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ORIGINAL

ANALYSIS OF PHYSICAL ACTIVITY AND LIFESTYLES AMONG UNIVERSITY STUDENTS

ANÁLISIS DE LA ACTIVIDAD FÍSICA Y ESTILOS DE VIDA EN ESTUDIANTES UNIVERSITARIOS

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ABSTRACT

The purpose of this study was to analyze the relationships between the types of motivation, basic psychological needs and factors related to a healthy lifestyle, as well as finding the differences based on gender, in university students. The data was collected from a questionnaire given to a sample of 218 individuals, 79 men and 139 women between the ages of 18 and 32 ($M= 20,80$ y $DT= 2,12$). The results show that the self-determined forms of motivation were significant, positively related with basic physiological needs, and with healthy lifestyles variables, but they were significant and negatively related with smoking habits. Additionally, men had a higher level in both intrinsic and extrinsic motivation compared to the women, as well as higher levels in basic psychological needs, eating habits, sleeping habits and physical activity. Encouraging motivational strategies to promote a healthy lifestyle in students is highlighted.

KEYWORDS: self-determination, basic psychological needs, healthy lifestyle, gender.

RESUMEN

El objetivo de este estudio fue analizar las relaciones entre las formas de motivación autodeterminadas, las necesidades psicológicas básicas y variables pertenecientes a estilos de vida saludables, así como hallar las diferencias en función del género, en estudiantes universitarios. Los cuestionarios validados se aplicaron a una muestra de 218 sujetos, 79 chicos y 139 chicas ($M = 20,80$ años; $DT = 2,12$). Los resultados mostraron que las formas de motivación más autodeterminadas se relacionaron de forma positiva con las necesidades psicológicas básicas, y con variables de estilo de vida que realzan la salud, y de manera negativa con el consumo de tabaco. Además, los chicos presentaron niveles más altos que las chicas en motivación intrínseca y extrínseca, necesidades psicológicas básicas, hábitos alimenticios, hábitos de descanso y práctica de actividad física. Se destaca la importancia de fomentar estrategias motivacionales para fomentar en los estudiantes un estilo de vida saludable.

PALABRAS CLAVE: Autodeterminación, necesidades psicológicas básicas, estilo de vida saludable, género.

INTRODUCTION

An analysis of the situation of university students was deemed appropriate due to the growing concern for the scarce interest that young people and adults tend to have regarding the adoption and maintenance of a healthy lifestyle and the associated important physiological and psychological benefits of practicing physical activity once they begin university (García, García-Tapiero, & Ramos, 2012).

According to Gallardo-Escudero, Muñoz, Planells & López (2015), the university years involve a series of emotional, physiological and environmental changes which can trigger the development of new habits which, in many cases, may be maintained throughout life. These changes can condition dietary habits, the practice of physical activity and other variables which may entail a health risk (Santinelli, 2011). Therefore, if one wishes to promote or educate regarding the importance of good health, it is important to consider other people's lifestyles (Leyton, Batista, Lobato, Aspano & Jiménez, 2017).

Therefore, the present study analyzed the main variables which condition healthy lifestyles: tobacco consumption, alcohol consumption, consumption of other drugs, resting habits, dietary habits (balanced diet and respect for the timetable of meals) and physical activity practice (Pastor, Balaguer & García-Merita, 1998). This work is based on the self-determination theory (Deci and Ryan, 1985) and the hierarchical model of motivation (Vallerand, 1997).

One of the theories that helps explain the motivation of university students is the self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000). This theory analyzes the degree to which people perform their actions voluntarily, by their own choice (Carratalá, 2004). Furthermore, this theory proposes that motivation is framed within a continuum in which three levels are distinguished (Vansteenkiste, Lens & Deci, 2006; Vansteenkiste, Niemiec & Soenens, 2010): intrinsic motivation (the most self-determined, meaning performing an activity because of the pleasure that comes with practicing the same); extrinsic motivation (performing an activity because of reward or external recognition of the activity itself). In addition, in all of these, from greater to lesser self-determination, we can distinguish: integrated regulation, the behavior is performed freely and integration takes place when the person evaluates the behavior and acts according to their own values and needs; identified regulation, where behavior is highly valued and the individual judges it as being important, (therefore, the person will perform it freely although the activity may not be pleasant); introjected regulation, where the reasons for participation in an activity are mainly social recognition, internal pressures or behaviors of blame; external regulation, where the behavior is performed due to the existence of rewards or compensation; and demotivation or lack of intention to act, the latter being the least self-determined form of motivation (Deci & Ryan, 2000).

