EXAMINING HOW WHEELCHAIR BASKETBALL PLAYERS' SELF-ESTEEM AND MOTIVATION LEVELS IMPACT ON THEIR STATE AND TRAIT ANXIETY LEVELS

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ABSTRACT: The purpose of the study was to examine how wheelchair basketball players' self-esteem and motivation levels impact on their state and trait anxiety levels. The Coopersmith Self-Esteem Inventory, Sport Motivation Scale and STAI (State Trait Anxiety Inventory) were applied to the athletes before a competition. Data were collected from 124 athletes with disabilities. In this study, descriptive statistical techniques, Pearson product moment correlation and multiple regression analysis (enter method) were used. Multiple regression analyses indicated that self-esteem, intrinsic motivation, extrinsic motivation and amotivation, all of which function as predicting variables, predicted 42% variance in state anxiety and 50% variance in trait anxiety. Motivation and self-esteem are the best predictors of trait and state anxiety among the premier league wheelchair basketball players. Finally, a review of factors that impact on anxiety and quality of performance such as motivation and self-esteem is provided.

KEY WORDS: motivation, self-esteem, wheelchair athletics, sport and exercise psychology

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INTRODUCTION

Six hundred million (10%) of the world's population is made up of people having physical disabilities different types and levels. This proportion is also similar in our country. Approximately 10-12% of our country's population consists of persons with disabilities. The percentage of persons with a physical disability is around 1% (700 000) [17]. Deriving benefit from sports is one of the most important ways for persons with disabilities to participate in the daily life of society.

Physical activity has many physical, social and physiological benefits, such as reducing depression, anxiety, cancer, osteoporosis, diabetes, and cardiovascular illnesses. [4,36]. Furthermore, sports have an important role in increasing a person's self-esteem and removing physical, social and ethnic pressure. Sports help persons with disabilities to be a part of society, to have a connection with the world again and to get rid of the feeling of being incompetent [16,25,28,37]. All the spiritual and material benefits of sports are also important for persons with disabilities. Rewards, medallions, compliments and championships both motivate the athletes and help to attract new athletes [2]. Contemporary sports researchers show that the field of sports physiology is not sufficient for the works uniquely needed by the athletes who have disabilities [1,5,7].

When the sports literature is examined, it becomes clear that anxiety is one of the major variables having negative effects on athletes. Anxiety is a state of uneasiness, accompanied by dysphasia and somatic signs and symptoms of tension, with concentration on possible failure, misfortune or danger [6]. State anxiety refers to relatively temporary states of unpleasant feelings of tension and apprehension accompanied by arousal of the autonomic nervous system [38]. Pre-competition anxiety is the feeling of anxiety symptoms due to competition and is a widely prevalent condition that exists among athletes of all levels and within every sport.

The force directing an individual's behaviour is motivation. Motivation is the reason for actions. It is the causality and explanation of behaviour [21]. It is thought that every individual engages in a sporting activity for some reason. It is predicted that a person is internally motivated if he or she engages in an action without any force from outside [20,40]. Unlike internal motivation, if a person acts without his or her own will or for an external reason such as gaining rewards, and his behaviours are directed by external arrangements, it means he is externally motivated. The third type is amotivation. An amotivated person cannot perceive the connection between his behaviours and the results of them. These people have a feeling of incompetency and lack of control [30].

Dorothee, Martin and Sabine [9] found that task orientation in physical activity is related to the motives of increasing skills and competence, competitiveness and building a positive attitude. This pattern is also observable in Paralympics athletes. They have a strong competitive, psychological and physical desire to achieve excellence in individual or group sports. Sport and physical activities are therapy for athletes with disabilities. Usually, individuals with disabilities have low self-esteem. Therefore, they prefer to keep to themselves than participating in group activities. Physical disability is deemed as a lot of burden which lowers the quality of life of individuals living with disability and their families. This may later lead to worries and rejection [28]. In addition the study by Omar-Fauzee et al. looked at Paralympics athletes' reasons for participation and found enjoyment, support, fitness, award, travel and stress relief [26].

Self-esteem refers to how much value people place on themselves. High self-esteem means positive evaluation of the self and low selfesteem refers to an unfavourable opinion of the self. Self-esteem is indispensible for high quality of life and is related to life satisfaction [19].

The main psychological elements shaping the identity of athletes are self-esteem, anxiety and motivation. Knowing these variables at the beginning has an important role in having a good performance, and it avoids overtraining and burnout. The aim of this study is to determine how much anxiety, self-esteem and motivation levels of wheelchair basketball players affect their state of anxiety.

