

**SHORT REPORT**

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# **COMPARATIVE ANALYSIS IN COACHING EDUCATION: THE PARALYMPIC ATHLETE LEVEL OF MOTIVATION COMPARED TO THAT OF TYPICAL NCAA DII ATHLETES**

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## **ABSTRACT**

An independent-samples t-test was conducted to compare motivation scores for USA Paralympic Athletes and NCAA Division II Athletes on Six Key Types of Motivation as defined by the Self-Determination Theory of Motivation. The data was collected using the 7-point likert scale of the Sport Motivation Scale-II (SMS-II). In this particular study, there was a significant difference on the scores for the USA Paralympic Athletes ( $M=6.03$ ,  $SD=1.24$ ) and the NCAA Athletes ( $M=5.3$ ,  $SD=1.39$ ) on the Intrinsic Motivation Scores from the Sport Motivation Scale- II;  $t(132)=2.47$ ,  $p = 0.015$ . Also significant were the differences in scores on the External Motivation, and Amotivation Scales. Because these types of motivation are not productive or conducive to continued participation and improvement, the scores on these measures is better when lower. The results of the External Motivation Scale for the USA Paralympic Athletes ( $M=1.75$ ,  $SD=1.01$ ) and the NCAA Division I Athletes ( $M=3.20$ ,  $SD=1.46$ ) on the External Motivation Scores from the Sport Motivation Scale- II were;  $t(131)=-5.72$ ,  $p = 0.0000001$ . The results for the Amotivation scale for the USA Paralympic Athletes ( $M=1.39$ ,  $SD=0.90$ ) and the NCAA Division I Athletes ( $M=2.3$ ,  $SD=1.39$ ) on the External Motivation Scores from the Sport Motivation Scale- II were;  $t(134)=-3.98$ ,  $p = 0.0001$ .

These results of the study suggest that Paralympic Athletes, can develop higher motivational levels than typical University NCAA Athletes, and that, given the ideal motivational climate, the paralympic athletes will be relatively autonomous in their pursuit of their athletic goals. Specifically, our results suggest that USA Paralympians are highly motivated to perform and participate in competitive athletics at a motivational level that is significant in terms of both positive motivation (Intrinsic Motivation) and a minimization of negative motivation (External Motivation and Amotivation) when contrasted with the motivational levels of typical NCAA Athletes. Although a comprehensive literature review shows that amotivation can be detrimental to disabled athletes' long term participation in competitive sport, this study demonstrates that high levels of motivation are present among USA Paralympians, and are, thus, quite possible for other athletes in disability sport as well.

**Keywords:** Paralympics, Paralympian, Athlete, Motivation

## INTRODUCTION

Because all coaches are vital to the success of an athletes' motivational level in the sport they coach, the significance of motivation in a competitive sports environment should be explored in order for coaches to be able to coach more effectively in their sport. When certain aspects of motivation are utilized, not only is an athlete able to have a higher level of motivation, the coach is more able to direct their athletes to incorporate motivational strategies that will assist them over the long term in their sport careers. By learning the motivation level of Paralympic Athletes, coaches will be able to appropriate transforming instructional methods and apply coaching strategies that can increase intrinsic motivation, and improve athletic performance. A secondary purpose of the study is to raise the banner for Paralympic Athlete motivation by comparing the motivation of the Paralympic Athlete who is working in an ideal learning environment with that of a typical NCAA Athlete. Through statistical analysis, we will report the motivational profile of the Paralympic Athletes surveyed in our study, and compare Paralympian scores to the SMS-II motivational scores of the typical NCAA athlete as conducted in a study by Bean [1] in 2014.