Based on this theory, Vallerand (1997), developed the hierarchical model of motivation, relating different constructs based on three levels: the global level, referring to the motivation that is usually present in the life of people; the contextual level, which occurs in a concrete context; and the situational level, referring to the motivation that the person has at a given time and during a specific activity. The current study is focused on the contextual level.

According to Deci and Ryan (1991), motivation is determined by social factors, such as the practice of physical activity, which influences behavior and is motivated by three basic and universal primary psychological needs (BPN): autonomy, understood as being a person's efforts, feeling that one is at the origin of their actions and determining one's own behavior; competence, which is based on trying to control results and experience effectiveness; and, relatedness, which refers to the effort of relating and feeling an authentic relationship with others. The satisfaction of BPN will produce an increase in the more self-determined types of motivation, originating positive consequences for sports practice on the cognitive, emotional and behavioral levels. One of the possible consequences analyzed in the present study is the maintenance of a healthy lifestyle, which means the persistence of physical activity and the adoption of appropriate dietary habits, as well as the avoidance of harmful substances (Deci & Ryan, 2000).

Therefore, it is important to understand how to develop the more self-determining forms of motivation, as there are studies which demonstrate their relationship with a series of positive motivational consequences, such as the intention of continuing to practice physical activity or the satisfaction of BPN (Franco, Coterón, Martínez & Brito, 2017; Leyton et al., 2017; Sweet, Fortier & Blanchard, 2014) while, in contrast, the relationship with negative motivational factors, such as demotivation, is associated with less commitment to sports or with less healthy lifestyles (García-Calvo, Sánchez, Leo, Sánchez & Amado, 2011; Jiménez, Cervelló, García, Santos & Iglesias, 2007; Moreno-Murcia, González-Cutre & Cervelló, 2008).

Considering the gender differences and according to the literature reviewed, it has been demonstrated that men value external benefits more than sports practice (Moreno-Murcia, López, Alonso, Martínez- Galindo & González-Cutre, 2007) when compared to women who are, therefore, more intrinsically motivated (Recours, Souville & Griffet, 2004). Furthermore, some authors, such as Moreno-Murcia, Cano, González-Cutre, Cervelló & Ruiz (2009) have found that men have greater demotivation. Regarding BPN, a study performed by Amado, Sánchez- Miguel, Leo, Sánchez-Oliva, and García-Calvo (2014), demonstrated that in men, the variable that most predicts the perception of usefulness of sport is the satisfaction of the need for social relations whereas, for women, it is the need for autonomy.

Regarding the maintenance of a healthy lifestyle, men value external benefits rather than sports practice and are physically more active (Ballesteros, Freidin, Krause & Borda, 2016; González & Portolés, 2016; López, Calabuig & Pérez,

2013; Moreno-Murcia, López, Alonso, Martínez- Galindo & González-Cutre, 2007). In comparison to women, men are more careful of their diet and consume less alcohol, tobacco, and other drugs (Castillo, Balaguer & García-Mérita, 2007; Delgado, Bautista, Inglés, Espada & Torregrosa, 2005; Gallardo-Escudero et al., 2015; Pamies, Quiles & Quiles, 2012).

The main aim of the present study was to analyze the existing relationships between self-determined types of motivation, the level of satisfaction of BPN and the different variables concerning healthy lifestyles, as well as examining the gender-related differences among university students. The following hypotheses were formulated:

1. More self-determined types of motivation will positively and significantly be related with BPN, dietary habits, resting habits and the practice of physical activity.
2. More self-determined types of motivation will be negatively related with variables which are damaging to health (tobacco and alcohol consumption).
3. Male students will display higher values than women, regarding intrinsic and extrinsic motivation, BPN, dietary habits, resting habits and physical activity practice.

METHOD

This study received approval from the Bioethics and Biosecurity Committee of the University of Extremadura (Spain) according to the Helsinki Declaration. All participants were treated according to the ethical guidelines of the American Psychological Association regarding participant consent, consent of parents/guardians, confidentiality and anonymity.

Design

The study was framed within descriptive, quantitative and cross-sectional population studies according to surveys (Montero & León, 2007).

