

Team sport in organisations: the Development of a scale

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Abstract

The purpose of this study was to develop an organisational team sport scale (OTSS). A series of projects was undertaken before the development of this organisational team sport scale.

The initial phase, which consisted of a qualitative study, was done to get an in-depth understanding of how employees perceive organisational team sport interventions in their organisations through focus group interviews and individual interviews ($n = 72$) and through the literature review. In phase 2, information obtained from phase 1 was used to develop a scale which consisted of 53 items. In phase 3, a total of 209 respondents completed the scale. The number of items was reduced to 52 through principal component analyses and a five-factor structure was suggested. The final version of the OTSS contains 52 items that assess coping skills or achieve goals, relationships among participants, physical activity and health, benefits of sport for the organisation and work/life balance. Specific issues with regard to the five-factor structure are discussed and suggestions for future research are made. The findings of this study will contribute valuable new knowledge to the literature on the development of the OTSS.

Keywords: benefits of sport, relationships, organisational team sport, physical activities, scale, work or life balance.

INTRODUCTION

From the results of a research study conducted by Hudson for the Social Issues Research Centre (SIRC) it was found that organisational team sport positively influences an employee's work behaviour (Chandler 2006). Joubert and De Beer (2011) found in their research that organisational team sport interventions hold certain benefits for the organisation and its employees. They further argued that organisational team sport contributes towards the requirements of an effective workforce.

Because few studies have been done on this topic, limited literature is available. Joubert and De Beer (2011) conducted a qualitative study to determine the benefits of organisational team sport interventions for organisations and their employees. Therefore, a need arises to develop a scale so that this study can be proven through statistical analysis. The aim of this study is therefore to develop an organisational team sport scale (OTSS) that is based on the findings obtained from the study by Joubert and De Beer (2011).

BENEFITS OF ORGANISATIONAL TEAM SPORT INTERVENTIONS IN AN ORGANISATION

Sport is seen as the number one industry in the leisure sector. Leisure and amateur sport are becoming more important in a society that is stressed and where people need alternative ways to develop their character and relax (Heuscar n.d.). Three social trends are identified by Crowther, Martin and Shaw (2003) between leisure and modern sport. First is *commodity* because leisure and sport are influenced by profit-seeking and commercial initiatives of multinational companies. The second is *privatisation* or *individuation* because sport and leisure became more home-centred through the aid of technology such as radio, telephone, personal computer, internet and television. The third is *rationalisation* because there is a continued concern about exercise, lifestyle and diet choices among people. Sport is more performance-oriented and young and wealthy individuals go to leisure centres after work for a workout. Organisational team sport in this study can therefore be defined as a combination of influences of a way where employees work together to achieve goals, enhanced relationships among employees, enhancement of health, improved productivity and enhanced work/life balance, which holds benefits for both the employee and the organisation, where employees work together and share a relaxed environment.

Coping skills or achieve goals

Before a work team can be successful, its members need to share the same goals (Biech 2008). A vital requirement for any successful organisation is to ensure that shared, common and reachable goals are set. This will in turn motivate employees to work towards achieving those goals because they form an integral part of a group. Employees

therefore need to decrease their personal needs to reach the company goals. Unfortunately, Thomas (2011) indicates that only 5% of the South African workforce understands the goals set in the organisation and this result in a work team that is unable to pull in the same direction. Conflict will occur in an organisation when the team debates the goal. It is therefore important that the team is 100% committed to working towards the goal and to be sure that the members understand the goal (Joubert, 2012).

Participants who participate in a sports team share the same goal (i.e. to win). Long-term goals are broken down into short-term goals so that the team achieves its goals overall; participants start to respect one another and the relationships among them improve (Cashmore 2003; Joubert & de Beer 2011). In his study, Hewett (2001) concluded that employees, and women in particular, who still play netball, are able to set goals because they are used to setting goals during netball games. These women are more effective leaders because they can work in a group and know how to lead others to achieve their goals. A sports team can be successful only when the participants work together as a team, learn to persevere and they keep on trying, even after their first, second or third attempts, until they reach their goals (Joubert, 2012).

