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Examining the validity of the personal-social responsibility questionnaire among athletes

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Abstract—The teaching personal-social responsibility (TPSR) model is a well-established approach for developing positive social behaviors. However, today's research community has diagnosed the need to gather greater empirical evidence regarding the consistency of the evaluation tool in measuring personal-social responsibility levels. Thus, this study was geared towards testing the validity and reliability of a two factor model of the Personal and Social Responsibility Questionnaire (PSRQ) among athletes. A questionnaire was administered to 517 athletes, distributed into two representative samples of different competitive levels, sports and regions. Exploratory and confirmatory factor analyses were used to examine the PSRQ's factor structure. The scale showed good psychometric properties and the factor structure was stable in the two samples, providing evidence of cross validity. Implications and research directions of these results are discussed.

Keywords: psychology, measurement, youth, behavior, ethics

Resumo—"Análise da validade do Questionário de Responsabilidade Pessoal e Social (QRPS) no desporto." O modelo da responsabilidade pessoal e social (RPS) é uma abordagem bem estabelecida na literatura para o desenvolvimento de comportamentos positivos através do desporto. No entanto, a comunidade científica continua a afirmar a necessidade de avaliar com robustez a ferramenta de avaliação para medir os níveis de RPS. Assim, este estudo foi orientado para testar a validade e a confiabilidade de um modelo de dois fatores do Questionário da Responsabilidade Pessoal e Social (QRPS) em atletas. O questionário foi aplicado a 517 atletas, distribuídos em duas amostras representativas de diferentes níveis competitivos, desportos e regiões. Foram usadas análises fatoriais exploratórias e confirmatórias para análise das qualidades psicométricas. Os resultados obtidos mostraram que a escala tem boas propriedades psicométricas e a estrutura fatorial foi estável em duas amostras destintas, comprovando a validade cruzada. Implicações e direções destes resultados da investigação são discutidos.

Palavras-chave: psicologia, medição, juventude, comportamento, ética

Resumen—"Análisis de la validad del Cuestionario de Responsabilidad Personal e Social (CRPS)." El modelo de responsabilidad personal-social (PSR) es un enfoque bien establecido para el desarrollo de comportamientos sociales positivos. Sin embargo, la comunidad de investigación ha diagnosticado la necesidad de reunir mayor evidencia empírica sobre la consistencia de la herramienta de evaluación para medir los niveles de responsabilidad personal e social. Por lo tanto, este estudio se orientó a probar la validez y fiabilidad de un modelo de dos factores del Cuestionario de Responsabilidad Personal y Social (CRPS) entre los atletas. Se aplicó el cuestionario a 517 deportistas, distribuidos en dos muestras representativas de diferentes niveles competitivos, deportes y regiones. Se utilizaron análisis factoriales exploratorios y confirmatorios para examinar la estructura factorial del QRPS. La escala mostró buenas propiedades psicométricas y la estructura factorial se mantuvo estable en dos muestras distintas, comprobando la validez transcultural. Se discuten las implicaciones y las líneas de investigación de estos resultados.

Palabras clave: psicología, validación, juventud, comportamiento, ética

Theoretical framework

Personal and social responsibility consists of individuals making choices and behaving as a result of being focused on human values centered on caring for others, which entails the promotion of positive daily-life environments (Hellison, 1985). The research community considers the expansion and promotion of positive youth development programs to be an important goal to strive for

(Damon, 2004). Such programs aim to align youngsters' potential with their own resources, thus promoting a more successful transition to adult life (Wright & Craig, 2011). The models of these programs are centered around relevant structured activities, based on the identification and development of emotional and behavioural features of personal benefit to youngsters, as well as to the community they happen to be involved with (Geldhof, Bowers, & Lerner, 2013; Sandford, Armour, & Warmington 2006).

Research on the positive development of youth (Li, Wright, Rukavina, & Pickering, 2008; Watson, Newton, & Kim, 2003) has also identified that the life structures of youngsters contain the resources required for a healthy development (Benson, Scales, Hamilton, & Sesma, 2006). Consequently, since physical education teachers have to address issues such as respect, discipline and caring, it is not surprising to note that the first educational setting that looked at the Teaching Personal and Social Responsibility (TPSR) model was that of school-based physical activities (Watson *et al*., 2003). As Hellison (1995) posited, since the performance of movement is a highly emotional and interactive experience, it carries significant potential for influencing people's affective development. Therefore, when physical activities are approached from an educational perspective, they are looked upon as a privileged tool in promoting the positive development of desirable social skills and behaviors (Hellison & Martineck, 2006), which is why Hellison and Wright's (2003) TPSR model combined the performance of physical activities with the development of social values. Such programs are conceived so as to supply personal development by means of specific contexts. The latter are meant to facilitate access to positive experiences, which derive from supervised extra-curriculum activities geared towards developing values such as resilience and a self-perception of competence (Lerner, 2009; Roth, Brooks-Gunn, Murray, & Foster, 1998).