For this aim, answers to the following questions were sought:

- 1. Is there a statistically significant relation between trait anxiety, state anxiety and self-esteem?
- 2. Does the self-esteem and motivation level of the wheelchair basketball players predict state anxiety?
- 3. Does the self-esteem and motivation level of the wheelchair basketball players predict trait anxiety?

MATERIALS AND METHODS

Participants. This study was performed to determine the interaction between the wheelchair basketball players' motivation, trait anxiety, state anxiety and their scores of self-esteem. In accordance with this purpose, 124 athletes with physical disabilities between the ages of 17 and 45 (x: 28.83±5.51 years) participated in the research voluntarily. The researcher received informed consent from the participants.

Procedure

Athletes completed the questionnaires in the dressing room before the match. Athletes, who received standardized verbal instructions, were assisted by the researcher. Athletes did not write their names on the questionnaires. They were encouraged to answer honestly and were assured that their responses were confidential. In addition, if for any reason they were unable to finish the inventory they were informed that they could take a short break and continue when they felt ready or, if necessary, they could cease completion of the measures at that point. Care was taken to ensure that athletes understood the constructs being assessed. The participants were advised to ask for help if they were confused about either the instructions or the clarity of a particular item. Participation was voluntary, and relevant permissions were obtained from the athletes, trainer, and club manager. The study was approved by the Ethics Committee of the University.

Instruments

STAI (State Trait Anxiety Inventory)

The state-trait anxiety inventory consists of two sections; "State anxiety scale (STAI-form 1)" which measures how an individual feels at that particular moment in time and "Trait anxiety scale (STAI-form 2)" which measures how an individual generally feels independent from the conditions. Each section consists of twenty items. It is a scale which the individual can fill up all by him/her self. It is simple and short, can easily be understood and can be completed within ten minutes. The answers to the items are in the form of the 4-Likert scales (For the state anxiety inventory: 1=Never, 2=A Little, 3=Much, 4=Entirely; for the trait anxiety inventory: 1=Almost Never, 2=Sometimes, 3=Often, 4=Almost Always). There are expressions that have been directly and oppositely translated. The directly expressed items are scored according to the numbers by the side; meanwhile those oppositely translated are inversely scored. The state anxiety is found with the total of the score of the first scale, whereas the trait anxiety is found with the total of the score of the second scale [27].

Coopersmith Self-esteem Inventory

The Coopersmith Self-Esteem Inventory was developed by Stanley Coopersmith (1975). It evaluates the attitudes of answerers towards themselves in different areas. The reliability coefficient was found to be 0.76 (p<0.05). For evaluation of the validity of the scale the relationship between the Coopersmith Self-Esteem Inventory and Rosenberg Self-Esteem Inventory was assessed and the correlation was found to be 0.61 (p<0.05). The adult version of the scale was used. The scale, which is made up of 25 items, was scored between 0 and 1 [35].

Sport Motivation Scale

The Sport Motivation Scale, which has 7 subscales, originally contained 28 items with a 7-point assessment system. The scale was administered to 285 athletes – 110 female (38.6%) and 175 male (61.4%) – with a mean of age 20.70 years, from different sport branches. Principle component factor analysis with varimax rotation was used for testing the construct validity of the scale. The original scale had 7 subscales, but the results of principle component factor analysis indicated that items of the scale were collected under 6 subscales and the percentage variance explained by the 6 factors was 60%. In examining item-total test correlations, positive and high correlations were found. The internal consistency of the scale was computed with the Cronbach alpha. The Cronbach alpha coefficients were 0.88 for intrinsic motivation to know-accomplishment, 0.73 for intrinsic motivation to experience stimulation, 0.82 for introjections, 0.72 for identification, 0.74 for external regulation and 0.70 for amotivation subscales. The test-retest reliability coefficient of the total scale based on a 4-week interval was 0.76. The results of this study showed that the Sport Motivation Scale can be used to determine Turkish athletes' intrinsic and extrinsic motivation and amotivation levels [15].

Data analyses

In this study, descriptive statistics included calculations of central and dispersion parameters: arithmetic mean, standard deviation, standard error. The Pearson product-moment correlation was also used to determine the relation between selected variables, and multiple regres-

TABLE I. PRE-COMPETITION STATE ANXIETY, TRAIT ANXIETY, MOTIVATION AND SELF-ESTEEM POINTS MINIMUM, MAXIMUM, AVERAGE AND STANDARD DEVIATION [N=124]

| Age | 28.83 ± 5.51 |
|----------------------------|---------------|
| Trait anxiety | 52.24 ± 10.57 |
| State anxiety | 38.37 ± 9.86 |
| Self-esteem | 63.16 ± 18.88 |
| Intrinsic motivation | 5.18 ± 1.03 |
| Extrinsic motivation | 4.92 ± 1.12 |
| Amotivation | 3.76 ± 1.7 |
| Note: values are mean + SD | |

e: values are mean ± SD.

sion analysis (enter) was applied for the determination of the impacts of all variables on anxiety. The data were analysed using the SPSS statistical program. Statistical significance was set at $p \le 0.05$.

