Merino-Barrero, J.A.; Valero-Valenzuela, A. y Belando Pedreño, N. (2019) Self-Determinated Psychosocial Consequences through the Promotion of Responsibility in Physical Education. Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte vol. 19 (75) pp. 415-430 Http://cdeporte.rediris.es/revista/revista75/artconsecuencias1036.htm
DOI: 10.15366/rimcafd2019.75.003

ORIGINAL

SELF-DETERMINED PSYCHOSOCIAL CONSEQUENCES OF RESPONSIBILITY PROMOTION IN PHYSICAL EDUCATION

CONSECUENCIAS PSICOSOCIALES AUTODETERMINADAS MEDIANTE LA PROMOCIÓN DE RESPONSABILIDAD EN EDUCACIÓN FÍSICA

Merino-Barrero, J.A.[1]; Valero-Valenzuela, A.[2]; Belando-Pedreño, N.[3]

[1] PhD in Physical Activity and Sport Sciences. Faculty of Education. International University of La Rioja (Unir), Logroño (Spain). jandres.merino@unir.net.
[2] University Professor. Faculty of Sport Sciences. University of Murcia (Spain). avalero@um.es
[3] PhD in Physical Activity and Sport Sciences. Research Group SAFE, Faculty of Sport Science. University of Murcia (Spain) noelia.belando@universidadeuropea.es

Spanish-English translator: Rocío Domínguez Castells, rocio@sport-science.net

Código UNESCO/UNESCO code: 5899 EF y Deporte / PE and Sport
Clasificación del Consejo de Europa / Council of Europe classification: 4. Educación Física y Deporte comparado / Compared Sport and Physical Education; 5. Didáctica y metodología / Didactic and methodology; 15. Psicología del deporte / Sport Psychology

Recibido 27 de agosto de 2017 **Received** August 27, 2017
Aceptado 15 de febrero de 2018 **Accepted** February 15, 2018

ABSTRACT

The aim of this study was to examine the relationships among responsibility perceived by students, psychological mediators, self-determined motivation, sportsmanship, life style and intention to be physically active. To do this, a prediction model was proposed in line with the postulates of the hierarchical model of intrinsic and extrinsic motivation. Participants were 128 physical education students (68 boys and 60 girls) aged between 11 and 15 years (*M* = 12.45; *SD* = 1.15). A cross-sectional study was designed. The questionnaires PSRQ, BPNES, CMEF, MSOS, IPAS and Krece Plus short test were used to

measure the variables studied. The results showed that responsibility perceived by students positively predicted psychological mediator satisfaction and self-determined motivation. Consequently, greater importance of sportsmanship, intention to practise physical activity in the future and life style perception of the participating students was explained.

KEYWORDS: psychosocial consequences, sportsmanship, life style, psychological mediators, self-determined motivation, responsibility.

RESUMEN

El objetivo de este estudio fue conocer las relaciones existentes entre la responsabilidad percibida por los estudiantes, los mediadores psicológicos, la motivación autodeterminada, deportividad, estilo de vida e intención de ser físicamente activo, proponiendo un modelo de predicción en consonancia con los postulados del modelo jerárquico de la motivación intrínseca y extrínseca. Participaron 128 estudiantes de Educación Física (68 chicos y 60 chicas) con edades comprendidas entre los 11 y los 15 años (*M* = 12,45; *DT* = 1,15). Se utilizó un diseño transversal. Se administraron los cuestionarios *PSRQ*, *BPNES*, *CMEF*, *MSOS*, *IPAS* y *Test corto Krece Plus* para medir las variables estudiadas. Los resultados mostraron que la responsabilidad percibida predijo positivamente la satisfacción de los mediadores psicológicos y estados de motivación autodeterminada. Como consecuencia, se explica una mayor importancia de la deportividad, de la intención de práctica futura y percepción del estilo de vida en los participantes.

PALABRAS CLAVE*:* consecuencias psicosociales, deportividad, estilo de vida, mediadores psicológicos, motivación autodeterminada, responsabilidad.

1. INTRODUCTION

The teacher has been highlighted as a key determining agent on students' attitude towards their implication and participation in the teaching-learning process and their academic commitment (Walsh, Ozaeta & Wright, 2010). In this regard, the learning environment promoted through methodological aspects may be seen as a determining social factor for the development of motivational processes in the classroom (Cheon, Reeve, Yu & Jang, 2014).

One of the most frequently used socio-educative programmes in an educational context is the Teaching for Personal and Social Responsibility (TPSR) (Hellison, 2011), which explains responsibility development in students using five working levels (Hellison, 2011; Sánchez-Alcaraz, Díaz & Valero, 2014). It encourages being a model of respect, giving voice to all students, enhancing their autonomy and leadership, and trying to make all students experience success in the tasks they perform (Escartí, Gutiérrez, Pascual & Wright, 2013).

In doing so, a teacher who promotes a task-oriented classroom environment and encourages responsibility would be positive and receptive, encourage effort

to achieve success, let students participate in the task selection and provide success, decision-making and problem-solving opportunities. With this, a more responsible behaviour intends to be encouraged in order to make the student a better person within the achievement contexts that he/she is involved in (Guan, Xiang, McBride & Bruene, 2006).