Participants

This study sample was based on a population of university students, more specifically, students enrolled in years one to four of a degree in Sports Sciences, Veterinary Medicine or Social Education. The sample selection was based on purposive or convenience cluster sampling, according to both the degree and the academic year. In total, six classes of between 25-40 students were approached.

The sample comprised 218 subjects of both sexes (79 men and 139 women) aged between 18 and 28 years ($M = 20.80$ and $SD = 2.12$). Of these, 77 were studying for a Sports Sciences degree (49 men and 28 women), 80 were

studying Veterinary Medicine (23 men and 57 women) and 61 were studying Social Education (seven men and 54 women).

Procedure

The teachers of the different faculties were initially contacted and explained the aims of the research and were requested permission to set aside the final 20 minutes of their respective classes to enable the students to complete the designated questionnaires. Thereafter, several days and times were specified for the administration of the same.

After the acceptance on behalf of the teachers, and having completed an informed consent form, the students then completed the questionnaires in their classrooms in the presence of the researcher and the respective teachers in an environment which allowed them to concentrate without distractions. Prior to the completion of the questionnaires, a presentation of the study was presented to the students which explained the aims of the study, plus instructions regarding completing the questionnaire. The students were asked to respond sincerely and were reassured that the questionnaires were confidential and completed anonymously. The designated time depended on the individual class although, in general, the duration was approximately 20 minutes.

Variables and measurement tools

In order to measure the forms of self-determined motivation, the *Behavioral Regulation in Sport Questionnaire: BRSQ* by Lonsdale, Hodge & Rose (2008) was used, validated for the Spanish context by Moreno-Murcia, Marzo, Martínez-Galindo & Conte (2011). This tool comprises 36 items, six for the evaluation of each type of motivation: intrinsic motivation (e.g. “because I enjoy trying to reach goals in the long term”), integrated regulation (e.g. “because it is part of who I am”), identified regulation (e.g. “because the benefits of sport are important to me”) introjected regulation (e.g. “because I would feel ashamed if I gave it up”), external regulation (e.g. “because others put pressure on me”) and demotivation (e.g. “I don’t know why I do it”). These statements were preceded by the phrase “I participate in this sport...”.

In order to measure satisfaction with BPN, the *Psychological Need Satisfaction in Exercise Scale (PNSE)* was used, by Wilson, Rogers, Rodgers & Wild (2006), validated to the Spanish context by Moreno-Murcia et al. (2011). This questionnaire comprised 18 items, six for evaluating each of the following basic psychological needs: competency (e.g. “I am confident about doing the most challenging exercises”, autonomy (e.g. “I believe I can make decisions in my classes”) and relatedness (e.g. “I feel close to my colleagues because they accept me the way I am”). These statements were preceded by the phrase “During training sessions...”.

In order to measure healthy lifestyle habits, we used the Healthy Lifestyle Questionnaire (EVS) by Leyton, Lobato, Batista, Aspano & Jiménez (2018). This consists of 12 items divided into the following factors: resting habits (e.g. “I respect the resting timetables”), smoking (e.g. “I feel good when I smoke”), balanced diet (e.g. “I consider that I have a balanced and healthy diet”) and respect for the timetable of meals (e.g. “I always have breakfast”). To measure the alcohol and drugs variables, the version by Jiménez, Cervelló, García-Calvo, Santos-Rosa & Del Villar (2006) was used, where the factors alcohol consumption (e.g. “Sometimes I even drink alcohol during weekdays”), and drug consumption (e.g. “it’s easy for me to get drugs”).

Finally, the variable physical activity practice was measured via the *International Physical Activity Questionnaire (IPAQ)* by Craig et al. (2003), validated to the Spanish context by Roman et al. (2010). The short version was used (seven items) with questions that referred to the time that the students dedicated to being physically active during the previous seven days (e.g. “During the last seven days, how much time have you spent sitting on a work day?”). According to Mantilla & Gómez (2007), the questionnaire evaluates three specific characteristics of activity: 1 (light): does not register physical activity or does not reach the medium level, 2 (mid): three or more days of vigorous physical activity of at least 20 minutes per day, five or more days of moderate physical activity or walking for at least 30 minutes, or five or more days of any type of any combination of light, moderate or vigorous physical activity, and, lastly 3 (high): three or more days of vigorous physical activity of more than 30 minutes per day or seven or more days of any combination of light, moderate or vigorous physical activity.

