

**169 - TRANSLATION AND THEORETICAL ANALYSIS OF EXERCISE DEPENDENCE SCALE**

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**INTRODUCTION**

The benefits of physical exercise (EF) are the focus of most investigations and generally relate to the promotion of physical health (COSTA & DUARTE, 2002; PRADO, MAMEDE, CLAPIS & ALMEIDA, 2004) and its (positive) influence on psychological dimensions, reducing indicators of stress, anxiety and depression (ARAUJO, MELLO & LEITE, 2007; CHEIK et al., 2003; STELLA, GOBBI, CORAZZA & COSTA, 2002). However, the excessive practice could trigger a compulsive behavior, making the individual dependent on it. Studies related to this issue are not in agreement on the designation and classification of the phenomenon, and to describe the problem the terms "addiction to run", "run obliged", "morbid exercise", "exercise compulsive", "intense physical activity", "exercise addiction", "bigorexia", and "exercise dependence" (Adams & KIRKBY, 1998, ASUNCION, ROPES & ARAÚJO, 2002; HAUSENBLAS & Downs, 2002a).

The conceptual vagueness difficults the study of the exercise dependence, prompting thoughts that the profusion of terms is mere tautology, or if you really dealing with distinct syndromes. This paper will adopt the term "exercise dependence", which refers to an uncontrollable and excessive physical activity, manifested by symptoms of physiological order (ex. tolerance, withdrawal) and psychological (ex. anxiety, depression) (HAUSENBLAS & Downs, 2002b). This terminology and definition have been chosen because they are shared by much of the research in the field (ADAMS & KIRKBY, 1998; ALLEGRE, SOUVILLE, THERME & GRIFFITHS, 2006; BAMBER, COCKERILL & CARROLL, 2000; ROSA, MELLO & SOUZA-FORMIGONI, 2003).

This phenomenon can be triggered (or maximized) by searching for an idealized standard of beauty that can refer individuals to dangerous diets for weight control, over-exercise and indiscriminate use of dietary supplements and vitamins. These behaviors can be considered precursors of an obsession, which can lead to distorted body image and generating mental disorders, physical, social and food, come to lead to the compulsive practice of physical exercises in bulk and without observing the necessary intervals for recovery the body (FERREIRA, BERGAMIN & GONZAGA, 2008).

Therefore, the dependence of the exercise is actually a proper term to portray an unhealthy preoccupation with exercise training (BAMBER et al., 2000). The importance of diagnosing it presents itself as a relevant factor for its prevention, assuming the continuation of exercise when it is contraindicated due to injury or disease (Santos, 2005). Thus, it appears that the consequences are serious, establishing its diagnosis is problematic, and few researches on the theme in Brazil contribute to a lack of professionals. Therefore, developing a work in this field is to raise a discussion on the implications for the health of individuals, and validation of an instrument on the subject can help professionals in their diagnosis.

In this context, after briefly discuss the dependence of physical exercise, this study aims at adapting a tool to assess this issue, from the theoretical analysis and translation of the items in Exercise Dependence Scale - Revised (EDS-R) (DOWNS, HAUSENBLAS & NIGGS, 2004). These procedures are part of a project to adapt and validate theoretically and empirically for the Brazilian context such scale, on the grounds provide a professional diagnostic tool for assessing the dependence of physical activity. For this work in particular, a number of issues related to dependence on EF (as causes, consequences and explanations) and brief description of the instrument to be validated. Following are described the procedures relating to translation and theoretical analysis of the items of the SDS-R, culminating in its release to the Brazilian context.

**EXERCISE DEPENDENCE**

Dependence on exercise is frequently reported in case studies, but until recently had not been empirically studied, according to Smith and Hale (2004), so that epidemiological information on it is still unknown. However, in the United States several scales on the subject have been developed (HAUSENBLAS & Downs, 2002a, 2002b; DOWNS, HAUSENBLAS & NIGG, 2004; ODGEN, VEAL & SUMMERS, 1997; TERRY, SZABO & GRIFFITHS, 2004) as well as the theme has been addressed in research, correlating the issues of gender, association with eating disorders, anxiety, distorted body image and personality characteristics (ACKARD, BREHM & STEFFEN, 2002; ASSUNÇÃO et al., 2002; HAUSENBLAS & DOWNS, 2002a, HURST, HALE, SMITH & COLLINS, 2000; MATHERS & WALKER, 1999; WEIK & HALE, 2009).