Responsibility climate is positively related to a student's intrinsic motivation for a specific activity (Belando et al., 2015; Moreno-Murcia, Huéscar & Cervelló, 2012). Thus, this climate is determined by *social motives* that make students do certain activities called "social goals" (Urdan & Maehr, 1995), which have been examined in other physical education research studies (Garn, McCaughtry, Shen, Martin & Fahlman, 2011). Among the various social goals, Guan et al. (2006) considered responsibility goal as one of the most important in physical education, it representing the wish to respect social rules and the pre-established role (Wentzel, 1991). Although studies that have deeply studied responsibility as a social goal in physical education and sport class are still limited, it is related to positive consequences such as persistence and activity enjoyment (Méndez-Giménez, Fernández-Río & Cecchini, 2014; Méndez-Giménez, Cecchini, Fernández-Río & González, 2012; Menéndez & Fernández-Río 2016).

In agreement with the above and within the self-determination theory framework, the hierarchical model of intrinsic and extrinsic motivation (HMIEM) proposed by Vallerand (2007) reveals that those social motives, including responsibility (Belando et al., 2015; Méndez et al., 2012; Moreno-Murcia, et al., 2012), act as precursors to satisfaction of basic psychological needs (competence, autonomy and relatedness) in order to promote a more self-determined motivation in the student (Garn & Wallhead, 2014). Nevertheless, non-fulfilment of any of the three basic psychological needs may lead to the student's amotivation (Deci & Ryan, 2012). Consequently, psychological mediators become essential to promote a more self-determined motivational state that is related with cognitive, affective and behavioural positive consequences, such as enjoyment or future intention to practise physical activity (Su & Reeve 2011), sportsmanship (Chantal & Bernache-Assollant, 2003) or leading a healthier lifestyle (Moreno-Murcia & Sánchez-Latorre, 2016).

2. AIMS AND HYPOTHESES

The aim of this study was to examine the relationships among responsibility perceived by the student, psychological mediators, self-determined motivation, sportsmanship, life style and intention to be physically active. In order to do this, responsibility's predicting role for the rest of variables was analysed, since it was considered the triggering factor at contextual level in physical education class. It was hypothesised that responsibility would act as a trigger and would satisfy psychological mediators. These would predict higher levels of self-determination, which would lead to adaptive behaviours such as greater sportsmanship, more active life style or the intention to be physically active. It

was also hypothesised that responsibility and psychological mediators would have significant indirect effects on the aforementioned consequences.

3. MATERIAL AND METHOD

3.1. PARTICIPANTS

The sample consisted of 128 physical education students, 68 boys (53%) and 60 girls (47%) aged between 11 and 15 years old (*M* = 12.45; *SD* = 1.15), from three state schools from the Region of Murcia, with similar characteristics and environment. They were selected based on accessibility and convenience.

3.2. MEASUREMENTS

Personal and social responsibility. The *Personal and Social Responsibility Questionnaire* (PSRQ), proposed by Li, Wright, Rukavina and Pikering (2008) and validated by Escartí, Gutiérrez and Gutiérrez (2011) for Spanish context, was used to measure participants' personal and social responsibility. The questionnaire is composed of 14 items, divided into two seven-item factors: personal responsibility (e.g. "I want to improve") and social responsibility (e.g. "I respect others"). Participants were requested to answer using a 6-point Likert-type scale that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). Internal consistency of the subscales, measured with Cronbach's alpha, was 0.83 and 0.80, respectively. The complete scale yielded a value of 0.90.

Psychological mediators. The Spanish version (Moreno-Murcia, González-Cutre, Chillón & Parra, 2008) of the *Basic Psychological Needs in Exercise Scale* (BPNES) (Vlachopoulos & Michailidou, 2006) was used. The questionnaire comprises 12 items, divided into three factors that assess satisfaction of the three basic psychological needs in physical exercise contexts: autonomy (e.g. "The exercises I perform match my interests"), competence (e.g. "I perform the exercises effectively") and relatedness (e.g. "I interact with my class mates in a very friendly way"). Participants were asked to answer on a 5-point Likert-type scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha values obtained for the different subscales were 0.70, 0.72 and 0.79, respectively. The complete scale yielded a value of 0.85.

The mean scores obtained from every subscale were combined into one single value called psychological mediators, which allowed a total score to be introduced in the subsequent statistical analysis (Soenens, Sierens, Vansteenkiste, Dochi & Goossens, 2012).

Self-determined motivation. The motivation in physical education questionnaire (*Cuestionario de Motivación en la Educación Física,* CMEF), proposed by Sánchez-Oliva, Amado, Leo, González-Cutre and García-Calvo (2012), was applied. This scale comprises 20 items divided into five four-item

factors that measure the different types of motivational regulation: intrinsic motivation (e.g. “because physical education is fun”), identified regulation (e.g. “because I can learn skills that I can apply to other areas”), introjected regulation (e.g. “because it is what I must do to feel good”), external regulation (e.g. “because it is regarded as positive by the teacher and class mates”), and amotivation (e.g. “but I do not understand why we need to have physical education”). Participants were asked to answer on a 5-point Likert-type scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alpha values obtained for the different subscales were 0.71, 0.86, 0.72, 0.74 and 0.84, respectively. The complete scale yielded a value of 0.79.