Data analysis

A reliability analysis was performed to confirm the internal consistency of the questionnaire and the different variables were created. Normality tests were performed to select the type of statistical test. The measures of asymmetry, kurtosis, Kolmogorov-Smirnov with the Lilliefors correction verified the normality of the sample distribution, therefore parametric statistics were applied. Thereafter, a descriptive analysis was performed, plus a correlation analysis and an analysis of variance. All of the above was performed using the SPSS 18 statistical program.

RESULTS

Descriptive and reliability analysis

Table 1 displays the descriptive values (mean and standard deviation) and reliability for each of the study variables.

Table 1. Descriptive statistics and reliability analysis of the variables measured using the questionnaires.

<i>Variables</i>	<i>Range</i>	<i>Mean</i>	<i>SD</i>	<i>Cronbach's alpha</i>
General IM	1-7	5.08	1.92	0.93
IM towards knowledge	1-7	4.35	2.00	0.93
IM towards performance	1-7	5.01	1.78	0.91
IM towards stimulation	1-7	4.81	1.86	0.92
Integrated regulation	1-7	4.17	2.01	0.93
Identified regulation	1-7	4.61	1.73	0.84
Introjected regulation	1-7	2.45	1.45	0.80
External regulation	1-7	1.75	1.14	0.79
Demotivation	1-7	1.89	1.31	0.79
Competence BPN	1-7	4.87	1.71	0.94
Autonomy BPN	1-7	4.67	1.61	0.90
Relatedness BPN	1-7	4.04	1.67	0.89
Tobacco smoking	1-7	1.95	1.54	0.89
Alcohol consumption	1-7	2.78	1.46	0.83
Consumption of other drugs	1-7	2.36	1.42	0.74
Resting habits	1-7	4.20	1.56	0.79
Balanced diet	1-7	4.19	1.38	0.72
Respecting timetables of meals	1-7	4.71	1.48	0.80
Practicing physical activity	1-3	1.97	0.94	-

Note. M.I. = Intrinsic Motivation; BPN= Basic Psychological Needs; SD = Standard Deviation.

It is observed that general intrinsic motivation (5.08) and intrinsic motivation to performance (5.01) present the highest mean for the sample. The lower means were found for external regulation (1.75) and demotivation (1.89). The internal consistency was measured using the Cronbach's alpha. According to Steiner (2003), the minimum acceptable value for Cronbach's alpha is 0.70. Below this value, the internal consistency of a scale is considered low. The exception to this test was the "practice of physical activity" factor, for which we did not calculate Cronbach's alpha, as the items that comprise this variable are not inter-correlated.

Analysis of correlations

Table 2. Correlation analysis.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1. General IM	-																			
2. IM knowledge	0.83**	-																		
3. IM execution	0.81**	0.81**	-																	
4. IM stimulation	0.87**	0.85**	0.88**	-																
5. Integrated R	0.78**	0.86**	0.80**	0.85**	-															
6. Identified R	0.75**	0.79**	0.82**	0.79**	0.79**	-														
7. Introjected R	0.17*	0.31**	0.38**	0.31**	0.43**	0.41**	-													
8. External R	-0.14*	0.04	0.00	-0.02	0.07	0.03	0.60**	-												
9. Demotivation	-0.16*	-0.10	-0.13*	-0.14	0.08	0.20**	0.19**	0.53**	-											
10. Competence BPN	0.75**	0.71**	0.78**	0.75**	0.75**	0.72**	0.30**	0.00	-0.12	-										
11. Autonomy BPN	0.56**	0.50**	0.61**	0.56**	0.52**	0.54**	0.24**	0.04	0.00	0.73**	-									
12. Relation BPN	0.62**	0.68**	0.65**	0.66**	0.68**	0.64**	0.36**	0.23**	0.02	0.73**	0.50**	-								
13. Smoking	-0.18**	-0.12	-0.14*	-0.16*	-0.14*	-0.15*	0.02	0.23**	0.25**	-0.13	-0.04	-0.11	-							
14. Alcohol	-0.07	-0.12	-0.06	-0.07	-0.13	-0.15*	0.09	0.27**	0.38**	-0.10	-0.00	0.06	0.35**	-						
15. Other drugs	0.03	-0.01	0.05	0.04	0.00	-0.02	0.24**	0.32**	0.33**	0.01	0.17*	0.02	0.51**	0.48**	-					
16. Resting	0.27**	0.25**	0.24**	0.25**	0.26**	0.28**	0.19**	0.02	-0.05	0.30**	0.20**	0.30**	-0.15*	-0.04	-0.07	-				
17. Diet	0.45**	0.41**	0.43**	0.42**	0.41**	0.44**	0.25**	0.06	0.07	0.44**	0.42**	0.32**	-0.07	0.00	0.09	0.39**	-			
18. Meal timetables	0.36**	0.33**	0.37**	0.36**	0.36**	0.38**	0.18**	0.04	-0.04	0.41**	0.35**	0.33**	-0.19**	-0.09	-0.05	0.53**	0.56**	-		
19. PA Practice	0.41**	0.43**	0.41**	0.43**	0.46**	0.38**	0.14*	0.01	-0.06	0.44**	0.25**	0.37**	-0.02	-0.12	-0.02	0.14*	0.15*	0.10	-	

