

Expert Validation of Developed Questionnaire on Nutritional Knowledge and Supplement Habits among Disabled Athletes in Malaysia

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ABSTRACT

Disability sport is becoming more popular worldwide which depicted in the increase participation from athletes. The increase participation exerted pressure to the athletes to achieve better sports performance. One of the factors in enhancing sports performances is nutrition. Proper diet is needed for athletes, as it is an essential component in optimizing the athletes' physical development and sports performance. Identifying the nutritional knowledge and supplement habits among disabled athletes help to maximize the benefits of nutrition. Despite the importance of nutrition, there is no validated questionnaire in identifying the nutritional knowledge and supplement habits for disabled athletes in Malaysia. Thus, this study aims to develop and validate a questionnaire on nutritional knowledge and supplement habits among Malaysian disabled athletes, and to examine the reliability of the questionnaire. This paper intends to discuss the validation of the developed questionnaire specifically on expert validation. The target population of this study is Malaysian disabled athletes. Firstly, the questionnaire is developed and adapted from previous literature on both nutritional knowledge and supplement habits for disabled athletes. Then, the developed questionnaire undergoes translation process before proceeding with validation and reliability process. Expert validation required a panel of experts in sports nutrition, nutrition and dietitian fields and will be analyzed using the critical value of content validity ratio. The expected results of this study as a validated questionnaire on nutritional knowledge and supplement habits among Malaysian disabled athletes by the expert panel. In future research, the reliability of the questionnaire will be tested on 23 Malaysian disabled athletes, and their nutritional status will be identified. Hence, this study helps to promote the growth of disability sports in Malaysia and enhance the sports performance of disabled athletes in Malaysia through nutrition.

Keywords: *Malaysian disabled athletes, nutritional knowledge, questionnaire, supplement habits*

Introduction

Disability sports has been widely recognized and becoming infamous world widely over years. Participation in disability sports tournament such as Paralympic Games from athletes all around the world has been shown to be increasing in number according to International Paralympics Committee. For an instance, the number of participants in Rio Paralympic Games 2016 is higher than in Beijing Paralympics Games 2008, which is 4328 to 4011 according to International Paralympic Committee. In order to gain success, the athletes must give their best performance (Kiertscher & DiMarco, 2013). In elite sports, as a slight difference in second, a last dash or a conclusive play would differentiate the winner and the losing team, the crucial aspect of better sports performance is nutrition (Innocencio da

Silva Gomes, Ribeiro, & de Abreu Soares, 2006). Through sufficient and personalize-adapted nutrition intake, the athletes' performance can be boosted (Sousa, Fernandes, Moreira, & Teixeira, 2013). Not only that, the high energy loss and nutritional requirements can be compensated by the athlete's body if only they consume sufficient nutrition, which assist in all-out adaptation to physical loads (Baranauskas et al., 2015). Variations of health problems in disabled athletes can be prevented through a key element, which is adequate nutrition as they are slightly more susceptible towards exhaustion, pressure and reduced performance compared with able-bodied athletes (Rastmanesh, Taleban, Kimiagar, Mehrabi, & Salehi, 2007). To compensate for any insufficient nutrition, nutritional supplements are taken. The intake of nutritional supplement is widely used throughout the world. Dietary supplements are used by athletes to enhance energy, stabilize strength, improve performance, reduce nutritional insufficiencies and maintenance of health and immune system (Heikkinen, Alaranta, Helenius, & Vasankari, 2011). In disabled athletes, 58% of them took supplement for at least one within the last six month (Graham-Paulson, Perret, Smith, Crosland, & Goosey-Tolfrey, 2015). In Athens Paralympic 2004, more than half of the athletes that under doping-control claimed that they consume medication supplement or food supplement, with a percentage of 64.2% (Tsitsimpikou, Jamurtas, Fitch, Papalexis, & Tsarouhas, 2009).

With the common intake of supplement habits and importance in having fundamental nutritional knowledge, the athletes' level of nutritional knowledge and supplement habits need to be identified. Furthermore, by identifying the nutritional knowledge and supplement habits of the disabled athletes, it helps to maximize the nutrition's benefit in sports performance. Higher nutritional knowledge could lead to superior dietary intake as most of the nutrition-education programs are based on this concept (Heaney, O'Connor, Michael, Gifford, & Naughton, 2011). This concept has been proven by a study from Wardle, Parmenter & Waller (2000) in which the relationship between nutritional knowledge and high intake of vegetables and fruits and decrease intake of fat among their participants, a large community in United Kingdom has been shown (Heaney et al., 2011). The relationship between the nutritional knowledge and nutritional intake is complex and involve in variations of contributing factors such as taste, preference and culture in foods, faiths and family conviction (Heaney et al., 2011). Stronger relationships between nutrition knowledge and nutritional intake can be recognized if the instrument use is able to exactly measure the knowledge of nutrition and more accurately evaluates the dietary intake regardless of the complex relationship between nutritional knowledge and dietary intake (Heaney et al., 2011). Currently in Malaysia, there is no existent of validated and reliable questionnaire focusing on both nutritional knowledge and supplement habits among disabled athletes. Thus, this study aims to develop a validated and reliable questionnaire on knowledge in nutrition and supplement habits among Malaysian disabled athletes. This paper intent to present the results obtained upon validating the developed questionnaires on nutritional knowledge and supplement habits among disabled athletes through expert validation.