The scores obtained from every CMEF subscale were used to calculate the self-determination index (SDI): (2 x (intrinsic motivation + identified regulation) – ((introjected regulation + external regulation) / 2 + 2 x amotivation) (Vallerand & Rousseau, 2001). The SDI provides the degree of motivational self-determination by calculating the weight of every motivation type according to its positioning on the self-determination continuum. This index has been widely used in research regarding motivation in physical education class (Moreno-Murcia et al., 2008; Sicilia, Férriz & González-Cutre, 2014).

Sportsmanship. The Spanish version (Martín-Albo, Núñez, Navarro & González, 2006) of the *Multidimensional Sportspersonship Orientation Scale* (MSOS), designed by Vallerand, Brière, Blanchard and Provencher (1997), was applied to measure sportsmanship. This scale is composed by 25 items divided into five five-item factors: personal commitment to sport practice (e.g. “I do not give up even after making many errors”), social conventions (e.g. “When I lose, I congratulate my opponent, no matter who it is”), respect for rules and officials (e.g. “I respect officials’ decisions despite them being wrong”), respect for one’s opponent (e.g. “When an opponent gets injured, I ask the official to stop the game so that he/she can be assisted”), negative approach to sportsmanship (e.g. “I compete to achieve personal honour, trophies and medals”). Participants were requested to answer on a 5-point Likert-type scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alpha values obtained for the different subscales were 0.69, 0.77, 0.80, 0.70 and 0.56, respectively. The complete scale yielded a value of 0.87. Given the low consistency of the “negative approach to sportsmanship” dimension, it was decided to remove it (De Bofarull & Cusí, 2014). The value of the sportsmanship construct was calculated using the mean of the other four dimensions, obtaining a single value called *global sportsmanship index* (GSI) (Chantal, Robin, Vernat & Bernache-Assolant, 2005; Vallerand & Losier, 1994). Higher scores on this index reflect firmer attitudes of concern and respect for rules, opponents, social conventions, as well as a positive attitude toward sport participation.

Intention to be physically active. The Spanish version (Moreno-Murcia, Moreno & Cervelló, 2007) of the *Intention to be Physically Active Scale* (IPAS), designed by Hein, Müür and Koka (2004), was used. It is composed of five items grouped into one single factor with the aim to measure the participant’s intention to be physically active after school graduation (e.g. “I am interested in

my physical fitness development"). It had to be answered on a 5-point Likert-type scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha for this scale was 0.87.

Life style. The *Krece Plus* short test (*Test Corto Krece Plus*) (Serra, Aranceta & Rodríguez-Santos, 2003) was applied. It consists of two questions: *how many hours on average do you watch television or play videogames or on the computer every day?* and *how many hours do you spend on sport activities after school every week?* Participants were asked to answer on a 6-point Likert-type scale that ranged from 0 to longer than 4 hours. Cronbach's alpha for this scale was 0.71. This questionnaire allows for classification of a participant's life style as bad (0 to 3 points), average (4 to 6 points) or good (7 points).

3.3. DESIGN AND PROCEDURE

Descriptive methodology with a cross-sectional design (Montero & León, 2007) was applied. Once the study was approved by the ethics committee, parents were requested to provide informed consent. The questionnaires were administered in the presence of the main researcher and the physical education teacher in a quiet environment and lasted 20 minutes. Anonymity and non-influence of the answers on school marks were assured, trying to reduce the effect of social expectations on the answers.

3.4. DATA ANALYSIS

First of all, descriptive statistics of the latent variables were calculated: mean, standard deviation, asymmetry and kurtosis. Internal consistency of each variable was also calculated by means of Cronbach's alpha. The correlations among variables were analysed. Subsequently, structural regression analysis using a two-step approach was conducted as recommended by Anderson and Gerbing (1988). Firstly, a measurement model was established in order to guarantee construct validity of the instruments and, secondly, a variable prediction model was built through which the influence of some variables of the hypothesised model on others was analysed. The analyses were performed with the statistical packages SPSS 19.0 and Amos 19.0.

4. RESULTS

4.1. DESCRIPTIVE ANALYSIS AND BIVARIATE CORRELATIONS

The results (see Table 1) revealed that responsibility was the highest ranked variable at contextual level by the students, with a mean value of 4.72, although the questionnaire answering scale was one point longer than the rest, as it also happened with life style. Participants' perception of psychological mediator satisfaction was given a mean value of 3.46. Self-determination index was given a mean score of 3.38. According to the continuum established by the self-determination theory, students reached, in general, values above the middle

point and close to the highest end of self-determination. Regarding the variables related to the consequences within Vallerand's (1997) hierarchical model, sportsmanship was given a mean score of 3.61, life style reached 2.37 and the intention to be physically active yielded a mean value of 3.55.
Asymmetry and kurtosis indices were below 2 for all variables, indicating univariate normality of the data (Bollen & Long, 1993). Cronbach's alpha yielded acceptable values (George & Mallery, 2003) for all variables, since they were above 0.70. Finally, the correlation analysis revealed significant positive correlations among all study variables.