RESULTS

Pearson's correlation test revealed that there was a significant positive correlation between age and self-esteem (r: 0.210, p < 0.05), state anxiety and trait anxiety (r: 0.716, p<0.05), trait anxiety and intrinsic motivation (r: 0.203, p<0.05), trait anxiety and extrinsic motivation (r: 0.373, p<0.05), trait anxiety and amotivation (r: 0.562, p<0.05), state anxiety and intrinsic motivation (r: 0.230, p < 0.05), state anxiety and extrinsic motivation (r: 0.369, p < 0.05), state anxiety and amotivation (r: 0.607, p<0.05), extrinsic motivation and intrinsic motivation (r: 0.712, p<0.05), and extrinsic motivation and amotivation (r: 0.339, p<0.05). A negative correlation was observed between trait anxiety and self-esteem (r: -0.651, p<0.05), state anxiety and self-esteem (r: -0.508, p<0.05), selfesteem and extrinsic motivation (r: -0.306, p<0.05), and self-esteem and amotivation (r: -0.470, p<0.05).

In order to determine the levels of relational regression analysis, wheelchair basketball players' self-esteem, intrinsic motivation, extrinsic motivation, state anxiety, trait anxiety and amotivation were conducted. The results of the analysis are given in Table 3 and Table 4.

As shown in Table 3 the result R2 = 0.42 well the 42% variance in the predicted variable state anxiety which is due to the levels of self-esteem, intrinsic motivation, extrinsic motivation and amotivation, all of which function as predicting variables (F = 23,474, p < 0.01). As shown in Table 4 the result R2 = 0.50 well the 50% variance in the predicted variable trait anxiety which is due to the levels of selfesteem, intrinsic motivation, extrinsic motivation and amotivation, all of which function as predicting variables (F = 23,474, p < 0.01).

TABLE 2. PRE-COMPETITION RELATIONSHIP BETWEEN STATE ANXIETY, TRAIT ANXIETY, MOTIVATION AND SELF-ESTEEM SCORES

| | | Age | Trait anxiety | State anxiety | Self-esteem | Intrinsic motivation | Extrinsic motivation |
|----------------------|---|--------|---------------|---------------|-------------|-------------------------|----------------------|
| Age | r | 1.000 | | | | | |
| | р | | | | | | |
| Trait Anxiety | r | -0.050 | 1.000 | | | | |
| | р | 0.581 | | | | | |
| State Anxiety | r | -0.048 | 0.716 | 1.000 | | | |
| | р | 0.600 | < 0.001 | | | | |
| Self-esteem | r | 0.210 | -0.651 | -0.508 | 1.000 | | |
| | р | 0.019 | < 0.001 | < 0.001 | | | |
| Intrinsic Motivation | r | 0.019 | 0.203 | 0.230 | -0.064 | 1.000 | |
| | р | 0.830 | 0.024 | 0.010 | 0.482 | | |
| Extrinsic Motivation | r | -0.039 | 0.373 | 0.369 | -0.306 | 0.712 | 1.000 |
| | р | 0.669 | < 0.001 | < 0.001 | 0.001 | < 0.001 | |
| Amotivation | r | -0.063 | 0.562 | 0.607 | -0.567 | 0.076 | 0.339 |
| | р | 0.490 | < 0.001 | < 0.001 | < 0.001 | 0.404 | < 0.001 |

TABLE 3. REGRESSION ANALYSIS RESULTS ON STATE ANXIETY

| Variables | В | Std. error | Standardized Coefficients Beta (β) | t | р |
|------------------------------|--------|------------|------------------------------------|--------|---------|
| Constant | 26.907 | 5.432 | | 4.953 | < 0.001 |
| Self-esteem | -0.121 | 0.044 | -0.232 | -2.733 | 0.007 |
| Intrinsic Motivation | 1.511 | 0.973 | 0.158 | 1.552 | 0.123 |
| Extrinsic Motivation | 0.286 | 0.958 | 0.032 | 0.298 | 0.66 |
| Amotivation | 2.625 | 0.499 | 0.453 | 5.256 | < 0.001 |
| R= .441 R ² = .42 | | | | | |
| F= 23.474 p< 0.01 | | | | | |

