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Decisional balance, motivation and exercise enjoyment in a Mexican population sample

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EL BALANCE DECISIONAL Y LA AUTODETERMINACIÓN COMO PREDICTORES DEL DISFRUTE DEL EJERCICIO EN UNA POBLACIÓN MEXICANA

KEYWORDS: Decisional balance, self-determination, exercise, enjoyment.

ABSTRACT: The aim of the present study was to examine the role of decisional balance and different types of motivation in predicting exercise enjoyment in a sample of 419 participants from the metropolitan area of Monterrey (Mexico), aged between 18 and 55 (M_{age}= 31.02 years; *SD* = 11.32; 50.1% males). A hierarchical regression analysis was conducted to predict exercise enjoyment. Results indicated that decisional balance predicted 26% of exercise enjoyment variance, adding the different types of motivation a 15% of the variance (total R^2 = .41). In conclusion, self-determined motivation makes a significant contribution to the prediction of exercise enjoyment by decisional balance.

The regular practice of physical exercise is among the health habits leading to a healthy lifestyle; it is frequently regarded as favorable to health and as a prophylactic activity (Bangsbo et al., 2016; WHO, 2010). Literature has employed different theoretical frameworks to identify the antecedents of exercise. One of these antecedents has been addressed by Ryan and Deci's (2017) self-determination theory (SDT). This macro theory accounts for the extent to which behaviors are self-determined, in other words, how much people act voluntarily or by their own choice; according to their degree of self-determination or autonomy, there are three distinct types of motivation: intrinsic motivation, extrinsic motivation, along with amotivation.

Intrinsic motivation is the most self-determined type of motivation and it is associated with behaving out of the satisfaction and pleasure derived from the behavior in question. Extrinsic motivation refers to carrying out an activity because of the incentives or positive consequences associated with the activity, and is in turn divided in four types of regulation that vary as a function of the degree of autonomy (Ryan and Deci, 2017). External regulation is the least self-determined of the four types, and it has to do with behaviors aimed at obtaining a reward or avoiding punishment. In introjected regulation, behaviors are aimed at avoiding guilt or shame. Identified regulation is present when behaviors are considered important for the person's goals. The most self-determined type is integrated regulation, where the results of behaviors are congruent with the individual's values and needs. Self-determination theory (Deci and Ryan, 2008) states that these types of regulation are grouped within autonomous motivation

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(including intrinsic, integrated, and identified regulations), as opposed to controlled motivation (including introjected and external regulations). Finally, amotivation takes place when individuals have no intention of carrying some activity, since they lack both intrinsic and extrinsic motivation (Ryan and Deci, 2000).

The decision of practicing physical exercise is also addressed by the concept of intention. Within this approach, people make rational decisions as a result of their processing information about the advantages and disadvantages (pros and cons, respectively) associated with a certain behavior (Hagger and Chatzisarantis, 2005); the difference between these pros and cons has been termed decisional balance (Velicer, DiClemente, Prochaska and Brandenburg, 1985). The underlying hypothesis of this concept is that decisional balance determines a person to take up a behavior (Marcus and Forsyth, 2009). Perceiving more advantages than disadvantages might be a critical aspect for people to self-determinedly decide to commit themselves to doing exercise.

Self-determined or autonomous motivation has been associated with desirable effects, such enjoying exercise (Álvarez, Balaguer, Castillo and Duda, 2009) or the intention to continue exercising (Balaguer, Castillo, Duda, Quested and Morales, 2011). Enjoyment has also been associated with increased adherence to doing exercise (see Falco, Samdal, Estevan and Álvarez, 2013), and it has been suggested as a mediator between self-determined motivation and the practice of healthy physical activity (Moreno-Murcia, Cervelló, Huéscar and Avilés, 2016).

Based on previous results, which to the best of our knowledge has not holistically associated these variables, the objective of the present study was to examine the predictive capabilities of decisional balance and different types of motivation to determine exercise enjoyment; our hypothesis is that decisional balance will positively predict exercise enjoyment, and that self-determined motivation increases this predictive power.

In addition, knowing the predictive role of the self-determined motivation beyond the decisional balance becomes important in the effectiveness of programs and interventions to achieve the promotion of exercise enjoyment and thus the decision to keep exercising.