Table 1

Reliability, descriptive statistics and bivariate correlations of the variables

Variables	*M*	*SD*	Range	*A*	*K*	*α*	1	2	3	4	5	6
1. Responsibility	72	.77	1-6	.122	-1.22	.88	-	.63**	.45**	.69**	.22**	.18**
2. Mediators	3.46	.70	1-5	-.131	.01	.84		-	.56**	.48**	.42**	.33**
3. SDI	3.38	.46	1-5	.269	. 02	.78			-	.42**	.12**	.36*
4. Sportsmanship	3.61	.65	1-5	.039	-.66	.83				-	.18**	.12*
5. IPA	3.55	.94	1-5	-.314	-56	.87					-	.18**
6. Life style	2.37	1.25	1-6	-.169	-.89	.77						-

* $p < .05$; ** $p < .01$; *M* = Mean; *SD* = Standard deviation; A = Asymmetry; K = Kurtosis; α = Cronbach's alpha; SDI = Self-Determination Index; IPA = Intention to be Physically Active

4.2. STRUCTURAL REGRESSION ANALYSIS

4.2.1. MEASUREMENT MODEL

The number of latent variables per factor was reduced in order to conduct the analysis of the measurement model and then test the structural equation model (SEM). To do so, the items were grouped in pairs (Marsh, Richard, Johnson, Roche & Tremaye, 1994). The model was, therefore, identified, since every latent variable was measured by at least two indicators (McDonald & Ho, 2002). Mardia's coefficient (12.20) was used to check factors' multivariate normality, it being lower than 0.70 (Rodríguez-Ayán & Ruiz, 2008). Besides, the multicolinearity assumption was met, since all bivariate correlations between variables were below 0.85. The errors of the endogenous variables were independent since they were not correlated with other variables. The maximum likelihood estimation method was applied.

Various absolute and relative measures of fit were calculated. X^2 and the ratio X^2/g.l. (Barrett, 2007) were used as absolute measures. Likewise, partial comparative indices of fit (IFI, CFI and TLI) were calculated, their values having to be 0.90 or higher for a model fit to be considered acceptable (Hu & Bentler, 1999). Authors such as Kline (2005) recommend the use of RMSEA and SRMR indices. Values under 0.08 of these two indices are regarded as acceptable (Hu & Bentler, 1999). The following values were obtained: X^2 (32, N = 128) = 49.61, $p < 0.024$, X^2/g.l. = 1.55, CFI = 0.98, IFI = 0.98, TLI = 0.96, RMSEA = 0.06,

SRMR = 0.05. The standardised regression weights ranged between 0.52 and 0.89. They were statistically significant and yielded satisfactory variance of the error (Hu & Bentler, 1999).

4.2.2. STRUCTURAL EQUATION MODEL

The model was recursive and identified. Mardia's coefficient (12.20) was calculated and the covariance matrix was used for data entry. The maximum likelihood estimation method was applied in the analysis. The goodness of fit test yielded appropriate fit values (Hu & Bentler, 1999) according to the established parameters: X^2 (37, N = 128) = 64.09, $p < 0.004$, χ^2/g.l. = 1.73, CFI = 0.97, IFI = 0.97, TLI = 0.94, RMSEA = 0.07, SRMR = 0.05. All relationships were significant, the standardised regression weights ranging between 0.43 and 0.88 (see Figure 1).