Note. IM = Intrinsic Motivation; R. = Regulation; BPN= Basic Psychological Need; PA=Physical Activity. **. The correlation is significant at 0.01. *. The correlation is significant at 0.05.

A bivariate correlations analysis was performed to evaluate the relationships established among the study variables (Table 2). The results revealed that general intrinsic motivation was positively and significantly associated with intrinsic motivation towards knowledge, execution and stimulation, integrated regulation, identified and introjected, the basic psychological need for competence, autonomy and relatedness, resting habits, dietary habits and the practice of physical activity. Negative and significant relationships were found to be associated with external regulation, demotivation and smoking. Intrinsic motivation towards knowledge was positively and significantly associated with general intrinsic motivation, toward execution, stimulation, integrated regulation, identified regulation and introjected regulation, the autonomy basic psychological need, competence and relatedness, resting habits, dietary habits and the practice of physical activity. Intrinsic motivation towards execution was positively and significantly associated with general intrinsic motivation, motivation towards knowledge, stimulation, integrated regulation, identified and introjected regulation, the basic psychological need of competence, autonomy and relatedness, resting habits, dietary habits and the practice of physical activity, and negatively and significantly associated with demotivation and smoking. Lastly, intrinsic motivation towards stimulation was positively and significantly associated with general motivation, integrated regulation, identified regulation and introjected regulation, the basic psychological needs of competence, autonomy and relatedness, resting habits, dietary habits and the practice of physical activity and negatively and significantly associated with smoking. Finally, demotivation was positively and significantly associated with identified regulation, introjected regulation, external regulation, smoking, alcohol and other drugs consumption and negatively and significantly associated with general intrinsic motivation and execution.

Analysis of differences according to gender

An ANOVA analysis was performed using gender as an independent variable, and the variables analyzed in the present study were used as the dependent variables (Table 3). All the means were in favor of males, with the exception of the demotivation variable.

The variables in which significant differences were observed were: general intrinsic motivation (0.00), intrinsic motivation towards knowledge (0.00), towards performance (0.01), towards stimulation (0.00), integrated regulation (0.00), identified regulation (0.00), introjected regulation (0.02), competence (0.00), autonomy (0.00) and relationships with others (0.00), as well as drug consumption (0.03) and physical activity practice (0.01).

The differences found in the general intrinsic motivation presented in students where that men ($M = 5.80$) present greater motivation than women ($M = 4.65$). The analysis also revealed that men ($M = 5.23$) presented greater intrinsic motivation towards knowledge when compared to women ($M = 3.83$).

Regarding intrinsic motivation towards performance, men ($M = 5.45$) presented a higher average compared to women ($M = 4.75$). This also occurred with intrinsic motivation towards stimulation, which revealed that, for men, ($M = 5.38$) this was higher when compared to women ($M = 4.48$).

Concerning integrated regulation, for men ($M = 4.93$) this was greater than women ($M = 3.71$). The same occurred with identified regulation, which was greater in men ($M = 5.10$) compared to women ($M = 4.33$) and for introjected regulation, with a mean of 2.76 in men and 2.27 in women.

In relation to the basic psychological need of competence, men had a greater mean ($M = 5.50$), compared to women ($M = 4.50$). The same occurred with the remaining BPN: men ($M = 5.11$) had greater autonomy compared to women ($M = 4.40$), and a higher mean for the basic psychological need of relatedness ($M = 4.69$), compared to women ($M = 3.67$).

