for their cheating and aggressive behaviors (Traclet et al., 2011). Hinrichs et al. (2012) pointed out that, when players argue that their antisocial behaviors are the results of obeying the authority, they are actually displacing the responsibilities of their own actions to others (those who give the orders or serve as the authority figures) rather than accepting the responsibility. Students may also dis-

place the responsibilities of their low engagement, failure to follow directions, poor self-management, and distracting behaviors to their classmates, especially the leaders in the class, who also show such behaviors.

    There is great concern over students' misbehaviors in physical education. The issue has been studied extensively (e.g., Cothran and Kulinna, 2007; Cothran et al., 2009; Kulinna et al., 2006; Krech et al., 2010); yet, the psychosocial mechanisms inducing students' misbehaviors in physical education have not been explored. The present study was unique in that it determined the relationship between moral disengagement and student misbehavior in physical education, discovering that advantageous comparison and non-responsibility were two crucial predictors of misbehavior. Therefore, in order to diminish misbehaviors in physical education, strategies should be devised to eliminate students' use of advantageous comparison and non-responsibility. More specifically, we suggest that physical educators remind students that small indiscretions may cause severe consequences. We also suggest that educators urge students to take full responsibility for their actions. Additionally, educators can ask the students to think retrospectively about their behaviors in class and to assess whether they have advantageous comparison or non-responsibility related thoughts.

    Previous studies in the contexts of education (Almeida et al., 2010; Hyde et al., 2010) as well as sports (Boardley and Kavussanu 2009; 2010; Hodge and Lonsdale 2011) have consistently viewed moral disengagement as a single concept rather than examining its individual mechanisms. In contrast, the present study found that only the mechanisms of advantageous comparison and non-responsibility significantly predicted students' misbehaviors in physical education. Theoretically, this finding contributes to the knowledge of the psychosocial mechanisms behind the misbehaviors of students in the physical education class. Therefore, it may be misguided or ineffective to view moral disengagement as one comprehensive concept when attempting to address moral disengagement in physical education. Pragmatically, it is suggested that researchers concerned with moral disengagement and student behavior should focus on the mechanisms of advantageous comparison and non-responsibility. Prevention and intervention programs should also address advantageous comparison and non-responsibility in order to reduce students' misbehavior in the physical education context.

    One of the major limitations of the present study is its cross-sectional nature. However, based on the findings that students' misbehavior in physical education can be predicted by the mechanisms of advantageous comparison and non-responsibility, we suggest that future studies focus on identifying the causal relationship between moral disengagement and student misbehaviors in order to provide more persuasive evidence on this connection. Second, student misbehaviors were measured using a self-reported questionnaire. Although the research team assured the students that their responses would be confidential and that they would only be used for research purposes, the results would be more persuasive if multiple methods (e.g., individual interviews and systematic observa-

tion) could be used for data triangulation. Third, the variables measured in this study were mechanisms of moral disengagement and student misbehavior; it would be of interest to examine the mediating role of advantageous comparison and non-responsibility in the relationship between root causes (e.g., parental and peer influence or motivational climate) and students' behaviors in physical education.

Conclusions

In Taiwan, where the current study was conducted, the educational system, curriculum paradigm, theoretic foundation (e.g., constructivism), and applicative models (e.g., sport education model, teaching personal and social responsibility, and teaching games for understanding) in physical education are mostly learned from the United States. However, there are cultural differences in the Eastern and Western educational contexts. The present study focuses on the mechanisms of moral disengagement adopted by students; however, students from different cultural backgrounds may have different tendencies. It is therefore suggested that researchers further discuss this topic in the Western educational context as well.

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Key points

- The mechanisms of moral disengagement have been applied in recent studies on behaviors during physical activities, supporting the idea that moral disengagement in individuals is significantly correlated to their negative behaviors.
- The mechanisms of advantageous comparison and non-responsibility positively predicted misbehaviors in physical education.
- Prevention and intervention programs should also address advantageous comparison and non-responsibility in order to reduce students' misbehavior in the physical education context.

AUTHOR BIOGRAPHY

Wei-Ting HSU
Employment
Assistant Professor, Center for General Education, Fo Guang University, Taiwan
Degree
PhD
Research interest
Teaching personal and social responsibility, sport pedagogy
E-mail: tyshbird@gmail.com

Yi-Hsiang PAN
Employment
Professor, Graduate Institute of Physical Education, National Taiwan Sport University.
Degree
PhD
Research interest
Sports pedagogy, curriculum development of physical education, teachers' professional development in physical education.
E-mail: a0922302951@gmail.com

✉ **Yi-Hsiang Pan**
Graduate Institute of Physical Education, National Taiwan Sport University, 250 Wen-Hwa 1st Road, Kwei-Shan , Tao-Yuan County, Taiwan, ROC