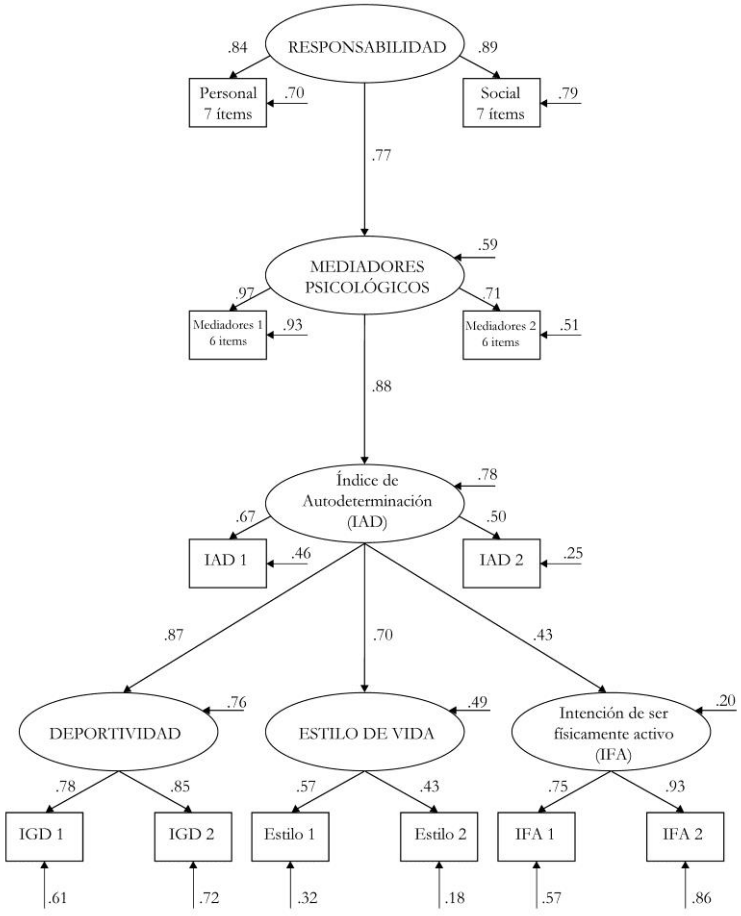

Figure 1. Structural equation model (SEM) that analyses the relationships among responsibility, psychological mediators, SDI, sportsmanship, life style and intention to be physically active. Variances are shown on the short arrows. All parameters are standardised and significant at p < 0.05.

Similarly, the contribution of each factor to the prediction of other variables was examined using standardised regression weights. The model's results (see

Figure 1) revealed that perceived responsibility predicted psychological mediators' satisfaction (β = 0.77), which predicted a more self-determined motivation of the participants (β = 0.88). On the other hand, self-determined motivation predicted higher level of sportsmanship (β = 0.87), a more active life style (β = 0.70) and the intention to be physically active (β = 0.43), explaining 76%, 42% and 20% of the variance, respectively.

4.2.3. INDIRECT EFFECTS

Mediated or indirect effects must be analysed when explaining a model (Edwards & Lambert, 2007). In the present study, the standardised indirect effects (see Table 2) revealed that responsibility had a positive effect on self-determined motivation (β = 0.68), sportsmanship (β = 0.59), intention to be physically active (β = 0.31) and life style (β = 0.47). On the other hand, psychological mediators had a positive effect on sportsmanship (β = 0.77), intention to be physically active (β = 0.40) and life style (β = 0.62).

Table 2
Standardised indirect effects of the variables

Variables	β
Responsibility → SDI	.68*
Responsibility → Sportsmanship	.59*
Responsibility → Intention to be physically active	.31*
Responsibility → Life style	.47*
Mediators → Sportsmanship	.77*
Mediators → Intention to be physically active	.40*
Mediators → Life style	.62*

*$p < .05$

5. DISCUSSION

The aim of the present study was to test the relationships among responsibility perceived by physical education students, psychological mediators, self-determined motivation, sportsmanship, intention to be physically active and life style, proposing a prediction model in accordance with HMIEM.

The results support the applicability of the proposed model of responsibility promotion in physical education class, confirming the initial hypothesis. Therefore, students who respect classroom rules, value their teachers, are respectful and, as a consequence, show positive values, could have their teacher trust them more and give them progressively more responsibility in the teaching-learning process.

Previous studies regarding physical education (Moreno-Murcia et al., 2008) had already analysed the relationships among variables contained in the social goals and the self-determination theory. In this context, there are studies that justify the prediction of basic psychological needs through responsibility

(Moreno-Murcia et al., 2008). In this regard, making students responsible for different tasks in the learning process improves perceived autonomy, perceived competence and relatedness through respect for the established role or social rules (Belando et al., 2015; Méndez-Giménez et al., 2012).

As second key element analysed in the tested model, and in accordance with the postulates of Vallerand's hierarchical model (1997; 2007), the results showed that the perception of psychological mediators satisfaction predicted self-determined motivational states, in agreement with other studies' findings (Baena-Extremera, Gómez-López, Granero-Gallegos & Martínez-Molina, 2016; Garn et al., 2011). It seems that responsible students who perceive themselves as autonomous (opportunity to choose), competent (able) and who feel well related during practice, as well as valued by the rest, generate more self-determined motivational states at contextual level during physical education classes (Belando et al., 2015; Moreno-Murcia et al., 2012; Méndez-Giménez et al., 2012). In this regard, some authors (Li, Lee & Solmon, 2005) stated that promoting responsibility lets the student perceive him/herself as more competent and, therefore, more motivated.

As third key element analysed in the tested model, high self-determined motivation fostered greater importance of sportsmanship, future intention to be physically active and leading a healthy life style, adopting habits among which physical activity has great relevance. Previous studies have pointed out that intrinsic motivation predicts greater sportsmanship and reduced unsportsmanlike behaviour (Fernández-Río, Méndez-Giménez, Cecchini & González, 2012). In light of these results, responsibility promotion is associated with sportsmanlike behaviour. Therefore, we believe that designing strategies based on responsibility promotion will produce prosocial behaviours in students (Hellison, 2011; Méndez-Giménez, Fernández-Río & Méndez-Alonso, 2015). On the other hand, students' intention to practise physical activity is predicted under self-determined motivational states (González-Cutre, Sicilia, Beas-Jiménez & Hagger, 2014; Su & Reeve, 2011; Moreno-Murcia & Huéscar, 2013). This could be due, as reported by several authors (Samperio, Jiménez-Castuera, Lobato, Leyton & Claver, 2016), to the fact that students who present better motivational states and internal locus of causality could undergo experiences of practice that make them feel better with themselves, once their basic psychological needs are satisfied, in opposition to those with lower self-determined motivation and external locus of causality.