The majority of studies that evaluated the impact of such programs have focused on ethnographic interviews and observations of TPSR levels through the performance of case studies (e.g., Holt & Neely, 2011). Hellison and Martineck (2006) posited that such approach fails to produce a consistent empirical body of knowledge, meaning that the positive effects that exercise programs have over youth cannot be looked upon as anything more than mere beliefs concerning a non-clarified process, itself based on philosophical and practical orientations.

Several researchers view the recreational environment of physical activities as the key to the successful luring of youngsters in becoming involved with positive development programs (Hellison & Martinek, 2006; Watson *et al*., 2003). In fact, over the past 40 years, Hellison's model was applied within physical education, community centres, after-school programs and youth oriented summer camps (Hellison & Martinek, 2006). Given the short-term period of these programs, sport participation within responsibility oriented programs is, not only an educationally desirable process, but also one that should be long lasting over the course of adolescents' development. Nevertheless, organized sports-related literature is lacking (Watson *et al*., 2003).

If followed, such line of research may eventually provide useful insights towards understanding the variables most determinant within the long term process of sport participation and the development of responsibility. This being said, ensuring the development of a measuring tool for characterizing this relationship is of great importance, so as to understand both how the phenomenon develops and how TPSR can be evaluated in an objective and unequivocally accepted manner (Wright & Craig, 2011).

By surveying participants of a summer sports camp, Watson *et al*. (2003) examined the relationship between different perceptions of values-based constructs, while also proposing an instrument for measuring personal-social responsibility. The latter was made up by four factors, one associated with each one of the core responsibility levels from Hellisons' model. Li *et al*. (2008) found some discrepancy between Hellisons' model and the tool obtained by Watson *et al*. (2003). It was argued that some dimensions overlapped, which brought about the suggestion of creating only two distinct factors, as performed by Hellison and Martinek (2006) upon focusing on personal and social responsibility development levels. According to Li, Wright, Rukavina, and Pickering (2008), the instrument with two factors reveals good psychometric properties, thus proving to be a reliable tool in assessing the perceptions of the TPSR by students. Nevertheless, given that cultural differences may limit item interpretation and factor content, the authors highlighted that additional research needs to be conducted by using the PSRQ within different contexts. In another cultural context, Escartí, Gutiérrez, and Pascual (2011) developed a similar version of PSRQ, focusing on the development of measurement tools to assess *personal and social responsibility* in physical education. The authors conducted a study using Spanish students and developed the Spanish version of the PSRQ, consisting of two dimensions. The proposed factor structure revealed good psychometric properties, proving to be a reliable tool to assess PSR in physical education environments. This Spanish version confirms the proposed two-factor structure in the original questionnaire and provides reasonable coefficients of internal consistency, close to the values obtained by Li *et al*., (2008).

It should be noted that an instrument to assess the perception of personal and social responsibility in physical education is an important contribution to the perspective of positive youth development, and particularly so in the literature related to the personal and social responsibility model. Some important steps of the validity process were not completed, such as the convergent validity and discriminant validity tests. As such, in order to improve our continued understanding of how to assess PSR, it is important to examine the model using more robust techniques.

Therefore, considering previous research (e.g. Escartí, Gutiérrez, & Pascual, 2011; Li *et al*., 2008; Watson *et al*., 2003), the current study looks to examine the psychometric properties of the Personal and Social Responsibility Questionnaire (PSRQ) within Portuguese athletes. Though every new application of an instrument is, inherently, a contribution to its continual validation efforts, the development and validation of the PSRQ adapted for the Portuguese language assumes an important contribution to better understand PSRQ in different settings (Baric & Horga, 2006). Hence, this study expects to provide greater consistency in clearing up how the development of personal and social responsibility is influenced by sport participation.