### *Theoretical Framework*

Coaching Elite Sport has it's array of challenges. Coaching Adapted Elite "Paralympic" sport has additional layers of complexity that add to the level of expertise needed to do the job well. Martin, et.al. [2] identified such aspects as: understanding the nuances of each of their athletes' unique disabilities, dealing with accessibility issues, and navigating additional travel logistics. In the area of applied sport psychology to Paralympic Coaching and Athletes, researchers [3] have shown elite athletes with

a physical disability are more intrinsically motivated when they feel in control of their sport experience, feel competent in their sport, and are motivated to achieve new goals. The same is true of intrinsic motivation to experience stimulation, which is defined as doing the activity for the positive physical and emotional experiences that occur while doing the activity. Canadian national wheelchair rugby players [4] have expressed increased feelings of self-confidence and empowerment as a result of belonging to a sport community where they were no longer isolated because of their disability. Moreover, their sport experience helped them grow as individuals on and off the court. Such research identifies the importance of creating an autonomy-supportive sport environment when coaching elite athletes with a disability. Because there are few programs available for coaches of elite athletes with a disability, studies that have been qualitative observations of coaches who model such coaching behaviors are of tremendous value. In 2014, the coach of the USA Paralympic Sitting Volleyball Team was observed [5] modeling coaching behaviors that enhanced elite disability sport participants level of intrinsic motivation. The ideal coaching strategies employed by the coaching staff, provided best practices that were used to train student coaches who work with Paralympic and Able Bodied athletes. Observed behaviors included, but were not limited to, 1) providing how to provide athletes with choices (e.g., which drills to use during practice), 2) how to give athletes opportunities to take initiative (e.g., designing a practice on their own), and 3) how to give constructive, task-oriented feedback in order to foster intrinsic motivation. The type of coaching described herein, can be characterized as that of a transformational leader [6]. Transformational leaders espouse ideals, act as role models, and show care and concern for each subordinate. They inspire their followers by formulating a

vision and setting challenging goals, and stimulate them intellectually to think about old problems in innovative ways. Charbonneau, et.al. [6] successfully demonstrated that the very nature of the different components of transformational leadership will be particularly suited to enhancing intrinsic motivation, and improving athletic performance. “With its emphasis on stirring individuals to think for themselves, and to approach old problems in new ways, the intellectual-stimulation component of transformational leadership increases knowledge, learning, and understanding. Similarly, charisma raises individuals’ and groups’ expectations about what they can achieve and is likely to increase the accomplishment and task orientation component of intrinsic motivation.”

Comparing athletes with and without disability is a common practice within sport psychology research for individuals with a disability. [7] Such a comparison is often justified by the idea that athletes with a disability differ from athletes without disability in that they “have had a major life trauma, loss, or chronic situation to which they have had to adjust.” Critics would argue that the challenging life event(s) that the Paralympic Athlete has faced would cause the Paralympic athlete to score higher than the able bodied athlete on Sport Motivational tests. What is not taken into account, across the board, when studies like this have been conducted, is the fact that there is a lack of trained [3] coaches of adapted sport teams. This lack of training can bring Sport Motivation Scores down to the point of predicting athlete burnout and disinterest, and poor scores in Sport Motivation. However, when well trained coaches are working in the field of Paralympic Sport, the same (if not, more significant) benefit of implementing a transformational leadership style to able bodied athletes should occur. As research

from the Banack, et.al. study has indicated [3], the same psychological processes apply to athletes with a physical disability, as they do to able bodied athletes. The key, then, it would seem, is in the coaching.

## METHODS

### *Data Collection*

Data was collected with a USA Paralympic Team in the Summer of 2015. All members of the team (23) were invited to voluntarily participate in the study. After signed consent forms were received from the participants, the surveys were given and the results were collected prior to a practice with paper and pencil results collected and then tabulated. The data from the NCAA Sports Teams was collected in a previous study (Bean, 2014) and used for the purpose of comparison in this study. An independent-samples t-test was conducted to compare motivation scores for USA Paralympic Athletes and NCAA Division 1 Athletes on Six Key Types of Motivation as defined by the Self-Determination Theory of Motivation. The data was collected using the 7-point likert scale of the Sport Motivation Scale-II (SMS-II). The athletes motivation types are categorized as either having a positive or negative impact on long term motivation. In a positive light, higher scores on the Intrinsic, Integrated, and identified Motivation Scales are seen as positively effecting athlete motivation. In a negative light, Higher scores on the Introjected, External, and Amotivation types are seen as negatively effecting athlete motivation.