Method

Participants

The sample was composed of 419 participants (50.1% men and 49.9% women; M_{age} = 31.02 years; *SD* = 11.32; range = 18–55), from the metropolitan area of Monterrey (Mexico). They were selected via a convenience sampling method.

Instruments

The participants' perceptions about the pros and cons of doing physical exercise was measured with the Mexican version (Zamarripa, Hernández-Soto and Hernández-Cruz, 2016) of the Decisional Balance Scale for Exercise (Marcus, Rakowski and Rossi, 1992) The instrument consists of 16 items, 10 of them reflecting advantages (pros) and six reflecting disadvantages (cons) of doing physical exercise. An example of the pros subscale is: 'Regular exercise would help me relieve tension'; an example of the cons subscale is 'Regular exercise would take too much of my time'. Responses are arranged on a Likert-type scale from 1 (*not important*) to 5 (*very important*). Decisional balance was calculated by subtracting the cons factor mean from the pros factor mean. Evidence for the reliability and predictive validity of this instrument has been provided in previous research (e.g., Zamarripa et al., 2016).

Motivation towards exercise was measured using the Mexican version (Zamarripa, Castillo, Fernández-Baños, Delgado and Álvarez, 2017) of the Behavioural Regulation in Exercise Questionnaire (Wilson, Rodgers, Loitz and Scime, 2006). This instrument has 23 items corresponding four items per type of regulation (intrinsic, integrated, introjected, external, and amotivation), except for identified regulation, which is composed of three items. The questionnaire begins with the stem: I exercise... An example item is: '... because I feel guilty when I don't exercise'. Responses are provided in 5-Likert-type scale, ranging from 0 (*not true at all*) to 4 (*totally true*). In accordance with self-determination theory (SDT), intrinsic motivation, integrated regulation, and identified regulation were combined to form self-determined or autonomous motivation, and introjected regulation and external regulation were combined to create controlled motivation. Previous studies have tested this instrument's reliability and validity (e.g., Zamarripa et al., 2017).

Enjoyment with physical activity was measured using an adapted version of the Physical Activity Enjoyment Scale (Kendzierski and DeCarlo, 1991). This semantic differential scale is composed of 18 pairs of opposite adjectives (polar adjectives). Respondents are asked to indicate their position

along a seven-point scale between the pair of words. An example item is: 'I enjoy it' – 'I hate it'. The values of items with inverted polarity are recoded and the participants' responses are averaged. A high score in the scale indicates that the activity is much enjoyed. Evidence for the reliability and validity of this scale has been provided in previous studies (e.g., Kendzierski and DeCarlo, 1991).

Procedure

Ethical approval for the study was obtained from a university ethics review committee. The instruments were administered from May to June 2015 during face-to-face interviews at the respondents' homes; all surveyors were timely trained and participants were informed about the objective of the study and guaranteed confidentiality and anonymity. Participation was voluntary, and only people who provided informed consent were part of the study.

Data analysis

The internal consistency of the instruments, as well as descriptive statistics, correlations, multivariate analysis of variance (MANOVA), and hierarchical regression were calculated using the SPSS 21.0 (IBM) statistical software.

Results

Descriptive analyses, internal consistency, and correlations between variables are presented in Table 1. Participants' responses showed that decisional balance was positive, while self-determined motivation and enjoyment were above the mean value of the questionnaire. Reliability coefficients were satisfactory (a > .70). Decisional balance, autonomous motivation, and enjoyment revealed significant correlations with each other, as well as negative correlations with controlled motivation and amotivation (see Table 1).

MANOVA results showed no significant differences due to age or sex, neither due to their interaction (Lambda Wilks = .64, $p > .05$) between the study variables.

Within the hierarchical regression analysis, exercise enjoyment was positively predicted by decisional balance and autonomous motivation but not predicted by controlled motivation. Amotivation was a negative predictor of exercise enjoyment. Decisional balance predicted 26% of variance in exercise enjoyment, and in a second step, the types of motivation added 15% to variance, which was summed up for a total of 41% of capability to predict the variance in exercise enjoyment (see Table 2).