Table 3. Analysis of variance according to gender.

Variables	Root mean square	<i>F</i>	<i>p</i>	Mean males	Mean females
General IM	66.87	19.76	0.00	5.80	4.65
IM towards knowledge	99.69	28.06	0.00	5.24	3.84
IM towards performance	24.25	7.93	0.01	5.45	4.76
IM towards stimulation	40.69	12.43	0.00	5.38	4.49
Integrated regulation	74.78	20.13	0.00	4.93	3.72
Identified regulation	30.14	10.51	0.00	5.10	4.33
Introjected regulation	12.40	6.06	0.02	2.77	2.27
External regulation	3.41	2.62	0.11	1.92	1.66
Demotivation	0.32	0.18	0.67	1.84	1.92
BPN Competence	51.12	19.00	0.00	5.51	4.50
BPN Autonomy	22.48	10.20	0.00	5.12	4.41
BPN Relatedness	52.54	20.58	0.00	4.69	3.67
Tobacco smoking	0.26	0.11	0.74	1.91	1.98
Alcohol consumption	0.62	0.29	0.59	2.85	2.74
Consumption of other drugs	9.91	5.02	0.03	2.64	2.20
Resting habits	2.33	0.96	0.33	4.34	4.12
Balanced diet	3.76	1.99	0.16	4.36	4.09
Respecting timetables of meals	1.72	0.78	0.38	4.83	4.65
Physical activity practice	6.52	7.55	0.01	2.20	1.84

Note. IM = Intrinsic Motivation; BPN= Basic Psychological Needs; *p* = significance >0.05

This study demonstrated that drug consumption in male students was higher ($M = 2.63$) compared to their female counterparts ($M = 2.19$), likewise, men ($M = 2.20$) performed more physical activity more than women ($M = 1.84$).

DISCUSSION

The previously reported results are discussed below according to the study hypotheses and taking into consideration the relevance of analyzing the motivational processes and lifestyles of university students.

Concerning the first hypothesis: “the more self-determined forms of motivation will be positively and significantly related with BPN, dietary habits, resting habits and physical activity practice”, our findings confirm this statement. Many previous studies have reported findings that similarly demonstrate this relationship (Balaguer, Castillo & Duda, 2008; Franco et al., 2017; Moreno-Murcia, Conte, Borges & González-Cutre, 2008; Samperio, Jiménez, Lobato, Leyton & Claver, 2016; Standage, Duda & Ntoumanis, 2006). It is important to highlight that the basic psychological need of relatedness obtained lower values compared to the remaining BPN. This may be due to the higher values of autonomy, as students are beginning to become more independent within a completely different environment when compared to their preceding years in a school environment.

Furthermore, this study demonstrates the positive relationship among the more self-determined forms of motivation and dietary habits, resting habits and physical activity practice (Cascaes et al., 2017; Jiménez, et al., 2007; Moreno-Murcia et al., 2008; Varela & Silvestre, 2010). Therefore, it is logical that students who present greater self-determined motivation have more healthy lifestyles and that this has a direct influence upon their physical, emotional and mental development during their time at university.

Regarding the practice of physical activity, similar relationships were found in a recent study among university students which related motivation and the practice of physical activity using the IPAQ questionnaire. Práxedes, Sevil, Moreno, Del Villar & García-González (2016), determined the importance of developing motivational processes to improve physical activity levels, especially within university programs that bear less relation with the same.

The present study underlines the importance of satisfying BPN (Deci & Ryan, 2000), by enabling the students to select which activities to perform, and establishing goals that represent achievable challenges, thus promoting social relations, providing a positive and individualized feedback and, therefore, increasing self-determined motivation and achieving a greater commitment to a healthier lifestyle.

Regarding the second hypothesis: “The forms of more self-determined motivation will negatively relate with variables which are harmful for health (smoking and drinking alcohol)”, our results also confirm this statement. Álvarez- Aguirre, Alonso-Castillo & Guidorizzi (2014) & Moreno et al. (2008), affirm that students who present a greater probability of consuming drugs, such as alcohol and tobacco, are those who are more exposed to different personal risk factors in their university environment and cognitions related with healthy lifestyles, related with a lesser self-determined motivation.

Carballo et al. (2013), reaffirm that the university years are a period where students begin to consume harmful substances, especially when socializing with their peers. In this sense, Martínez & Villar (2004) & Ruiz-Ruiseño et al.