### *The Sport Motivation Scale II*

Self Determination Theory has a “multi-dimensional measurement tool used to assess sport motivation.” This evaluation instrument is called the Sports Motivation Scale (SMS). The SMS was created in 1995, and was redeveloped in 2013. The revised

version of the SMS is the Sports Motivation Scale II (SMS-II). This SMS-II has been tested for validity and reliability, and has been deployed in professional and amateur sport coaching research. With its questions designed in line with the key aspects of Self Determination theory, it is an appropriate theoretical framework to understand and promote ideal motivation in sport [8]. The SMS-II was designed to be more efficient and asks fewer questions than the original SMS. The SMS has 28 questions while the SMS-II has 18 questions. The participant answers questions on a likert scale (1 to 7) and can complete the survey in under 15 minutes. The motivation of the participant is evaluated, based on the fact that the respondents' questions are coded to correspond with a specific form of motivation regulation. We have found the use of this scale to be non intrusive and taken by participants quite willingly.

**RESULTS**

There was a significant difference on the scores for the USA Paralympic Athletes (M=6.03, SD=1.24) and the NCAA Athletes (M=5.3, SD=1.39) on the Intrinsic Motivation Scores from the Sport Motivation Scale- II;  $t(132)=2.47, p = 0.015$ . (see Fig.1)

**Figure 1** Intrinsic Motivation Scores for the SMS-II

GROUP	N	Mean	SD
Paralympians	23	6.03	1.24
NCAA Athletes	111	5.31	1.39
<b>T-Test &amp; P Value Intrinsic</b>	<b>t</b>	<b>df</b>	<b>p</b>
	t= 2.47	df=132	p=0.015

Also significant were the differences in scores on the External Motivation, and Amotivation Scales. Because these types of motivation are not productive or conducive to continued participation, productivity, and/or improvement, the scores on these measures are better when lower. The results of the External Motivation Scale for the USA Paralympic Athletes (M=1.75, SD=1.01) and the NCAA Athletes (M=3.20, SD=1.46) on the External Motivation Scores from the Sport Motivation Scale- II were;  $t(131)=-5.72, p = 0.0001$ . (see Fig.2)

**Figure 2** External Motivation Scores for the SMS-II

GROUP	N	Mean	SD
Paralympians	23	1.75	1.01
NCAA Athletes	110	3.20	1.46
<b>T-Test &amp; P Value External</b>	<b>t</b>	<b>df</b>	<b>p</b>
	t= 5.72	df=131	p=0.0001

The results for the Amotivation scale for the USA Paralympic Athletes (M=1.39, SD=0.90) and the NCAA Athletes (M=2.3, SD=1.39) on the External Motivation Scores from the Sport Motivation Scale- II were;  $t(134)=-3.98, p = 0.0001$ . (see Fig.3) were also statistically significant.

**Figure 3** Amotivation Motivation Scores for the SMS-II

GROUP	N	Mean	SD
Paralympians	23	1.39	0.90
NCAA Athletes	113	2.30	1.39
<b>T-Test &amp; P Value Amotivation</b>	<b>t</b>	<b>df</b>	<b>p</b>
	t=3.98	df=134	p=0.0001

## CONCLUSION

The results of the study suggest that, given a coach who practices transformational leadership techniques [5], Paralympic Athletes will demonstrate a high motivation level on scores on the Sport Motivation Scale-II. These scores, based upon their comparison to the study by Bean [1] of NCAA Athletes, was at a significantly higher motivational level than traditional NCAA Athletes on the Intrinsic Motivation Score, and significantly lower on the External Motivation and Amotivation scores of the SMS-II. The conclusion that can be drawn, is therefore, that the Paralympians given quality transformational coaching, will be relatively autonomous in their pursuit of their athletic goals. Specifically, our results suggest that USA Paralympians are highly motivated to perform and participate in competitive athletics at a motivational level that is significant in terms of both positive motivation (Intrinsic Motivation) and that scores are significantly low in terms of negative motivation (External Motivation and Amotivation) when contrasted with the motivational levels of traditional NCAA Athletes. Further study can and should be conducted to verify these preliminary findings. It would also be interesting to determine if transformational coaches can also predict the level of motivation in their athletes during different stages of the competitive season.

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