Sport enhances the relationship among participants

Sport participation strengthens the relationship between employees and enhances harmony between them (Muleskinner 2003). Sawyer (2007) argues that participation in sport improves relationships. In his study, he found that almost half of the participants confirmed that the relationship between management and their subordinates was enhanced due to their joint participation

in sport. When team players participate in the same team, they are on the same level and the hierarchical levels in an organisation, which normally restrain participants from becoming friends, are non-existent (Joubert & De Beer 2011). Hewett (2001) is also of the opinion that friendships are formed through sport because participants share their personal successes and failures with their team members and work towards the same goal. Participants who participate in team sport become friends. Friends communicate well and work in harmony with one another; therefore, they are able to work more effectively in a team. They are able to have mutual trust and respect towards one another, share common goals, and communicate effectively. This leads to a more productive workforce (Joubert & De Beer 2011; Joubert, 2012).

Sport as a physical activity and health enhancer

A healthy employee is a productive employee. Stress in the workplace affects an employees' mental state. An employee that is stressed is unable to function and think properly and is prone to make many mistakes. This will affect the employee's level of performance, which will gradually decrease. An organisation that supports organisational team sport, will reduce the costs related to high turnover, withdrawal and low productivity as well as costs for health insurance due to stress-related illnesses (Sagrestano, Heavey & Christensen 1998).

Sport has significant health advantages. If employees are healthier and happier, they will work towards increased productivity and better quality of work (Maruhn 2004). In a study done by Joubert and De Beer (2010), it was found that participants who take part in sport hold advantages for an organisation since they contract fewer sicknesses and are absent from work less often . A

calculation was done in the said study that an organisation would save millions a year if it could bring the absenteeism down by 5%.

The benefits of sport for an organisation

Sawer (2007) conducted a study for Standard Chartered Bank and found that employees who participate in sport flourish better in their work than employees who do not participate in sport. Sawer (2007) further found that employees who do participate in sport are motivated to enhance the organisation's productivity and performance.

Participation in sport recognises differences through performance. When employees are able to work together despite their differences, they will contribute towards the organisation's success and productivity (Joubert, 2012; Swanepoel, Erasmus & Schenk 2008). A harmonious culture is developed through employees who participate in sport because sport increases employees' morale and spirit. Stronger relationships between the participants are also forged, which further increases their morale (Joubert & De Beer 2011; Joubert, 2012).

Sport enhances work/life balance

There is a growing interest among practitioners and academics about the importance of work /life balance. Work/life balance is defined as a satisfied and excellent functioning at work and at home with minimum role conflict (Clark 2000). It therefore means that if the demands from work and demands from home are mutually incompatible, conflict will arise (Sturges & Guest 2004).

Non-participating employees and family are "part of the team" because they are spectators and encourage the participants in their sport. The energy

and goodwill which is generated through joint interaction and support ensure that participants feel that they are more valued and willing to be more engaged in work demands after a sport event (Chandler 2006; Joubert 2012). Support from family and friends enhance the work / life balance of a person who participates in sport.

According to Shephard (1995), physical activity not only holds health benefits for an adult person, but also brings with it a tendency towards enhancement of the mood state and relief of anxiety, especially among people who are anxious or depressed. People who are able to control their anxiety are able to cope better with their work/life demands. Therefore, to obtain a healthy work/life balance, it is crucial that employees engage in after-hours socialisation, excel in sports talk or participate in sports activities (Bacik & Drew 2006).

SCALE DEVELOPMENT

Focus group and individual interviews

Focus group and individual interviews were conducted which enabled the researchers to develop an Organisational Team Sport Scale (OTSS). The interviews identified potential issues which could be included in the scale and detailed information regarding sport in organisations was obtained. Employees participating in sport were invited to attend a focus group interview and sport coordinators were invited to attend an individual interview. About nine focus group interviews and nine individual interviews were conducted. The groups were facilitated by an experienced facilitator and the interviews covered a range of issues which were identified from the literature. These included the benefits of organisational team sport interventions for the employee and for the organisation. Each interview was recorded on audio-tape and transcribed

verbatim. The data was analysed by the researcher using Tesch's (1990) qualitative data analysis method and main themes and subthemes were identified. Questions were generated based on the literature review and themes and subthemes were identified from the interviews (Joubert, 2012). A draft scale was developed which focused on six areas, namely (1) information; (2) relationship between participants; (3) physical activity; (4) work/life balance; (5) benefits of sport for the employee; and (6) benefits of sport for the organisation.