Method

Ethics

The current study was conducted in Portugal after approval by the Ethics Committee of Human Kinetics Faculty at Lisbon University (approval number 6/2013 in October of 2013). Athletes were invited to voluntarily participate in the study, in which participants received no incentives. All participants were provided with information about the purpose, objectives and methods of the study before answering the questionnaires. Additionally, confidentiality and anonymity of the responses were guaranteed, with data protection being ensured at all times. Each participant gave informed consent for inclusion in the study.

Participants

The study sample is comprised by two convenience groups, with participants from different competitive levels (i.e. elite, national and regional levels), as well as from distinct sports [i.e. team sports ($n = 313$; 60.5%), individual sports ($n = 133$; 25.7%) and combat sports ($n = 71$; 13.7%)] and regions of Portugal. The total number of participants was 517 athletes ($n_{1st\ sample} = 263$; $n_{2sd\ sample} = 254$) . The first sample was comprised by 76.8.4% of males athletes ($n = 202$) representing about two thirds and by 23.2% of females athletes ($n = 61$). The mean age was 16.87 years old ($s = 0.24$).

The second sample comprised 79.1% of male athletes ($n = 201$) and by 20.9% of females athletes. The mean age was 16.96 years old ($s = 0.32$). Both samples exceeded the minimum sample size ($n = 200$) recommended for structural equation modeling (Hair, Black, Babin, & Anderson, 2009).

Measures

The original Personal and Social Responsibility Questionnaire (PSRQ) developed by Watson *et al.* (2003), and modified afterwards by Li *et al.* (2008), was adapted in order to assess athletes' perceptions of personal and social responsibility within sport settings. The previous versions (e.g., Li *et al.*, 2008) were used within the physical education context. Therefore, in the current study we modified some of the items, in order to better describe the sport context instead of the physical education environment. For example, we replaced the word teacher by coach (item 2), and we rephrased sentences, replacing by team colleagues where first was the term "others" (item 3, item 4, and item 7) in order to focus the athletes to their team mates.

The questionnaire included the fourteen items distributed by two dimensions. The first is related to personal responsibility, which is reflective of the basic responsibilities required in order to establish a positive learning environment that reflects effort and self-direction (items 8 to 14). The sample items were comprised, for example by "I try hard" and "I set goals for myself." The second dimension refers to social responsibility, reflecting the responsibility required in order to establish a positive learning environment that reflects both respect and caring for others (items 1 to 7). The sample items were comprised, for example by "I respect my team colleagues" and "I am helpful to my team colleagues."

All items were measured using a 6-point Likert-type scale that ranged from 1 (*strongly disagree*) to 6 (*strongly agree*). Subjects were asked to signal the box that best represented their behaviour. The 6-point Likert scale was chosen given its ability to eliminate neutral responses.

Procedure

All participants were instructed as to the purpose and procedures of the study before filling out an informed consent form. The questionnaires were self-administered and completion took approximately 15 minutes. Questionnaires were distributed at two separate moments, with the second set of data being collected two months after the first. A total of 300 questionnaires were distributed before training sessions during each of the above mentioned data gathering moments.

An initial analysis of the questionnaires determined that, regarding the first and second evaluating moments, a total of 263 and 254 questionnaires were deemed usable for statistical data analyses.

The PSRQ scale was translated to Portuguese and then back-translated into English in order to minimize discrepancies between the original and the translated versions (Banville, Desrosiers, & Genet-Volet, 2000). This process included having the PSRQ instrument being initially translated into Portuguese by a team that included two of the researchers involved in this research and an experienced Portuguese sport psychologist. Afterwards, to test the equivalence of the items, back-translation into English was carried out by two native Portuguese speakers also fluent in English. In order to verify the accuracy of the items, a bilingual expert was asked to assess differences in meaning between the original items and the back-translated items. The latter comparison established that the two instruments were conceptually equivalent.

Data analysis

Data analysis was performed by using SPSS 21.0 and AMOS 21.0 (SPSS Inc. Chicago IL). The Personal and Social Responsibility Questionnaire comprises a negatively worded item. Thus, before conducting the data analysis of item 14, its data were reversed using the SPSS 21.0 program, where all data was allocated to. To confirm the prior factor structure of the PSRQ reported by Li *et al*. (2008), a confirmatory factor analysis was performed. Afterwards, given that a confirmatory analysis could not verify the original structure, an exploratory factor analysis (EFA) was performed (principal components analysis with direct oblimin rotation) because there are theoretical grounds for supposing that the factors are correlated (Li *et al*., 2008). Lastly, a confirmatory factor analysis (CFA) was performed on the second sample in order

to examine and confirm the adapted PSRQ's global and local fit to the data.