Taking the above into account, this could lead to the generation of a healthier life style by the students. Once reality is known, as well as how ingrained sedentary leisure is among youth, we propose that the physical education teacher manages and designs strategies to activate them.

6. CONCLUSION

We believe that this study's findings are relevant since teachers can, within a responsibility-promoting environment, generate healthy habits on students, mainly by increasing physical activity (González-Cutre et al., 2014; Moreno-Murcia et al., 2012; Moreno-Murcia & Sánchez-Latorre 2016).

As regards the study's limitations, the structural equation model presented was the one which showed highest goodness of fit, but we assume that it is only one of the possibilities (Hershberger, 2006; McDonald & Ho, 2002). Nevertheless, it was grounded in a solid theoretical basis with a large body of research that justifies our approach.

It is recommended to replicate this study with a larger sample size, so that the variable dimensions can be studied and the results generalised, what would increase the study's external validity. It is proposed to conduct experimental studies that allow for determination of cause-and-effect relationships between the analysed variables.

The major contribution of the present study is to relate responsibility promotion to various motivational theories that explain human behaviour, proposing a theoretical relationship model that allows for increasing self-determined motivation and generation of healthy habits in students.

7. REFERENCES

Anderson, J. C., & Gerbin, D. W. (1988). Structural equation modeling in practise: a review and recommended two-step approach. *Psychological Bulletin, 103*, 411-423. doi: 10.1037/0033-2909.103.3.411

Baena-Extremera, A., Gómez-López, M., Granero-Gallegos, A., & Martínez-Molina, M. (2016). Modelo de predicción de la satisfacción y diversión en Educación Física a partir de la autonomía y el clima motivacional. *Universitas Psychologica*, *15*(2). doi: 10.11144/Javeriana.upsy15-2.mpsd

Barrett, P. (2007). Structural equation modelling: Adjudging model fit. *Personality and Individual differences*, *42*(5), 815-824. doi: 10.1016/j.paid.2006.09.018

Belando, N., Férriz-Morel, R., Rivas, S., Almagro, B., Sáenz-López, P., Cervelló, E & Moreno-Murcia, J. A. (2015). Sport commintment in adolescent soccer players. *Motricidade, 11*(4), 3-14. doi: 10.6063/motricidade.2969

Bollen, D. A., y Long, J. S. (1993). *Testing structural equation models.* Sage: Newbury Parck, CA.

Chantal, Y., & Bernache-Asollant, I. (2003). A prospective analysis of self-determined sport motivation and sportspersonship orientations. *Athletic Insight, The Online Journal of Sport Psychology*, *5*(4), 173-182

Chantal, Y., Robin, P., Vernat, J. P., & Bernache-Assolant, I. (2005). Motivation, sportspersonship and athletic aggression: a mediational analysis.

Psychology of Sport and Exercise, 6, 233-249. doi: 10.1016/j.psychsport.2003.10.010

Cheon, S. H., Reeve, J., Yu, T. H., & Jang, H. R. (2014). The teacher benefits from giving autonomy support during physical education instruction. *Journal of Sport* y *Exercise Psychology, 36*(4), 331-346. doi: 10.1123/jsep.2013-0231

Deci, E. L., & Ryan, R. M. (2012). Self-determintaion theory. En A. W. Kruglanski, P. A. M. Van Lange y E. T. Higgins (Eds.), *Handbook of Theories Social Psychology* (Vol. 1, pp. 416-437). London: SAGE.

De Bofarull, I., & Cusí, M. (2014). Deportividad en el deporte escolar y extracurricular. *Apunts, 116*, 52-59. doi: 10.5672/apunts.2014-0983.es.(2014/2).116.05

Edwards, J., & Lambert, L. (2007). Methods for integrating moderation and mediation: A general analitycal framework using moderated path analysis. *Psychological Methods, 12*, 1-22. doi: 10.1037/1082-989X.12.1.1

Escartí, A., Gutiérrez, M., & Pascual, C. (2011). Propiedades psicométricas de la versión española del cuestionario de responsabilidad personal y social en contextos de educación física. *Revista de Psicología del Deporte*, *20*(1), 119-130.

Escartí, A., Gutiérrez, M., Pascual, C., & Wright, P. (2013). Observación de las estrategias que emplean los profesores de educación física para enseñar la responsabilidad personal y social. *Revista de Psicología del Deporte, 22*, 159-166.

Escartí, A., Pascual, C., & Gutiérrez, M. (2011). Propiedades psicométricas de la versión española del" Cuestionario de responsabilidad personal y social" en contextos de educación física. *Revista de Psicología del deporte*, *20*(1), 119-130.

Fernández-Río, J., Méndez-Giménez, A., Cecchini, J. A., & González, C. (2012). Achievement goals and social goals´influence on physical education students´ Fair Play. *Revista de Psicodidáctica, 17*(1), 73-91.