In Brazil, there are the studies of Antunes, Andersen, Tufik and Mello (2006) and Rosa et al. (2003) on exercise dependence, but only with marathoners and adventure racers in order to observe a gap in samples with other characteristics. Smith and Hale (2004) suggest that research with runners allowed an opening for a better understanding of the phenomenon, providing important information for relations with other variables and discussion of the motivational antecedents of exercise dependence, and promote the development and validation of instruments measure for assessing this phenomenon.

Combining this theme to the cultural variables, it is believed that the body dissatisfaction and the constant search for idealized standards of beauty may refer individuals to hazards to their health, such as the excessive practice of EF, culminating in a dependency. Assunção et al. (2002), for example, noted the excessive practice of EF in 30.8% and 46.9% among women with anorexia and bulimia nervosa, respectively. By the same token, for those who have bigorexia, and diet of hypertrophy, we highlight the use of nutritional ergogenic aids marked by ingestion of food supplements and vitamins (SANTOS, 2005).

As regards the causes of exercise addiction, Griffiths (1997) highlights three physiological explanations. The first, the thermogenic hypothesis suggests that exercise increases the body temperature (which reduces the tonic activity of the muscle), reducing somatic anxiety. The "catecholamine hypothesis" proposes that exercise releases the substance used heavily in the control of attention and responses to stress (dopamine, adrenaline and noradrenaline) and is associated with euphoria and good humor. The hypothesis of endorphins, in turn, suggests that addiction is a physiological than psychological. The exercise produces endogenous morphine, which leads to a reinforcement of the mood. Based on these explanations, we present a behavioral perspective: the compulsion by the exercises could be associated with positive reinforcement, which are pleasure and euphoria, and also the elimination of negative reinforcements, which is the relief of states of depression and anxiety.

The dependence of exercise can be considered a process in which a person feels compelled to exercise in order to show physical and psychological symptoms when exercise is withdrawn (SMITH & HALE, 2004). We highlight also the exercise,

even when presented the sick, injured or any other medical contraindications, the negative interference in relationships with their partners, family, friends or at work and association with diets to lose weight gain or weight (AYENSA, MARTÍNEZ & RANCEL, 2005). In an opposite direction, Antunes et al. (2006), based on the findings of their studies suggest that, despite of exercise dependence, apparently this was not able to promote significant changes in mood and quality of life of the runners. These data suggest that their athletes have exercise dependence is not associated with mood disorders.

So, it was selected to adapt the Exercise Dependence Scale-Revised (EDS-R), drawn by Downs, Hausenblas and Niggs (2004) and developed based on the criteria for substance dependence in DSM-IV. This is proposed to divide the subjects into three groups: (1) those who are at risk of dependence on exercise, (2) those who are not dependent, but have symptoms associated with exercise addiction, and (3) those who are not dependent and do not show symptoms of dependence.

The items of this instrument are arranged according to seven factors: (1) "tolerance", which refers to the need that the individual has to increase its load of exercises or their feeling that they are not doing more effect if it continue with the same charge earlier, (2) "withdrawal" in which the individual exercises to prevent irritability, anxiety, (3) "intentionality," that refers to an exercise more than planned; (4) "lack of control," defined from a subject's inability to reduce its financial burden, (5) "time", represented by large time spent on exercise, (6) "reduction of other activities," which refers the reduction of social, occupational or leisure to work out, and (7) "continuity", represented by a continuation of the exercises, even when they contraindicated. These factors are arranged in 21 items, whose procedures for adaptation are described in the next section.

### TRANSLATION AND THEORETICAL ANALYSIS OF THE ITEMS

In the field of psychological assessment, the lack of formal instruments and objectives, and suggest theoretical gaps by empirical data, it also reflects on the diagnosis, the definition of therapeutic procedures and the preparation of contingency plans. Therefore, developing a work of this nature, specifically in this area of exercise dependence, is to raise a discussion on the implications for the health of individuals, can the validation of the professional help in diagnosis.

The adaptation of psychological documents of other cultures is recurrent in the Brazilian context and allows for cross-linguistic studies, which can bring knowledge and understanding of phenomena. The first step in the adaptation of the instrument is its translation, it is not a task as simplified as it may appear. According to the International Guidelines for Adaptation/ Translation of tests proposed by the International Test Commission (2000), the quality of the translation of an instrument is essential to ensure that the results obtained in a survey conducted in different cultures are not compromised by inadequate language. The procedures adopted in this process must be detailed and careful, since the translation and adaptation are as important as the construction of a new instrument.

