Research Paper

Difference in Level of Mental Well-Being in Team and Individual Athletes; Assessing Self-Confidence's Contribution to the Difference

Dipam Sharma[1]*, Dr. Chris Hartley[2]

ABSTRACT

This study explores the difference in the level of mental well-being between the athletes playing team sports and individual sports. Another objective of the study was to understand the difference in mental well-being between the type of sports while controlling self-confidence. 156 participants were included in the study, comprising of 78 team sport athletes and 78 individual sport athletes, between the age of 18 to 30 (M=24.88). The participants completed a questionnaire consisting of Warwick Edinburgh Mental Well-Being Scale (WEMWBS) and Trait Robustness of Self-Confidence Inventory (TROSCI) to collect data on mental well-being and self-confidence, respectively. The result suggests that there was no difference in the level of mental well-being between the type of sports. Even when self-confidence was controlled, there was no significant difference observed in the level of mental well-being between the type of sports. However, the study suggests a positive correlation between self-confidence and mental well-being.

Keywords: WEMWBS, TROSCI, Correlation, No Difference

I n the field of sports and exercise psychology, a lot of emphases has been laid on the concept of performance enhancement, motivational upliftment, and facilitating the athlete to reach their optimal zone of functioning to deliver their peak performance (Gilmore et al., 2018). But very minimal attention has been directed towards the realm of mental well-being. Mental well-being has become an area of interest in the field of sports psychology in recent years, and researchers in the field of sports and exercise psychology and sciences have directed significant attention to the aspect of mental well-being, and the contribution of mental well-being on performance (Giles et al., 2020). Previous studies and literature have substantiated the statement that sports and physical activities are instrumental in promoting positive experiences and mental well-being (Gould & Carson, 2008). However, it has been observed that semi-professional and elite athlete's mental well-being can be adversely affected as they incorporate a high level of athletic identity, psychosocial stress and anxiety, and burnout caused by overtraining due to competitive pressure (Tracey & Elcombe, 2004). These stressors can lead to major drops in athletic performance (Selye,

[1]Student, Sports Psychology, Faculty of Health Sciences and Sport, University of Stirling
[2]Faculty of Health Sciences and Sport, University of Stirling, United Kingdom
*Corresponding Author

1993) and, it is very essential to value the mental well-being of the athlete and understand the factors affecting and enhancing mental well-being.

Mental well-being is a concept that consists of autonomy, environmental mastery, understanding the purpose of life, and realization of one's potential to work in a productive manner (Ryff, 1989). Ryff & Keyes (1995) added to the definition that, mental well-being is an individual's potential to attain their goals and personal development. In the field of sports, mental well-being was not paid much attention to before, as it was believed that reducing mental illness was equivalent to having good mental health and mental well-being (Uphill et al., 2016). But recent literature suggests that mental health and well-being have gained significant interest in the field of sports as it has claimed to improve performance as well as the quality of life of the athletes (Mack et al., 2020).

Previous studies suggest that mental well-being has a positive influence on athletic performance and promotes self-awareness, helps in better management of emotions, and increases psychological resilience (Hansen et al., 2003; Bartko & Eccles, 2003). Brustad (1988) argued that participation in competitive sport can lead to an adverse effect on mood regulation and self-esteem, which can lead to performance depletion. But an increase in the level of mental well-being can support performance upliftment and mood regulation. Previous literature has laid prominent importance on the relationship between self-confidence and mental well-being and has supported that mental well-being is facilitated by attributional styles and self-confidence (Cheng and Furnham, 2003).

Adalikwu (2012) defines self-confidence as, the belief that an individual holds in their capabilities to successfully accomplish a given task, irrespective of whether or not they were able to accomplish the task in the past. Another study defines self-confidence to be based on an individual's own efforts, skills, and weaknesses (Miyagawa, 2010). Previous studies have paid vital attention to the concept of self-confidence in sports (Koivula et al., 2002). Self-confidence has been a topic of interest to researchers in the field of sports and exercise psychology, and previous literature explored the positive influence of self-confidence in promoting athletic performance (Woodman & Hardy, 2003). However, previous literature comparing the level of self-confidence in team and individual sport is very inconsistent. There are studies that have recognized that team sports athletes have a higher level of self-confidence when compared to individual sport athletes. (Zeng, 2003; Yilmaz et al., 2015). But, Bozdogan & Guler (2017) explores that team and individual sport athletes lack a difference in the level of self-confidence.