Garn, A. C., McCaughtry, N., Shen, B., Martin, J. J., & Fahlman, M. (2011). Social goals in urban physical education: Relationships with effort and disruptive behavior. *Journal of Teaching in Physical Education*, *30*(4), 410-423. doi: 10.1123/jtpe.30.4.410

Garn, A. C., & Wallhead, T. (2014). Social goals and basic psychological needs in high school physical education. *Sport, Exercise and Performance Psychology, 4*(2), 88-99. doi: 10.1037/spy0000029

George, D., & Mallery, P. (2003). SPSS for Windows step by step. A simple guide and reference. 11.0 update (4th ed.). Boston: Allyn y Bacon.

González-Cutre, D., Sicilia, A., Beas-Jiménez, M., & Hagger, M. S. (2014). Broadening the trans-contextual model of motivation: A study with Spanish adolescents. Scandinavian Journal of Medicine & Science in Sports, *24*(4), 306-319. doi: 10.1111/sms.12142

Guan, J., Xiang, P., McBride, R., & Bruene, A. (2006). Achievement goals, social goals and sudents´reported persistence and effort in high school physical education. *Journal of Teaching in Physical Education, 25*, 58-74. doi: 10.1123/jtpe.25.1.58

Hein, V., Müür, M., & Koka, A. (2004). Intention to be physically active after school graduation and its relationship to three types of intrinsic motivation. *European Physical Education Review, 10*(1), 5-19. doi: 10.1177/1356336X04040618

Hellison, D. R. (2011). *Teaching personal and social responsibility through physical activity*. Champaign, IL: Human Kinetics.

Hershberger, S. L. (2006). The problem of equivalent structural models. En G. R. Hancock, y R. O. Mueller (Eds.), *Structutral equation modeling: a second course* (pp. 13-42). Greenwich, CT: Information Age Publishing

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional citeria versus new alternatives. *Structural Equation Modelling, 6*, 1-55. doi: 10.1080/10705519909540118

Kline, R. B. (2005). *Principles and practise of structural equation modelling*. (2ed.) New York: The Guidlford Press.

Li, W., Lee, A. M., & Solmon, M. A. (2005). Relationships among dispositional ability conceptions, intrinsic motivation, perceived competence, experience, persistence, and performance. *Journal of Teaching in Physical Education*, *24*, 51-65. doi: 10.1123/jtpe.24.1.51

Li, W., Wright, P. M., Rukavina, P. B., & Pickering, M. (2008). Measuring students' perceptions of personal and social responsibility and the relationship to intrinsic motivation in urban physical education. *Journal of Teaching in Physical Education*, *27*(2), 167-178.

Marsh, H. W., Richard, G. E., Johnson, S., Roche, L., & Tremaye, P. (1994). Physical self-description questionnaire: Psychometric properties and a nultitrait-multimethod analysis of relations to existing intruments. *Journal of Sport and Exercise Psychology, 16*, 270-305. doi: 10.1123/jsep.16.3.270

Martín-Albo, J., Núñez, J. L., Navarro, J. G., & González-Cutre, V. M. (2006). Validación de la versión española de la escala multidimensional de orientaciones a la deportividad. *Revista de Psicología del Deporte, 15*(1), 9-22.

McDonald, R. P., & Ho, R. M. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods, 7*, 64-82. doi: 10.1037/1082-989X.7.1.64

Méndez-Giménez, A., Cecchini, J.A., Fernández-Río, J., & González, C. (2012). Autodeterminación y metas sociales: un modelo estructural para comprender la intención de práctica, el esfuerzo y el aburrimiento en educación física. *Aula Abierta, 40*(1), 51-62.

Méndez-Giménez, A., Fernández-Río, J., & Cecchini, J. A. (2014). Validación de la versión en español del Cuestionario de Metas de Amistad en Educación Física. *Universitas Psychologica*, *13*(1), 227-237. doi: 10.11144/Javeriana.UPSY13-1.vvec

Méndez-Giménez, A., Fernández-Río, J., & Méndez-Alonso, D. (2015). Modelo de educación deportiva versus modelo tradicional: efectos en la motivación y deportividad. *Revista Internacional de Medicina y Ciencias de la Actividad Física del Deporte, 15*(59), 449-466. doi: 10.15366/rimcafd2015.59.004

Menéndez, J. I. & Fernández-Río, J. (2016). Violencia, responsabilidad, amistad y necesidades psicológicas básicas: efectos de un programa de educación

deportiva y responsabilidad personal y social. *Revista de Psicodidáctica, 21*(2), 245-260. doi: 10.1387/RevPsicodidact.15269

Montero, I., & León, O.G. (2007). *Métodos de Investigación en psicología y Educación.* Madrid: Mc-Grau-Hill.

Moreno-Murcia, J. A., González-Cutre, D., Chillón, M., & Parra, N. (2008). Adaptación a la Educación física de la escala de las Necesidades Psicológicas Básicas en el ejercicio. *Revista Mexicana de Psicología, 25*(2), 295-303.

Moreno-Murcia, J. A., & Huéscar, E. (2013). The importance of supporting adolescents' autonomy in promoting physical-sport exercise. *The Spanish Journal of Psychology, 16*, 81-98. doi: 10.1017/sjp.2013.81

Moreno-Murcia, J. A., Huéscar, E., & Cervelló, E. (2012). Prediction of adolescents doing physical activity after completing secondary education. *The Spanish Journal of Psychology*, *15*(01), 90-100. doi: 10.5209/rev_SJOP.2012.v15.n1.37288

Moreno-Murcia, J. A., Moreno, R., & Cervelló, E. (2007). El autoconcepto físico como predictor de la intención de ser físicamente activo. *Psicología y Salud, 17*(2), 261-267.