Note: Dependent variable: state anxiety

TABLE 4. REGRESSION ANALYSIS RESULTS ON TRAIT ANXIETY

| Variables | В | Std. error | Standardized Coefficients Beta (β) | t | р |
|--------------------------------|--------|------------|------------------------------------|--------|---------|
| Constant | 54.271 | 5.499 | | 9.87 | < 0.001 |
| Self-esteem | -0.266 | 0.045 | -0.475 | -5.947 | < 0.001 |
| Intrinsic Motivation | 1.116 | 0.985 | 0.109 | 1.133 | 0.26 |
| Extrinsic Motivation | 0.58 | 0.98 | 0.061 | 0.598 | 0.551 |
| Amotivation | 1.638 | 0.506 | 0.263 | 3.239 | 0.002 |
| R= 0.790 R ² = 0.50 | | | | | |
| F = 30.030 pc 0.01 | | | | | |

Note: Dependent variable: trait anxiety

DISCUSSION

The aim of this research was to reveal the level of impact of self-esteem and motivation on anxiety by determining the anxiety, self-esteem and motivation states of wheelchair basketball players playing in the premier league, before the match. Athletes in this sample may not have reported high anxiety and low self-esteem because they were not comparing their bodies to persons without disabilities and judging their bodies as inferior. Furthermore, sport participation may help adolescents recognize the body's functionality while helping them diminish body image concerns [3]. Sherrill, Hinson, Gench, Kennedy & Low [34] reported that adolescent athletes with physical disabilities (N = 158) had mean self concept scores on the Harter' self-perception profile instrument that were within or close to ranges in the test manual for adolescents without disabilities. Sherrill et al. [34] posited that these findings might reflect deep-seated denial mechanisms or pride in their fitness and appearance compared to athletes without disabilities. Cognitive evaluation theory is a sub-theory of self-determination theory that attempts to explain variations in intrinsic motivation as a function of social and environmental factors [7]. According to cognitive evaluation theory, intrinsic motivation is an innate human emotion, and will thrive when an individual's needs for autonomy and competence are both satisfied [8]. However, researchers [10,39] suggested that since elite sport environments were primarily focused on winning, they were not conducive to the development of intrinsic motivation. This was not the case in the current study, as the athletes reported to have high levels of intrinsic motivation.

During the study, it was also questioned if there is a significant statistical relation between trait anxiety, state anxiety, self-esteem and

motivation levels. It was found out that there was a significant positive relation between both trait and state anxiety and internal motivation, external motivation and non-motivation, whereas a significant negative relation with self-esteem was found (p<0.05). Besides this, while there was a negative relation between both external motivation and amotivation (p<0.05), statistically no relation was found with internal motivation (p>0.05). These results offer some support for the framework outlined by Ferreira, Chatzisarantis, Gaspar & Campos,[11]; Greenwood, Dzewaltowski & French, [12]; Henschen,, Horvat & Roswal [13]; Humprey & Revelle [14]; Kirkby [18]; Magnus, Kowalski & Mchugh [22]; Martin [24]; Piedmont, [31]; Piipari, Watt, Jaakkola, Liukkonen & Nurmi [32].

It was tested whether the wheelchair basketball players' self-esteem, internal motivation, external motivation and amotivation points all together predict the levels of state anxiety and trait anxiety. All four variables were entered simultaneously as predictors in the regression analysis. Results for state anxiety and trait anxiety can be found in Tables 3 and 4, respectively.

As a result of the multidimensional regression analysis, it was found that the levels of self-esteem, internal motivation, external motivation and amotivation all explain the variance of state anxiety which is in the position of a predictor variable by 42%. Of these variables, self-esteem and amotivation levels affect the state anxiety but internal and external motivations have a limited effect. Furthermore, when the interaction of these four variables with trait anxiety was examined, it was observed that it explains 50% of the variance of trait anxiety. Although self-esteem and non-motivation levels affect trait anxiety, internal and external motivation has a limited effect and we can come to the conclusion that this was a coincidental effect. In particular, cognitive evolution theory provides a theoretical framework to generate hypotheses about anxiety, motivation and self-esteem in a group of athletes with disabilities [33,41]. According to Martens, Burton, Vealey, Bump & Smith [23], and Martin & Gill [25], the important components of performance are self-esteem and self-confidence. According to the results of the studies, self-esteem is one of the major regulators of anxiety. Therefore studies increasing self-esteem will have an important role in regulating motivation. In addition, there is an important result which should not be underestimated that motivation and self-esteem predict state and trait anxiety at such high levels.

CONCLUSIONS

The present study examined the impact of self-esteem and motivation on anxiety by determining the anxiety, self-esteem and motivation states of wheelchair basketball players playing in the premier league, before the match. Motivation and self-esteem are the best predictors of trait and state anxiety among the premier league wheelchair basketball players. Even though this group seems like a small group compared to the other groups, results that can be considered as representing the universal pattern were achieved. The findings of this study can provide evidence and contribute to future studies.

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