Self-confidence has a positive relation with self-efficacy as, higher self-confidence leads to higher belief in one's own potential and abilities to perform a task (Munroe-Chandler et al., 2008). Previous studies have suggested that self-confidence and self-efficacy has been used interchangeably in sports psychology literature, and also states that both of the terms in sports psychology literature directs to the cognitive process of athlete's judgment of their own abilities in decision making and goal accomplishment (Feltz & Oncu, 2014). Self-efficacy theory is very instrumental in understanding the relationship between self-confidence and mental well-being. Bandura (1977), states that self-efficacy is a particular set of beliefs that an individual holds on their own ability to perform a given task or one's belief in their ability to execute a plan. Self-efficacy theory supports the statement that a higher level of belief in one's abilities and skills to perform a given task has a positive implication on motivation and mental well-being (Magaletta & Oliver, 1999. Exploring the effect of

self-efficacy on sports performance and well-being states that, athletes with higher levels of self-efficacy have significantly higher levels of well-being and lower level of stress, anxiety, and tension (Feltz & Oncu, 2014). As self-efficacy and self-confidence have been used interchangeably in sports psychology literature, and there is a positive relationship between self-efficacy and mental well-being, therefore, we can state that there is a correlation between self-confidence and mental well-being.

Although mental well-being has gained vital importance in the sports domain and relations have been cited between athlete's well-being and their performance enhancement, the literature in the area of mental well-being in sports is very limited (Uphill et al., 2016). Unfortunately, there have been no previously conducted published studies comparing the mental well-being of team sport athletes and individual sport athletes. But looking at close proximity to mental well-being, comparative studies have been conducted between team and individual sport athletes on the basis of anxiety and mental health in general (Hogg, 1980; Martens, 1990; Zeng, 2003). As there are no previous studies comparing mental well-being in team and individual sport athletes, and findings of the comparative studies on anxiety are inconsistent, thus, this paper focuses on bridging the research gap by assessing the difference in the level of mental well-being in team and individual sports. Considering the previous literature on self-confidence and its influence on well-being, this paper also explores the difference in mental well-being in team and individual sports by controlling the effect of self-confidence.

As such, the current study aims to investigate the following research questions:
- Is there a difference in the level of mental well-being between the athletes that play team sport and the athletes that play individual sports?
- Does the level of mental well-being change when the effect of self-confidence is controlled?

Based on the previous literature, this study hypothesizes the following:
- H_1: There is a significant difference in the level of mental well-being between team sport athletes and individual sport athletes.
- H_2: There is a significant difference in the level of mental well-being by the type of sport when self-confidence is controlled.

METHODOLOGY

Sample
The study included 156 participants (*N*=156) with 92 males (58.98%) and 63 females (41.02%). Participants were between the age of 18 to 30 (*M*=24.88, *SD*=3.62). The sampling technique used in the study was snowballing sampling technique. The participants for the study were gathered from different regions of the world (India, UK, Germany, Singapore, Maldives, South Africa). The participants played at a semi-professional or professional level. 78 participants engaged in individual sports (*N*= 78, 50%), and 78 participants engaged in team sports (*N*=78, 50%). Individual sports included Dance, Boxing, Badminton, Motorsport, Running, Athletics, Lawn tennis, Equestrian, Taekwondo, Arm-wrestling, Table-tennis, Swimming, Fencing, Archery, Cycling, Judo, Gymnastics, and Rowing. Team sports included Hockey, Cricket, Basketball, Handball, Ultimate Frisbee, Throwball, Volleyball, Netball, Football, and Kabaddi. A G*Power sample size calculation based on an

ANCOVA modeling suggested a sample size of 105 ($f = 0.15$, power = .80, $\alpha = .05$) participants.

Inclusion Criteria.
Participants included in the study were current active athletes and were above the age of 18.

Exclusion Criteria.
Participants that were not currently active athletes and who could not read and write in English were not included in the study.