Discussion

The goal of the present study was to examine the predictive role of decisional balance and the different types of motivation in regard to exercise enjoyment in a sample of general population from the metropolitan area of Monterrey, Mexico.

The findings of this study are in support of a positive role to decisional balance and self-determined motivation in predicting exercise enjoyment. Perceiving more advantages than disadvantages (i.e., the pros outweigh cons of exercise) supported the hypothesis that an individual is less likely to enjoy exercise unless he or she perceives the positives of regular exercise. In addition, the pattern of relationships between decisional balance and types of motivation found in this study is supported by that of DeLong (2006), which suggested that the advantages of physical exercise may have more weight when people are autonomously motivated. For its part, the state of enjoyment is associated with intrinsic motivation (Reeve, 1989), and it has been regarded as a key component in the design of organized physical activities as a background to encourage exercise continuation (Falco et al., 2013; Moreno-Murcia et al., 2016).

The results of the present study are also in support of SDT (Ryan and Deci, 2017), which states that adaptive consequences, such as higher enjoyment with the activity, are more probable when people participate in the activity on their own will than when they are, for instance, driven to act due to external factors or when there is no motivation at all, that we can expect lower degree of enjoyment. The study population confirmed this principle of SDT by demonstrating that, when they are driven to action by self-determined motivation, the activities are associated with increased enjoyment, whereas when their motivations are extrinsic (controlled motivation) or non-existent (amotivation), they are less likely to perceive enjoyment. These results are in accordance with other studies in the area of sports (e.g., Álvarez et al., 2009), where a higher deal of fun with practice was positively predicted by self-determined motivation.

In short, both the theoretical postulates of SDT and the empirical results indicate the importance of decisional balance and self-determined motivation in order to predict exercise enjoyment, which could represent a critical aspect of an individual's decision to commit to exercise. In accordance with

our findings, physical activities should be designed with the aim of highlighting the positive aspects of exercise, and they should also encourage self-determined behaviors among participants. Finally, the importance of this results stated in the improvement of the effectiveness of the interventions utilized to promote a higher quantity of physical exercise in the population.

Variables	Range	*M*	*SD*	Alpha	1	2	3	4
Pros	1-5	3.62	0.81	.91				
Cons	1-5	2.80	0.81	.80				
1. Decisional balance	-5-5	0.82	1.19	-	1			
2. Autonomous motivation	0-4	2.52	0.91	.91	.47**	1		
3. Controlled motivation	0-4	1.46	0.90	.83	-.31**	.01	1	
4. Amotivation	0-4	1.24	1.09	.83	-.51**	-.23**	.70**	1
5. Enjoyment	1-7	4.77	1.25	.94	.51**	.54**	-.24**	-.43**

**$p < .001$

Table 1. Descriptive statistics, internal consistency, and correlations between study variables.

Predictor variables	b	SE	β	*t*	R^2	*F*
Step 1					.26**	147.10**
Decisional balance	.54	.05	.51	12.13**		
Step 2					.41**	71.84**
Decisional balance	.23	.05	.22	4.44**		
Autonomous motivation	.53	.06	.39	8.70**		
Controlled motivation	-.04	.08	-.03	-.52		
Amotivation	-.24	.07	-.21	-3.51**		

** $p < .01$

Table 2. Hierarchical regression analysis predicting exercise enjoyment from decisional balance and types of motivation

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PALABRAS CLAVE: Balance decisional, auto-determinación, disfrute, ejercicio.

RESUMEN/ABSTRACT: El propósito del presente estudio fue examinar el papel predictivo del balance decisional y los diferentes tipos de motivación sobre el disfrute con el ejercicio en una muestra de 419 participantes con edades comprendidas entre los 18 y los 55 años (M_{edad} = 31.02; *DT* = 11.32; 50.1% varones) que viven en el área metropolitana de Monterrey (México). Se realizó un análisis de regresión jerárquica para predecir el disfrute con el ejercicio. Los resultados indicaron que el balance decisional predijo el 26% de la varianza del disfrute con el ejercicio, añadiendo los tipos de motivación un 15% de dicha varianza (R^2 total = .41). Se concluye que la motivación auto-determinada es una variable que contribuye significativamente a la predicción del balance decisional sobre el disfrute con el ejercicio.

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