Considering EFA, the following criteria were established to set the number of factors to be extracted: Parallel Analysis (O'Connor, 2000), eigenvalues greater than 1, scree plot analysis and minimum of three items (Gorsuch, 1997) and, to retain an item, a factor load equal to or greater than .50 within a single factor (Hair *et al*., 2009).

Complementarily to Parallel Analysis' strengths, other factor extraction procedures mentioned above were used for two important reasons. First, as noted by Buja and Eyuboglu (1992), Parallel Analysis can be subject to errors of overextraction, thereby identifying trivial components as primary factors. Thus, Parallel Analysis was used as a first step in identifying factors that are likely to exist beyond mere chance (O'Connor, 2000). This procedure was followed by subsequent procedures for the purposes of trimming negligible factors.

Considering the CFA, the internal consistency of the constructs was assessed through composite reliability (Hair *et al*., 2009). Average variance extracted (AVE) was used to evaluate convergent validity, while discriminant validity was established when AVE for each construct exceeded the squared correlations between that construct and the remaining ones (Fornell & Larcker, 1981). The appropriateness of the model was tested using a variety of indices. Specifically, the measurement model was assessed with the chi-square (χ^2) statistic, the ratio of χ^2 of its degrees of freedom, comparative-of-fit-index (CFI), goodness-of-fit index (GFI), parsimony comparative-of-fit-index (PCFI), parsimony goodness-of-fit index (PGFI) and root mean square error of approximation (RMSEA). The .05 level was assumed for statistical significance. In addition, a multi-group analysis was conducted in order to compare the first sample with a second, thus evaluating cross validity. The model's invariance in both samples was verified by comparing the unconstrained model with constrained models (factor loadings fixed and variances/co-variances fixed). According to the χ^2 statistic (Loehlin, 2003; Marôco, 2010) factorial invariance was accepted when the models did not differ significantly ($p > .05$).

Results

Confirmatory factor analysis of the original two structure of the PSRQ

The measurement model on sample 1 does not provide evidence of suitable results for the data of the PSRQ [χ^2 = 269.94, $p < .01$; χ^2/df=3,552; PCFI = .56; PGFI = .53; CFI = .86; GFI = .87; RMSEA = .09]. Both PCFI and PGFI were above the cutoff point of .60, while the CFI and GFI were lower than .90 (Hair *et al*., 2009). RMSEA value also failed to provide an acceptable fit to the data (Byrne, 2000).

As a result, the global fit of the measurement model to the data could not be confirmed, which prompted the performance of an exploratory factor analysis to examine further psychometric properties.

Exploratory factor analysis

The values of KMO statistics (.89) and Bartlett's test of sphericity ($\chi^2_{(78)}$=2722.99, $p < .001$) indicated that factor analysis was appropriate. Parallel Analysis for the scale revealed two factors meeting the component extraction criteria of raw eigenvalues exceeding the mean and 95th percentile eigenvalues of the random datasets (O'Connor, 2000). In fact, only two factors have raw eigenvalues substantially exceeding their random counterparts. This conclusion was confirmed by the eigenvalues greater than 1 and the scree plot analysis. Thus, a Oblimin rotation with Kaiser normalization was carried out, giving rise to a final structure of two factors with Eigenvalues greater than 1: personal responsibility (4 items) and social responsibility (4 items), which accounted for 53.45% of the variance. Factor 1 (items 1, 3, 4 and 5), representing personal responsibility, and Factor 2 (items 9, 10, 12 and 13) representing social responsibility are posted in Table 1.The factor solution should explain at least half of each original variable's variance, so the communality value for each variable should be 0.50 or higher. In our study, the communalities for the items with appropriate factor loadings (Hair *et al*., 2009) were greater than 0.50 (see Table 1). The results of the EFA showed the loadings of the items in Factor 1 – Personal responsibility [I respect my teacher(s); I control my temper; I am helpful to others] and in Factor 2 - Social responsibility [I try hard even if I do not like the activity; I participate in all of the activities; I do not make any goals] failed to reach the cutoff point (Gorsuch, 1997). Therefore, these items were excluded from further analysis. As such, the scale with four items per factor was then used for confirmatory factor analysis. In addition, the composite reliability for each factor was above the .70 criteria (Hair *et al*., 2009), supporting internal consistency. The correlation between the two factors was $r = .47$)

Confirmatory factor analysis

To verify the stability of the EFA factorial structure, a confirmatory factor analysis (CFA) was performed on the second sample, with the results being reported through Table 2. All estimated factor loadings exceed the cutoff point of .50 (Hair *et al*., 2009), ranging from .67 to .81 (see Table 3). Additionally, the *Z*-values ranged from 11.01 to 14.57, indicating significant factor loadings at $p < .001$ (Hatcher, 1994). This means that each item did load significantly on its construct. The composite reliability values exceeded the recommended minimum of .60 (Bagozzi & Kimmel, 1995), with a result of .81 for personal responsibility and .82 for social responsibility.