(2011) coincide that binge drinking on the streets is a situation which favors alcohol and smoking (Cortés, Espejo & Giménez, 2008), as well as social relations among youth.

Regarding the third hypothesis: “men will display greater values compared to women regarding intrinsic and extrinsic motivation, BPN, eating habits, rest habits and physical activity practice”, several studies confirm this (Brunet & Sabiston, 2009; Moreno-Murcia et al., 2009). In the present work, the basic psychological need of competence presented the greatest values. This indicates that men feel more competent when practicing sports when compared to women, which may be due to the fact that they feel they have greater qualities for overcoming any movement-related challenge as, traditionally, sports have been more adapted to men’s capabilities, as opposed to those of women (Moreno-Murcia et al., 2009). Furthermore, according to Romero-Martín, Gelpi-Fleta, Mateu-Serra & Lavega-Burgués (2017), in a study with university students, men have a greater emotional experience than women with regards physical activities which highlights the importance that the type of activity has in predicting the significance of the emotional experience.

Therefore, there is a need to reconstruct current sports from a perspective which depends on democratic values that are far from sexist stereotypes (Moreno, Cervelló & González-Cutre, 2006).

The main limitation of this study is related to the fact that we only used questionnaires for data collection. Thus, the data obtained do not provide as much information as a triangulation based on multiple methods, both from the point of view of the perspectives gathered (teachers, parents, trainers...), as well as the sources of information (registration forms, interviews...), or if we had combined this type of research with other more observational methods. A further limitation is the fact that this study sample did not have the same number of women as men, which may have affected the results. However, this corresponds with the actual number of students who were in the classrooms at the time. Therefore, in the future, a longitudinal study would be recommendable, to analyze all students within this academic program and not solely those who are present in the classroom at the time of the study. This would enable a larger sample.

Based on the findings of the present study, we believe it is necessary for the different universities to create an environment for interventions dedicated to helping teenagers maintain a healthy lifestyle, as well as acquire the satisfaction derived from the basic psychological needs of competence, autonomy and relationships with others. The importance of understanding the sports preferences of students should also be considered by the representative bodies of the universities, in order to enhance physical activity. Therefore, it is necessary to provide a more diverse variety of sports in order to increase adherence to sports activities within the university community. Lastly, it would be interesting to perform further research solely focused on subjects with less self-

determined motivation in order to satisfy the BPN that are frustrated, and promote healthy habits.

CONCLUSIONS AND PRACTICAL APPLICATIONS

The following conclusions are extracted from this study:

- The more self-determined types of motivation are positively and significantly related with BPN, dietary habits, resting habits and physical activity practice, and negatively associated with harmful health variables (smoking and drinking alcohol).

Therefore, as a practical application, it would be interesting if the practice of physical activity were promoted within the university environment via extracurricular training activities and emphasizing the relationships between university students as the social component is very important in any sports activity. This move would create a greater adherence to practice and the adoption of more healthy lifestyles. Thus, the promotion of physical activity via training activities organized by the university could take the place of students' partying as well as decrease their smoking and alcohol consumption by promoting social relationships and healthy lifestyles that remain over time. This may also prevent illnesses and metabolic, cardiovascular, respiratory, hormonal and psychological problems, among others (Lindsay et al., 2014).

- Regarding the gender differences, men showed greater values than women for intrinsic and extrinsic motivation, BPN, dietary habits, resting habits and physical activity practice.

A practical solution for this would be to promote sports as a complementary activity in the university context, with women in charge of planning different events celebrated at the faculties, such as an increase in the availability of fruit in canteens, activities with training content regarding healthy lifestyles, gymkhanas encompassing physical tests etc. In general, to promote a healthy lifestyle and thus encourage the students to really get to know each other, express themselves better, acquire new skills, and demonstrate their abilities. This move would also serve as a stimulus for the incorporation of women into a society without gender distinctions via reinforcing female participation in the design and implementation of sports policies where they continue to be under represented when compared to other environments (Lanzuela, Matute, Tifner, Gallizo & Gil- Lacruz, 2007).

Therefore, it is considered especially important to promote satisfaction of BPN (competence, autonomy and relatedness), which can increase the more self-determined forms of motivation and, consequently, the adoption of more healthy lifestyles among university students, by promoting physical activity practice, improve dietary and resting habits and decrease the use of harmful substances.

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