Research Design
The research was quantitative non-experimental research and the study integrated a cross-sectional, observational research design. The data were divided into two groups, individual athletes and team athletes, amongst which the comparison was drawn on the basis of the level of mental well-being. The type of sport (individual/team) served as the independent variable and mental well-being served as the dependent variable. In the study, self-confidence was used as a control variable.

Instruments
1. **Demographic Questionnaire:** Participants were asked to provide demographic details such as age, sex, country of residence, sport participation details (type of sport, name of sport, level of participation). These details were collected for descriptive and grouping measures.
2. **Warwick-Edinburgh Mental Well-Being Scale (WEMWBS):** The WEMWBS (Tennant et al., 2007) was used to assess mental well-being. The WEMWBS, is a 14-item questionnaire that covers both feelings and functional aspects of mental wellbeing. All the items in the questionnaire are positively worded and the participants are asked to describes their experience from the past two weeks by responding to each item on a Likert type scale (1= None of the time to 5= all of the time). The scores were calculated by summing up the values of all the items in the questionnaire. A higher score indicates a higher level of mental well-being and a lower score indicates a lower level of mental well-being. The WEMWBS has previously been shown to be high in terms of criterion validity. Also, it is a reliable tool for the proposed study as its internal consistency is .89 (α= .89) and test-retest reliability is .83 (r=.83) (Tennant et al., 2007).
3. **Trait Robustness of Self-Confidence Inventory (TROSCI):** The TROSCI (Beattie et al., 2011) was used to assess the level of self-confidence. The TROSCI is an 8-item self-report questionnaire that determines the level of self-confidence in athletes. The TROSCI is a Likert scale questionnaire and the participants are supposed to describe their feelings for each statement from 1 (strongly disagree) to 5 (strongly agree). The total score of TROSCI is calculated by summing the values of all the items. A higher total score indicates a higher level of self-confidence and a low score indicates a lower level of self-confidence. The TROSCI is a highly reliable tool to measure self-confidence for the proposed study as, TROSCI was specifically designed to measure the self-confidence in athletes and has a high internal consistency .88 (α= .88) and test-retest reliability .90 (r=.90); (Beattie et al., 2011).

Procedure

Considering the global inclusion of participants, an online questionnaire was developed using JISC. Prior to filling the questionnaire, the participants were notified of their right to withdraw from the study at any given point in time and were informed about the background of the study. The first section of the questionnaire included a demographic section to obtain the basic study required information of the participants (age, region of residence, type of sport, name of sport, etc.), followed by the WEMWBS questionnaire and the TROSCI questionnaire. The participants were provided with the questionnaire via email and the participants were not given any limited time to complete the questionnaire. All 156 participants, irrespective of the type of sport they played, filled the same questionnaire.

Statistical Analysis

The data was processed and analyzed using the statistical software Statistical Package for the Social Sciences (SPSS V.23). To analyze the normality of the data, skewness, and kurtosis was measured along with the Shapiro-Wilk significance level (see table 1). The descriptive statistics were examined to state the mean, SD, and correlation of the variables. A graphic histogram representation was also observed to confirm the normality of the data. With the confirmation of normally distributed data, analysis of parametric tests was considered suitable for the proposed study.

To understand the group difference in the level of self-confidence between the type of sports, an ANOVA test was administered. ANOVA test was suitable for the purposed study, as the test can administer the difference of a variable (self-confidence) in between two groups (team and individual sports).

Considering the nature of the study, an ANCOVA test was administered with type of sport as independent variable, mental well-being as the dependent variable, and self-confidence as the control variable. The ANCOVA test was suitable for the study as it analyses group differences and also supports the administration of group differences by controlling the effect of a covariant (Rutherford, 2001). Thus, it facilitates our study by administering the difference between the level of mental well-being in different sport types. Also, ANCOVA states the difference in mental well-being by type of sport when self-confidence is controlled. Thus, ANCOVA is instrumental in finding results to our research question as well as examining our hypothesis.

RESULTS

Descriptive Statistics

Table 1 and 2 depict the descriptive statistics of the study as table 1 provides statistical data to the mean (M), standard deviation (SD), kurtosis, skewness, and Shapiro-Wilk significance level of the two variables mental well-being and self-confidence and table 2 shows the correlations between the two variables.