Moreno-Murcia, J. A., & Sánchez-Latorre, F. (2016). The effects of autonomy support in physical education classes. *Revista Internacional de Ciencias del Deporte, 3*, 79-89. doi: 10.5232/ricyde

Rodríguez-Ayán, M., & Ruiz, M. (2008). Atenuación de la asimetría y de la curtosis de las puntuaciones observadas mediante transformaciones de variables: Incidencia sobre la estructura factorial. *Psicológica, 29*, 205-227.

Samperio, J., Jiménez-Castuera, R., Lobato, S., Leyton, M., & Claver, F. (2016). Variables motivacionales predictoras de las barreras para la práctica de ejercicio físico en adolescentes. *Cuadernos de Psicología del Deporte*, *16*(2), 65-76.

Sánchez-Alcaraz, B. J., Díaz, A., & Valero, A. (2014*). Mejora de la convivencia escolar a través de la Educación Física. El Modelo de Responsabilidad Personal y Social*. Saarbücken, Deutschland: Editorial Académica Española.

Sánchez-Oliva, D., Amado. D., Leo, F. M., González-Ponce, I., & García-Calvo, T. (2012). Desarrollo de un cuestionario para valorar la motivación en educación física. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte, 7*, 227-250.

Serra, L., Aranceta, J., & Rodríguez-Santos, F. (2003). *Crecimiento y desarrollo. Estudio enKind. Krece Plus. Volumen 4.* Barcelona: Masson.

Sicilia, A., Férriz, R., & González-Cutre, D. (2014). Relación entre la satisfacción de las necesidades psicológicas básicas durante la educación física recibida en la educación secundaria obligatoria y las conductas saludables al inicio del bachillerato. *Revista Brasileira de Ciencias del Deporte, 36*(2), 559-564.

Soenens, B., Sierens, E., Vansteenkiste, M., Dochy, F., & Goossens, L. (2012). Psychologically controlling teaching: Examining outcomes, antecedents, and mediators. *Journal of Educational Psychology*, *104*(1), 108-120. doi: 10.1037/a0025742

Su, Y. L., & Reeve, J. (2011). A meta-analysis of the effectiveness of intervention programs designed to support autonomy. *Educational Psychology Review*, *23*(1), 159-188. doi: 10.1007/s10648-010-9142-7

Urdan, T.C., & Maher, M. L. (1995). Beyond a two-goal theory of motivation and achievement: a case for social goals. *Review of Educational Research, 65*, 213-243. doi: 10.3102/00346543065003213

Vallerand, R. J. (1997). Toward a hierachical model of intrinsic and extrinsic motivation. En M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 271-360). Academic Press: New York. doi: 10.1016/S0065-2601(08)60019-2

Vallerand, R. J. (2007). Intrinsic and extrinsic motivation in sport and psysical activity. A review and a look at the future. En G. Tenenbaum y R. C. Eklund (Eds.), *Handbook of Sport Psychology* (3ª ed., pp. 59-83). Nueva York; John Wiley. doi: 10.1002/9781118270011.ch3

Vallerand, R. J., Brière, N. M., Blanchard, C., & Provencher, P. (1997). Development and validation of the multidimensional sportspersonship orientation scale. *Journal of Sport and Exercise Psychology, 8*, 89-101. doi: https://doi.org/10.1123/jsep.19.2.197

Vallerand, R. J., & Losier, G. F. (1994). Self-determined motivation and sportsmanship orientations: An assessment of their temporal relationship. *Journal of Sport and Exercise Psychology*, *16*, 229-229. doi: 10.1123/jsep.16.3.229

Vallerand, R. J., & Rousseau, F. I. (2001). Intrinsic and extrinsic motivation in sport and exercise: A review using the hierarchical model of intrinsic and extrinsic motivation. En R. N. Singer, H. A. Hausenblas y C. M. Janelle (Eds.): *Handbook of Sport Psychology* (2ªed., pp. 389-416). New York: John Wiley y Sons.

Vlachopoulos, S. P., & Michailidou, S. (2006). Development and initial validation of a measure of autonomy, competence, and relatedness: the Basic Psychological Needs in Exercise Scale. *Measurement in Physical Education and Exercise Science, 10*, 179-201. doi: 10.1207/s15327841mpee1003_4

Walsh, D., Ozaeta, J., & Wright, P. M. (2010). Transference of responsibility model goals to the school environment: Exploring the impact of a coaching club program. *Physical Education and Sport Pedagogy, 15*, 15-28. doi: 10.1080/17408980802401252

Wentzel, K. R. (1991). Social competence at school: relation between social responsibility and academic achievement. *Review of Educational Research, 61*, 1-24. doi: 10.3102/00346543061001001

Número de citas totales / Total references: 57 (100%)
Número de citas propias de la revista / Journal's own references:
1 (1,75%)