Methodology

This study is a cross-sectional study using quantitative method. This study involve four stages, which are literature search and questionnaire items developing, translation process, validation questionnaire process and testing the reliability of the questionnaire. The validation of the questionnaire involved content validation while in determining the reliability of the questionnaire, test-retest questionnaire and internal correlation reliability will be conducted and analyzed using Cronbach Alpha and Pearson Correlation method. This paper would be focusing on validation process of the questionnaire, which is expert validation through content validity. The operational meaning of content validity is the degree to which commonality or overlap occurs between (a) performance on the test under inquiry and (b) capacity to function in the distinct job performance area (Lawshe, 1975). In content validation, seven experts in sports nutrition, nutrition and dietetics area including a nutritionist have participated. The panel of experts has rated, commented and reviewed the developed questionnaire that has been translated into Malay from English. Each of the questionnaire items are rated according to essential,

not essential and not necessary. The data obtained by the seven experts was analyzed using content validity ratio based on Lawshe formula. After analyzed, any of the questionnaire items having negative values especially -1.00 as a score will be disregarded from the questionnaire. The comments and reviewed form the panel of experts would also take into account to improve the questionnaire. After finishing the expert validation process, a pilot study would be done to examine the reliability of the questionnaire with 23 participants from Malaysian disabled athletes.

Results and Discussion

The total questionnaire items in this questionnaire is forty-seven excluding the sub-questionnaire items. With inclusion of sub-questionnaire items, the total number of questionnaire items is one hundred and nineteen. The content validity ratio (CVR) value for overall questionnaire items is 0.909, which is acceptable. However, it does not achieve the minimum value for CVR according to Lawshe's formula. For seven experts involve in CVR, the minimum value for CVR based on Lawshe's formula is 0.99 (Ayre & Scally, 2014). This is because out of forty-seven questionnaire items, three of the questionnaire items do not achieve positive values, but instead received 0 and -0.333 as their CVR value. Although only three does not achieve the positive values, it contribute to the overall score of CVR for the questionnaire especially when 83.9% of the questionnaire items received +1.00 as their critical value. This questionnaire have four domains, which are demographic data, nutritional knowledge, supplement knowledge and awareness, and supplement habits. Each of the domains' CVR value are shown in Table 1.0 below.

	DOMAIN	CVR
1	Demographic data	+0.569
2	Nutritional knowledge	+0.973
3	Supplement knowledge and awareness	+0.984
4	Supplement habits	+0.926

Table 1- CVR value for each of the four domains in questionnaire

The highest CVR value for domains is +0.984, which is supplement knowledge and awareness. This is because 95.2% of the questionnaire items in this domain received full score in CVR value, which is +1.00. From the experts' review, this domain has the less critics from the experts in terms of structure and relevancy. The lowest CVR value for domains is +0.569, which is demographic data. One of the reason demographic data domains has the lowest CVR value among domains is because it has the lowest number of questionnaire items that received +1.00 as their CVR score as compared to other domains, which is only four questionnaire items, with a total percentage of 23.5%. Another reason for the low score of CVR in this domain is the structure and the relevance of the questionnaire items in this domain. Three experts comment that three of the questionnaire items in this domain should be put into second domain, which is nutritional knowledge as these questionnaire items, are more related to nutritional knowledge. One expert review that one of the questionnaire items, which is an open-ended question, should be in multiple-choice types of question to ease the participants in answering the question thus increase the accuracy of the data collected.

Overall, the experts review that this questionnaire is suitable and acceptable to be used to identifying the nutritional knowledge and supplement habits among disabled athletes in Malaysia. The most notable critics among the experts in this questionnaire are that some technical or scientific terms in Malays do not represent the meaning of the terms in English. However, it only applies to some of the questionnaire items in this questionnaire. Aside from critics on the questionnaire, the experts also give constructive review or comment in which some of the experts give suggestions to add more questionnaire items especially in nutritional knowledge domain so that the data obtains more accurate and comprehensive.

Conclusion

Nutrition plays important roles in enhancing the sports performance among athletes including disabled athletes. In maximizing the advantages of nutrition in sports, the athletes need to have the fundamental nutritional knowledge and have a better understanding in taking a supplement. Thus, it is important to have a valid and reliable instrument, including a questionnaire that able to identify the level of nutritional knowledge and supplement habits among the disabled athletes in Malaysia to ensure that the data obtained is comprehensive and accurate. Based on this research, the developed questionnaire specifically for Malaysian disabled athletes undergoes expert validation and the result obtains shows that the developed questionnaire is valid.

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