Table 1 Participant Distribution Normality

	N	M	SD	Kurtosis (SE)	Skewness (SE)	Shapiro-Wilk Sig.
Mental Wellbeing	156	49.15	8.81	.07 (.38)	-.45 (.19)	**.07**
Self-Confidence	156	24.43	4.03	-.29 (.38)	.10 (.19)	**.11**

Note. p-value $< .05$ appears in **bold**

Considering the Values from table 1, the normality of the data was assessed by calculating the z-score from the skewness and kurtosis values (Kim, 2013). Both mental well-being and self-confidence variables were normally distributed as the calculated skewness z-score was -2.34 and kurtosis z-score was .17 for mental well-being, and for self-confidence, the skewness and kurtosis z-scores were .52 and -.76 respectively. These values fall under the range of -3 to +3 for normally distributed data, if the data is more than 50 but less than 300 (50<N<300; Sharma & Ojha, 2020). Also, table 1 suggests a Shapiro-Wilk value of .07 (p>.05) for Mental Well-being and .11 (p>.05) for Self-confidence. Thus, there is no significant deviance in the distribution of the data under the variable and the data is normally distributed (Razali & Wah, 2011). These findings were supported by a visual representation of the data on a histogram graph, which showed a normal bell curve of normally distributed data.

Table 2 Correlation Between Variables

		Mental Well-being	**Self-Confidence**
Mental Well-being	Pearson Correlation	1	.29
	Sig. (2-Tailed)		**.000**
	N	156	156
Self-Confidence	Pearson Correlation	.29	
	Sig. (2-Tailed)	**.000**	
	N	156	156

Note. p-value < .05 appears in **bold**

Considering that the data were normally distributed, a Pearson correlation test was administered to observe the correlation between mental well-being and self-confidence. The results from table 2 state that there is a significant correlation between self-confidence and mental well-being with, *r* = .29, *p*<.001, N = 156. Therefore, we can conclude that self-confidence and mental well-being are related to each other.

Inferential Tests
Table 3 shows the results of the ANOVA to evaluate the group difference of self-confidence in-between types of sport. Table 4 shows the result of ANCOVA with self-confidence and type of sport as the independent and mental well-being as the dependent variable.

Table 3 ANOVA analysis of self-confidence on type of sport

	DF	**F**	***p*-value**
Between Groups	1	1.88	**.17**
Within Groups	154		
Total	155		

Note. p-value < .05 appears in **bold**

Level of self-confidence between types of sports.
An ANOVA test was administered and the results of the test state a significance value of .17 (p>.05). Thus, with p>.05, it can be concluded that there is no significant difference in the level of self-confidence in the athletes that play team sport and those who play individual sport.

Table 4 *ANCOVA analysis of self-confidence and sport type on mental well-being*

	F(df)	*p*-value
Type of Sports	.017(1)	**.89**
Self-Confidence*Type of sports	.952(16)	**.51**

Note. *p*-value < .05 appears in **bold**

Level of mental well-being between the type of sports.

An ANCOVA test was administered and the analysis states the significance value of .89 (p>.05). Thus, with p>.05, it can be suggested that there is no difference in the level of mental well-being in types of sports, i.e., team and individual sport athletes have the same level of mental well-being. The results from table 3 suggest that the hypothesis of the study can be rejected (H_1).

Level of mental well-being between types of sports with controlled self-confidence.

An ANCOVA test was administered and the analysis states the significance value of .51 (p>.05). Thus, there was no significant difference in the level of mental well-being between the type of sports when the covariate self-confidence was controlled. The results from table 3 suggest that hypothesis of the study can be rejected (H_2).

DISCUSSION

The purpose of the study was to determine the difference in the level of mental well-being between the athletes that play team sport to the athlete that plays individual sport. The level of self-confidence was also assessed in the athletes to understand the correlation between self-confidence and mental well-being and also to understand if the level of mental well-being differs in between the type of sport if the effect of self-confidence is controlled. As there was no previous literature exploring the difference in mental well-being between team and individual sports, thus, the research topic was developed based on previously existing literature on related areas like differences in anxiety in team and individual athletes. The existing literature is very inconsistent and contradictory, as there are previous studies that state the level of anxiety is lower in team athletes (Pluhar et al., 2019) and, other studies suggest a contradictory view and state the level of anxiety to be lower in individual athletes and higher in team athletes (Boghrabadi et al., 2015). Considering the lack of literature, this study will be instrumental in contributing to the literature on mental well-being in team and individual sport athletes.