Factor analysis

Factor analysis is often used in scale or test development and evaluation (Pallant 2010:181). The developer starts with a large number of scale or test items and, by using factor analysis, reduces them to a smaller number of coherent subsets (Pallant 2010: 181). This is known as exploratory factor analysis. Factor analysis and principal component analysis (PCA) are both techniques to reduce the number of variables to a smaller subset of variables based on variability in the patterns of correlations (Pallant 2010:181–2). Factor analysis is often used to refer to a whole family of techniques, which include PCA (Pallant 2010:182).

A very important criterion when deciding on the use of factor analysis is the number of respondents as well as the ratio between items and respondents (Hair, Black, Babin & Anderson 2010). The general opinion of these authors is that the number of respondents should not be fewer than 200 (Meyers, Gamst & Guarino 2013) and that 200 are considered to be fair. Hair *et al.* (2010) regard five items per respondent as the lower limit. Hair *et al.* (2010) as well as Meyers *et al.* (2013) indicate that the decision on the cut-off value of the factor loading should also be based on sample

size, with minimum loading of .4 to 45 in a study with around 200 respondents.

Cronbach's alpha coefficients and interim correlations were used to determine the validity and reliability of the constructs measured in the OTSS. Cronbach's alpha determines the internal consistency of a test or scale and is articulated as a number between 0 and 1 with adequate measuring values of Cronbach's alpha range from 0.70 to 0.95 (Tabachnick & Fidel, 2007).

RESULTS

An exploratory factor analysis of the 53 items of the OTSS was performed on the data of 209 respondents. Prior to running

the analysis with IBM SPSS, the data were screened by examining descriptive statistics on each item, inter-item correlations, and possible univariate and multivariate assumption violations. From the initial assessment, all variables were found to be interval-like, variable pairs appeared to be bivariate, were normally distributed, and all cases were independent of one another.

Because of the relatively small sample size (209), the variables-to-cases ratio was deemed marginal (4:1). The Kaiser-Meyer-Olkin measure of sampling adequacy and the Bartlett's test of sphericity were performed to determine the suitability for factor analysis.

Table 1: Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.90
	Approx. Chi-Square	6359.24
Bartlett's Test of Sphericity	Df	1378
	Sig.	.000

The Kaiser-Meyer-Olkin measure of sampling adequacy was .90, indicating that the present data were suitable for principal component analysis. Similarly, Bartlett's test of sphericity was significant at $p = .000$, indicating sufficient correlation between the variables to proceed with the analysis.

The K1 rule was used in conjunction with the scree plot to determine the number of factors. The Kaiser's criterion focusing on eigenvalues larger than 1 (Pallant 2010:184) was performed and is reported in table 2.