Regarding the translation, it is a complex activity because, when translating an instrument, one must seek different types of equivalence to the original, such as cultural, semantic, technology, the content, the criterion and conceptual (GIUSTI & BEFI-LOPES, 2008). Nascimento and Figueiredo (2002) reported that the use of a foreign instrument without adequate adaptation may jeopardize the validity and accuracy of tests conducted. On the other hand, stressed that although the guidelines recommended by the International Test related to the adaptation process are vital sources for the research development of adaptation encountered in their research with the paucity of references on the practices and procedures analysis involved in the construction and adaptation of psychological instruments.

And lack of main references for these procedures may affect the selection of the most appropriate research objectives, choosing professionals often the best known (to the detriment of the fit). To illustrate, he cites the method of "translation and back translation" (translation and back translation), which is commonly cited in the literature (GIUSTI & BEFI-LOPES, 2008). However, criticism of this procedure are very relevant as to their suitability for cross-cultural adaptations. These suggest that the technique is directed primarily at the literal meaning of the sentence translated, neglecting the specificities of the context that this will be applied. Come on, therefore, a technical translation and distance from the scope of adaptation.

In the adaptation of an instrument, the objectives are broader, aiming at a translation-oriented words and phrases with semantic equivalence (and not just literally), so that cultural differences do not affect the understanding of the instrument and change the original objectives. For this reason, as the search macro that this study is part aims at cultural adaptation of the EDS-R, it was not deemed suitable to back translation technique, so that the selected techniques tried to fill in gaps.

For the translation of the EDS-R, this was done by four volunteers, a doctoral student in dentistry, and a master's degree in Physical Therapy, a degree in International Relations and a degree in Computer Science. All these were proficient in English, having studied it for five to eight years. These were selected according to criteria: (a) knowledge and fluency in the English language (language of the original), (b) participation in another field other than psychology, and (c) lack of knowledge of original scale. These last two criteria were justified by the need for other professionals do not provide translations "biased" by immersion in the subject. For this reason, could not be performed by the researchers of this study.

In the translation of 21 sentences of the instrument, the translator answered some questions around the process of translation, as reported some difficulty in finding expressions with equivalent meaning. One of the translators assigned difficulty in the term "injured" (ex. I exercise when injured), which refers to the corresponding "injury" and "offense". Two other judges in identifying problems identified related to "longer" (ex. I exercise longer than I intend), which might be circumvented, second the same, with minor changes in sentencizing the Brazilian context.

With the translated by volunteers, it was set up a spreadsheet for the second stage of adaptation. This, known theoretical analysis of the items consisted primarily to assess the understanding of sentences translated into Portuguese and Brazilian context.

To this end, two committees were set up: the first was composed of three members: one was a researcher of this project, while the other two volunteers were a graduate in medicine and a master's degree in civil engineering, both having already undergone proficiency exams in English. The choice of professionals from other courses had the same goals mentioned above. As this committee submitted a spreadsheet containing all translations (as well as in the original language version) and requested that they choose to release more understandable to the Portuguese and the Brazilian (respecting the proximity to the semantics of the original). That is, was continued to the evaluation of the semantic equivalence (AES). AES is a procedure composed of translations, discussions with experts and target population and pilot study on the version obtained, involving the ability to transfer meaning of the concepts contained in the original version to give an effect similar to respondents in both cultures (REICHENHEIM & MORAES, 2007).

It was also requested that they write a new version if they found other appropriate translations. Accordingly, the items listed by the committee by a vote (as well as the inclusion of a new term) were selected for submission to the analysis of a second committee, whose choices this step does not give it a vote, but consensus, in order to culminate in the preliminary version of the instrument. Translations are not selected were excluded. In this first committee also five items were unanimous vote of the judges, already composing a draft of this instrument, as well as an increase was made.

For the second committee, also composed of three members, also attended one of the researchers of this project and a degree in physical therapy and one in Business Administration. At present the analysis, the two volunteers on the committee who had no proficiency in English did not have access to the original instrument, whereas now it aimed to only pick the item better understanding for our context. After the consensus choice of some items and other adjustments (for example, of "I do work out despite recurring physical problems" to "I do work out in spite of physical problems the applicants"), culminated in a draft of this instrument. With this there will be a pilot study for the construction of the final version.