As shown in Table 3, convergent validity was accepted for both constructs, given that the AVE values of each construct were .52 and .54 respectively, and both above the recommended .50 (Fornell & Larcker, 1981). The square correlation between the two factors is also presented in Table 3, with evidence of discriminant validity having been accepted, since the square correlation exceeded the AVE value for each associated construct. In addition, the results obtained for the measurement

model demonstrated an acceptable fit to the data [χ^2 = 37.75, $p < .01$; χ^2/df = 1.99, PCFI = .66, PGFI = .61, CFI = .98, GFI = .97, RMSEA = .06]. Both PCFI and PGFI were above the cutoff point of .60, while the CFI and GFI were higher than .90 (Hair *et al*. 2009). In addition, the RMSEA value indicated an acceptable fit (Byrne, 2000).

Cross validity

A multi-group analysis was conducted with both the first sample ($n = 261$) as well as with the second sample as a validation sample ($n = 259$). As shown in Table 4, the fit of the unconstrained model [Model 1: $\chi^2(38) = 100.53$ ($p < .001$), PCFI = .65, PGFI = .60, GFI = .96, CFI = .96, RMSEA = .05]

was deemed acceptable, thus allowing for this model to be compared with this baseline configural-invariance model (Marsh, 1994). The models with constrained factor loadings [Model 2: $\chi^2(46)$ = 114.32 ($p < .087$), PCFI = .80, PGFI = .62, GFI = .95, CFI = .96, RMSEA = .05] and constrained variances/co-variances [Model 3: $\chi^2(47)$ = 116.43 ($p < .069$), PCFI = .80, PGFI = .62, GFI = .95, CFI = .96, RMSEA = .05] showed a satisfactory fit. The χ^2 statistic did not show significant differences when comparing both Models 1 and 2 (χ^2dif (8) = 13.79; p=.087) as well as Models 1 and 3 (χ^2dif (9) = 15.898; p =.069). Thus, the results demonstrated the invariance of the model in both samples, which indicated that the factorial structure of AEQ was stable within the two independent samples (Loehin, 2003) In turn, this is interpreted as being an indication of cross validity.

Table 1. Summary results for Exploratory Analysis of the PSRQ.

Item numbers	Factor 1 Personal responsibility	Factor 2 Social responsibility	Communalities
13. I give a good effort	.89		.73
9. I try hard	.87		.71
12. I want to improve	.79		.55
10. I set goals for myself	.73		.55
11. I try hard even if I do not like the activity	.48		.46
8. I participate in all of the activities	.43		.36
14. I do not make any goals	.17		.18
5. I am kind to others		.86	.62
1. I respect others		.79	.64
3. I help my team colleagues		.73	.59
4. I encourage my team colleagues		.69	.50
2. I respect my coach(s)		.48	.45
6. I control my temper		.45	.40
7. I am helpful to my colleagues		.40	.48
Eigenvalue	1.51	5.44	
Variance Explained	11.64	41.81	
Composite Reliability	.82	.78	

Note. Extraction Method: Principal Component Analysis; Rotation method: Oblimin with Kaiser Normalization.

Table 2. Factor loadings and composite reliability (CR) of the refined dimensions of the PSRQ.

Factor/items	λ	t	CR
PR			.81
1. I try hard (former item 9)	.77	13.35***	
2. I set goals for myself (former item 10)	.77	13.44***	
3. I want to improve (former item 12)	.68	11.34***	
4. I give a good effort (former item 13)	.67	11.27***	
SR			.82
5. I respect others (former item 1)	.81	14.57***	
6. I help my team colleagues (former item 3)	.67	11.34***	
7. I encourage my team colleagues (former item 4)	.65	11.01***	
8. I am kind to others (former item 5)	.80	14.40***	

Note. PR = personal responsibility; SR = social responsibility; λ = Standardized factor loading; *t* = statistic based on test for significance; CR = composite reliability.