The results of the study state that there is a significant positive correlation between the two variables, mental well-being, and self-confidence. Thus, that suggests that if there is an increase in the level of self-confidence there will be an increase in the level of mental well-being. The finding of the study is in line with previous literature that also found self-confidence and mental well-being to be related and showed self-confidence to predict mental well-being (Freeman et al., 2014; Malkoc & Multu, 2019).

The correlation between self-confidence and mental well-being can also be supported by drawing parallels to the self-efficacy theory. Previous studies on self-efficacy theory and its relation to mental well-being indicate that higher level of self-efficacy or belief in one's abilities leads to an increased sense of well-being (Bandura, 1986; Andretta & McKay, 2020). Exploring the relationship between self-efficacy and self-confidence, previous literature states that, level of self-confidence is directly related to the level of self-efficacy (Munroe-Chandler et al., 2008; Weinberg et al., 1979). Thus, it can be stated that the study

aligns and accepts the self-efficacy theory as the results state a positive correlation between self-confidence and mental well-being.

Exploring the difference in the level of self-confidence in team and individual athletes, the results of the study support that there is no significant difference in the level of self-confidence between both types of sports. The finding of the study is supported by previous literature, as previous studies explored similar findings of no significant difference in the level of self-confidence in team and individual sport athletes (Bozdogan & Guler, 2017). However, previous literature has been inconsistent as some other studies suggest that team sport athletes have a higher level of self-confidence in comparison to individual sport athletes (Zeng, 2003; Yilmaz et al., 2015). Recent literature suggests that the isolation during the pandemic had a vital effect on the mental health and self-confidence of the athletes (Senisik et al., 2021). Therefore, one potential justification for no significant difference in the level of self-confidence in team and individual sport athletes can be drawn in line with the effect of the COVID-19 pandemic. There are very limited studies that compare the difference in self-confidence in team and individual sports, thus, the finding of this study is an instrumental contribution to the available literature.

The primary purpose of the study was to explore the difference in the level of mental well-being between team and individual sport athletes. The results show that there is no significant difference in the level of mental well-being between the athletes that play team sport and the athletes that play individual sports. A possible reason for no significant difference in the level of mental well-being can be suggested in reference to the previous finding of no significant difference in self-confidence. Considering self-efficacy theory, no difference in the level of self-confidence between the type of sports can lead to no difference in the level of mental well-being, as they are both related. To justify the finding, it can be suggested that the COVID-19 pandemic might have an influence on the level of mental well-being, as recent studies suggested that COVID-19 had an effect on the well-being of athletes (Lamberts & Gomez-Ezeiza, 2020). Therefore, COVID-19 might have an impact on bringing mental well-being at the same level for team sport athletes and individual sport athletes.

Another possible explanation can be based on the basic psychological needs theory (BPNT). The basic psychological needs theory is based on three key components of autonomy, competence, and relatedness. The BPNT state that satisfaction of the three key components is positively related to the level of mental well-being (Cantarero et al., 2021). Previous studies state that the fulfillment of basic psychological needs in athletes leads to lower burnout and higher well-being (Hodge et al., 2008). Thus, it can be suggested that there is no difference in the level of mental well-being because the athletes might have the same level of autonomy, competency, and relatedness.

Due to the lack of previous literature, a comparison of differences in mental well-being was made in line with the difference in the level of anxiety in team and individual sport athletes, as anxiety has been previously studied and it lies in close proximity to our research area. Previous literature on anxiety in team and individual sports is contradictory, as some studies suggested that the level of anxiety is comparatively higher in individual sport athletes than in team sport athletes (Phular et al. 2019), some suggest that individual athletes encounter a lower level of anxiety (Hogg, 1980; Zeng, 2003). But our results of no difference in the level of mental well-being is in line with other studies that suggest no significant difference in the

level of anxiety in team and individual athletes (Ustun & Yapici, 2019). Considering there is no literature comparing the level of mental well-being in team and individual athletes, this study will be a major contribution to the literature for future research.