Finally, we emphasize that the translation of a psychological tool and theoretical analysis of its items did not actualize the process of adaptation and validation of the instrument to a new context. Therefore, the next steps of this research are the empirical analysis of the data and its psychometric properties, and the establishment of standards for collecting and interpreting data.

### CONCLUSIONS

Thus, we can conclude that exercise dependence is constituted as a problem for the health of individuals, which has implications for order physiological, psychological and social. Whereas problem also establishing its diagnosis, since there is a lack of epidemiological information on the subject, we chose to adapt to the Brazilian context a scale for evaluation, from the theoretical analysis and translation of the items of the EDS-R. These procedures that make the adaptation of psychological tests showed a complexity in implementation, requiring critical researchers to assess the adequacy of existing technologies to the goals of the original.

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#### **TRANSLATION AND THEORETICAL ANALYSIS OF EXERCISE DEPENDENCE SCALE**

##### **ABSTRACT:**

Although provides physical and psychological benefits, an excessive practice of physical activity could trigger a compulsive behavior, getting the individual dependent of it. Its consequences are severe, its diagnosis is problematic and the few research related to the theme in Brazil contribute to a lack of professionals. Accordingly, this research aims to adapt an instrument to assess this issue, from the translation and theoretical analysis of items of Exercise Dependence Scale - Revised. Therefore, discusses the procedures adopted for the translation and analysis of the items, aiming a semantic matching of these with the original version, this after making a description of exercise dependence.

**KEYWORDS:** dependence, translation, cross-cultural studies.

#### **TRADUCTION ET ANALYSE THÉORIQUE DE LA DÉPENDANCE ÉCHELLE DE L'EXERCICE**

##### **RÉSUMÉ:**

Bien que procure des avantages physiques et psychologiques, la pratique excessive de l'activité physique pourrait être un élément déclencheur ou un comportement compulsif, ce qui rend la personne à charge individuelle. Ses conséquences sont graves, d'établir son diagnostic est difficile et les quelques recherches sur le thème du Brésil de contribuer à un manque de professionnels. En conséquence, la présente étude vise à adapter un instrument pour évaluer cette question, à partir de l'analyse théorique et la traduction des articles de Exercise Dependence Scale – Revised. Par conséquent, discute les procédures adoptées pour la traduction et l'analyse des éléments, à la recherche d'un match avec la sémantique de la version originale, ce après avoir fait une description de la dépendance de l'exercice.

**MOTS-CLÉS:** dépendance, traduction, études linguistiques.

#### **TRADUCCIÓN Y ANÁLISIS TEÓRICO DE LA DEPENDENCIA DE ESCALA DE EJERCICIO**

##### **RESUMEN:**

Aunque trae beneficios físicos y psicológicos, la práctica excesiva de la actividad física podría ser una causa o comportamiento compulsivo, haciendo que la persona dependiente. Sus consecuencias son graves, se establece su diagnóstico es problemática y las pocas investigaciones sobre el tema en Brasil, contribuyen a la falta de profesionales. En consecuencia, el presente estudio tiene por objeto adaptar un instrumento para evaluar este tema, desde el análisis teórico y la traducción de los elementos de la Exercise Dependence Scale – Revised. Por lo tanto, se examinan los procedimientos adoptados para la traducción y el análisis de los temas, buscando una coincidencia con la semántica de la versión original, después de hacer una descripción de la dependencia del ejercicio.

**PALABRAS CLAVE:** dependencia, traducción, estudios lingüísticos.

#### **TRADUÇÃO E ANÁLISE TEÓRICA DA ESCALA DE DEPENDÊNCIA DE EXERCÍCIO FÍSICO**

##### **RESUMO:**

Embora traga benefícios físicos e psicológicos, a prática excessiva de atividade física poderia ser ou desencadear um comportamento compulsivo, tornando o indivíduo dependente desta. Suas conseqüências são graves, a elaboração do seu diagnóstico é problemática e as poucas pesquisas relacionadas ao tema no Brasil contribuem para um desconhecimento dos profissionais. Nesta perspectiva, o presente trabalho visa adaptar um instrumento para avaliar esse tema, a partir da tradução e análise teórica dos itens da Exercise Dependence Scale – Revised. Para tanto, discorre sobre os procedimentos adotados para a tradução e análise dos itens, visando uma correspondência semântica destes com a versão original, isto após fazer uma descrição da dependência de exercício físico.

**PALAVRAS-CHAVE:** dependência, tradução, estudos transculturais.

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