Table 2: Eigenvalues larger than 1 and explanation of variance

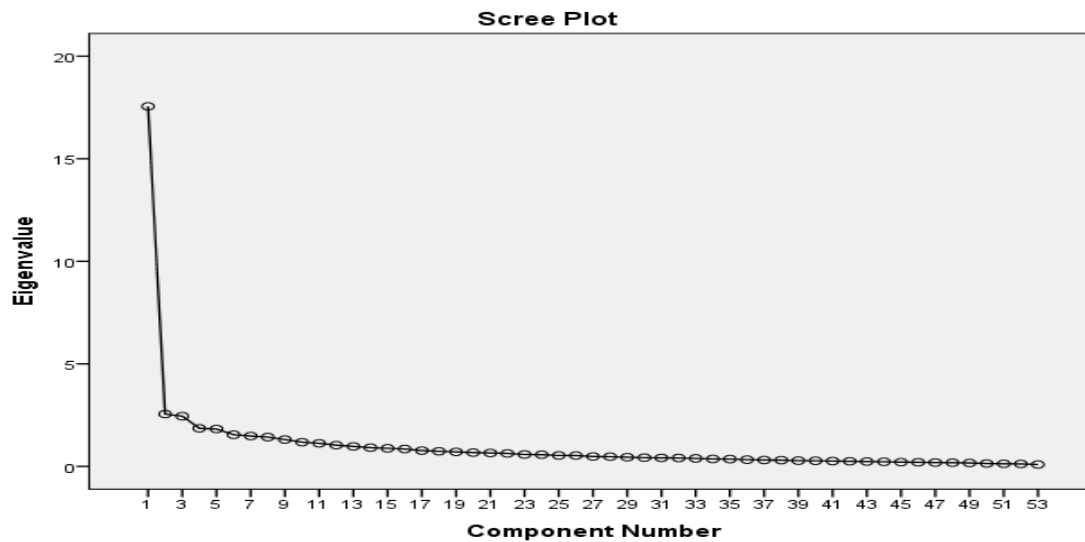
Component	Initial Eigenvalues			Extraction sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	17.55	33.12	33.12	17.55	33.12	33.12
2	2.55	4.82	37.93	2.55	4.82	37.93
3	2.45	4.62	42.55	2.45	4.62	42.55
4	1.86	3.50	46.05	1.86	3.50	46.05
5	1.82	3.44	49.49	1.82	3.44	49.49
6	1.55	2.92	52.41	1.55	2.92	52.41

7	1.48	2.79	55.20	1.48	2.79	55.20
8	1.43	2.69	57.90	1.43	2.69	57.90
9	1.31	2.47	60.36	1.31	2.47	60.36
10	1.18	2.23	62.59	1.18	2.23	62.59
11	1.13	2.12	64.72	1.13	2.12	64.72
12	1.03	1.95	66.67	1.03	1.95	66.67

A total of 12 factors had eigenvalues greater than 1.00, cumulatively accounting for 66.67% of the total variance. Catell's scree test, which is

focused on retaining the factors before the break (elbow rule; Pallant 2010: 184), was performed and the results are reported in figure 1.

Figure 1: Catell's scree plot



It is evident that the elbow flattens off after the 5th factor. The Monte Carlo parallel analysis simulation technique was utilised in order to determine the number of factors that account for more variance than the components derived from random data. The eigenvalues obtained from the actual data are

compared to the eigenvalues obtained from the random data. If the actual eigenvalues from the principal component analysis from the actual data are greater than the eigenvalues from the random data, the factor is retained. The results are reported in table 3.

Table 3: Results of the Monte Carlo parallel analysis

Component number	Actual eigenvalues from PCA	Criterion value from parallel analysis	Decision
1	17.55	2.15	accept
2	2.55	2.03	accept

3	2.44	1.94	accept
4	1.86	1.87	accept
5	1.82	1.80	Accept
6	1.54	1.74	Reject

The results of the Monte Carlo parallel analysis yielded a five-factor model. The first five factors accounted for 49.5% of the total variance.

correlations between the pairs of factors were in excess of .4 (see table 4), strongly suggesting the appropriateness of an oblique rotation strategy; thus, promax rotation was used.

Based on the subscales (factors) that are said to comprise the OTSS, many

Table 4: Component correlation matrix

Component	1	2	3	4	5
1	1.00				
2	.54	1.00			
3	.44	.44	1.00		
4	.46	.49	.24	1.00	
5	.42	.42	.27	.33	1.00

Extraction method: principal component analysis

Rotation method: promax with Kaiser normalization.

A promax rotation indicated that the factors are correlated between .24 and .54, with an average correlation of .41. The structure coefficients from the

promax rotation are presented with subscales constructed based on the organisation shown in table 5.