Another focus of the study was to understand if self-confidence can affect the level of mental well-being in team and individual sport athletes. Analysing the results of the study, it was observed that there was no difference in the level of mental well-being in team and individual sport when the effect of self-confidence was controlled. Thus, it conveys that the level of self-confidence does not determine a difference in the level of mental well-being in team and individual sport athletes. Referring to the findings from previous studies, there should have been a difference in the level of mental well-being when the effect of self-confidence was controlled. Therefore, the results of our study do not accept the finding of previous studies as, previous studies based on self-efficacy theory have suggested that self-confidence has an influence on the level of mental well-being (Gill et al., 1994).

The strengths of the study can be substantiated as, the participants included in the study were selected from around the globe (India, UK, Germany Singapore, Maldives, South Africa). Thus, this study consisted of cross-cultural (or cross-national) data. Previous literature suggests that the inclusion of cross-cultural participants is instrumental in understanding a broader and deeper view of the research area and significantly reduces cultural bias as well (Allmark, 2004; Sindik, 2012). Previous studies have laid emphases on the importance of new research tools and have supported the use of contemporary questionnaires to make the study more reliable in the contemporary world (Schekman et al. 2015). Thus, the study implements the use of contemporary tools to measure mental well-being (WEMWBS) and self-confidence (TROSCI) to make the findings more reliable in the contemporary world.

However, there are some potential limitations of the study. The study does include cross-cultural (cross-national) participants but, the majority of participants in the study were from India (40%) and UK (37%), due to the unequal distribution of participants across the regions, there might be a slight chance of cultural bias. Previous literature on limitations of research state that unequal representation of gender might cause a gender bias in the study (Price & Murnan, 2004). Thus, another limitation of the study stands as there might be a gender bias in the study because the data collected for this study consisted of 92 males (58.98%) and 63 females (41.02%). In previous studies, the difference in self-confidence and anxiety across team and individual sport athletes was assessed focusing on the athletes that played in the same level of competition (Hogg, 1980; Zeng, 2003). As the athletes in this study were not divided into categories according to their level of competition, there might be a bias in the results. Considering the data were collected during the COVID-19 pandemic, there might be a bias in the results as, previous literature suggests that the mental well-being and confidence of the athletes observed a downward curve during this time (Fronso et al., 2020; Graupensperger et al. 2020).

Analyzing the practical implications of the study it can be stated that, as the results of our study suggest a positive correlation between self-confidence and mental well-being, coaches and policy makers might lay emphasis on that and might plan intervention programs to enhance the level of mental well-being by enhancing self-confidence or vice-versa. Due to the lack of literature in the research area, this study will be significant in contributing to the literature for future research on related areas. The findings of this study might be

instrumental for sports psychologists and practitioners that focus on improving the level of mental well-being.

As there is a lack of literature on the research area, there is a huge scope for future research. As the present study was a comparative and exploratory study, it did not assess the causal effect of self-confidence on the level of mental well-being. Future research can focus on understanding the effect of self-confidence on mental well-being in team and individual sports. Future research can focus on adopting a longitudinal or experimental research design to understand the causal effect. Future researchers can collect data on the level of self-confidence and mental well-being from team and individual sport athletes, and then implement an intervention program to improve self-confidence. Following a longitudinal research method, the level of self-confidence and mental well-being can be measured in intervals and comparison can be underlined to understand the causal effect of self-confidence on the level of mental well-being and if it is different for team sport athletes and individual sport athletes. As this study was conducted during the pandemic, future research can be conducted on the same research area to understand the impact of the pandemic on the athlete's mental well-being and confidence.

To summarize, this study explored the difference in the level of mental well-being between team and individual sport athletes. The study suggested that there is no significant difference in the mental well-being of the athletes playing team and individual sports. As there was no previous research on the topic, this study will be a major contributor to the literature. As previous literature suggested a relation between self-confidence and mental well-being, this paper explored the difference of mental well-being in team and individual sport while controlling self-confidence. The study suggested no difference in mental well-being even while controlling self-confidence. This can be a resourceful finding for future researchers and practitioners. The study was conducted during the time of COVID-19, and recent literature suggests that COVID-19 adversely affected the mental well-being and self-confidence of the athletes due to various factors (Graupensperger et al. 2020). Thus, there is a possibility that without the influence of COVID, and under normal circumstances the results of the study could have been different.

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