*** $p < .001$

Table 3. Discriminant validity results for the constructs.

		Squared Correlation	
Constructs		1	2
	AVE	.52	.54
1. Personal responsibility	.52	1.00	
2. Social Responsibility	.54	.27	1.00

Note. AVE=Average variance extracted.

Table 4. Results of the multi-group analysis across the first and second application of the PSRQ.

Models	χ^2	df	$\Delta\chi^2$	Δdf	p	PCFI	PGFI	GFI	CFI	RMSEA
Model 1	100.53	38	—	—	—	.65	.60	.96	.96	.05
Model 2	114.32	46	13.79	8	.087	.79	.61	.95	.96	.05
Model 3	116.43	47	15.90	9	.069	.80	.62	.95	.96	.05

Note. First sample: $n = 263$; Second sample: $n = 254$.

Discussion

The main goal of the current study was to examine the psychometric properties of the PSRQ within the Portuguese sporting context.

The original configuration factor was verified, but the analysis could not support the original structure with 14 items. The traits of the participants may constitute the main key in explaining both the different results obtained as well as the difficulty in validating the original two-factor structure with 7 items each, as proposed by Li *et al*. (2008). As suggested within the literature (Jorgensen & Seedat, 2008), different samples or different sampling techniques can generate distinct results due to cultural differences, meaning that this different factorial structure might reflect dissimilarities. Given that this study was conducted in a different country, some differences may be related to the specific meaning attributed to personal and social issues within the Portuguese and American cultural contexts, with some variation of the results possibly deriving from this issue. The results of the CFA also showed a good fit to the data, which is consistent with previous research that used the PSRQ (Li *et al*., 2008). This signals the importance of Hellison and Martineck's (2006) theoretical model, with two constructs for understanding responsibility.

Furthermore, the invariance of the model in two independent samples was supported, thus indicating cross validity. This is a pivotal step when evaluating the psychometric properties of a scale (Marôco, 2010), and has already been reported in recent studies conducted within sport scenarios (Biscaia, Correia, Ross, Rosado & Mâroco, 2013; Vázquez, Llaguno, & Ruiz, 2013). Therefore, this study constitutes a step forward for the personal-social responsibility literature, since the study by Li *et al*. (2008) did not consider this validation procedure.

Moreover, findings from this study provide scholars and coaches with a tool to aid them in managing their athletes' responsibility. Thus, the adapted version of PSRQ may represent an important tool, both in evaluating programs intended to promote the positive development of personal and social responsibility, as well as in developing studies with a multidimensional framework that includes leading elements and consequences of responsibility among athletes. Doing so will also provide a framework for planning youth sports, so as to have it fostering the positive psychological development (Hellison & Wright, 2003) of its participants.

Conclusions

Personal and Social Responsibility programs are, usually, applied and evaluated within the physical education setting (Li *et al*., 2008). This means that the first contribution of this study is to extend the body of knowledge by confirming the validity of the PSRQ within a different setting.

Secondly, given that every new application within a different context represents a contribution towards the improvement of the theoretical value of the research domain (Barić & Horga, 2006), this study provides supporting evidence of the Portuguese version of the PSRQ. Additionally, with this study having been developed within the Portuguese sport setting, this tool fulfills the literature's demands for researchers to conduct added research on responsibility development by means of empirical studies.

Limitations and future research

As with any study, this research exhibits limitations. With the study having been developed within the Portuguese sport scenario, cross-cultural or cross-national validity is lacking. Future investigations should consider this evaluation, so as to verify and sustain PSRQ as a tool in measuring personal perceptions regarding personal and social responsibility development in different cultural contexts.

By being focused on measuring the dimensions of TPSR, future studies should look at research sport settings. Both antecedents and consequences that were not systematically examined ought to be considered, given that high levels of intrinsic motivation are believed to be central in improving

positive responsibility levels (Li *et al*., 2008). In addition, the relationship between responsibility, motivation, resilience, toughness, risk and protective factors related to sport settings (Escartí, Gutiérrez, Pascual & Llopis, 2010) must also be considered. Complementarily, Martins, Rosado, Ferreira, & Biscaia, (2014) refer that athletes engagement might be related with the development of the levels of personal and social responsibility within the sport. Thus, examining the relationship between atlelets responsibility levels and atlelets engagement levels may also represent an important topic for future studies.

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