Table 5: Factor loadings (promax rotation) and the descriptive statistics and communalities of the items

Factor 1: Coping skills/goals achieved

Q #	Description	Mean	SD	Factor loading	Communalities
8	Individuals who participate in sport take a more creative approach to work.	3.70	.96	.63	.63
9	Individuals who participate in sport are more motivated at work.	3.83	.94	.68	.67
16	Trust is established more easily between individuals who participate in sport and their colleagues or customers.	3.76	.95	.60	.62

18	Individuals who participate in sport have more close friends than those who do not participate in sport.	3.83	1.05	.53	.55
23	Sport gives all the participants equal opportunities.	3.81	.94	.54	.51
24	Individuals who participate in sport have fewer preconceived ideas about other cultures than their peers in general.	3.61	1.08	.59	.74
25	Individuals who participate in sport are less prejudiced towards other people than their peers in general.	3.55	.99	.55	.72
26	Sport enhances an individual's ability to develop talents that will enhance their performance at work.	3.94	.90	.74	.68
27	Sport enhances an individual's common knowledge.	3.92	.90	.67	.67
28	Individuals who participate in sport are competitive; participating in sport makes them more ambitious.	4.12	.90	.65	.65
30	Individuals who participate in sport are more committed and dedicated in their work environment compared to their peers in general.	3.63	1.06	.68	.62
31	Individuals who participate in sport appreciate the importance of punctuality.	3.94	.95	.61	.73
34	Individuals who participate in sport are more self-assured.	4.06	.93	.63	.66
49	Individuals who participate in sport are able to complete their tasks in time.	3.82	.97	.71	.68
50	Individuals who participate in sport get emotional support from their team members.	4.02	.91	.67	.62
51	Individuals who participate in sport are better able to handle problems.	3.79	.97	.71	.67
52	Individuals who participate in sport can discuss their problems with their team members.	3.84	.95	.59	.62
53	Individuals who participate in sport can get advice from their team members regarding any problem they may experience.	3.93	.90	.55	.68

Factor 2: Friends/able to work in a team

Q #	Description	Mean	SD	Factor loading	Communalities
10	Individuals who participate in sport build productive relationships with clients.	3.83	1.00	.64	.66
11	Sport enhances the ability to understand individual differences	3.88	.94	.65	.73
12	Individuals who participate in sport are better able to accommodate individual differences.	3.80	.94	.67	.72
13	Individuals who participate in sport are more accepting of individual differences.	3.75	.98	.57	.78
14	Sport enhances the ability to communicate easily with colleagues/other people.	4.01	.89	.63	.58
15	Individuals who participate in sport use conversations about sport as an ice-breaker when meeting new colleagues/people.	3.93	.97	.62	.66

17	Individuals who participate in sport find it easier to make new friends.	4.23	.92	.70	.68
19	Trust is one of the values of individuals who participate in sport.	3.77	1.00	.53	.67
20	Respect is one of the values of individuals who participate in sport.	3.99	.95	.58	.67
21	Individuals who participate in sport find it easier to work in a team.	4.21	.90	.73	.69
22	Individuals who participate in sport prefer to work in a team.	3.92	1.01	.63	.51
29	Sport places all participants on the same level, regardless of their position in the hierarchy at work.	4.20	.98	.69	.73
32	Individuals who participate in sport are used to giving their best, thus making the team more successful.	4.17	.86	.63	.71

Factor 3: Physical activity/health

Q #	Description	Mean	SD	Factor loading	Communalities
35	Participating in sport benefits an individual's health.	4.48	.86	.63	.72
36	Individuals who are physically active are more productive.	4.22	.86	.63	.60
37	Individuals who are physically active cope better with stress.	4.22	.88	.69	.70
38	Individuals who are physically active are healthier.	4.42	.86	.76	.69
39	Individuals who are physically active are more energetic.	4.47	.83	.78	.77
40	Individuals who are physically active live longer.	4.07	1.02	.64	.68
41	Individuals who are physically active can handle their daily activities more easily, such as climbing stairs and carrying heavy shopping bags.	4.35	.95	.73	.65

Factor 4: Improve production

Q #	Description	Mean	SD	Factor loading	Communalities
1	Individuals who participate in sport are more productive in their workplace than those who do not participate in sport.	3.84	1.09	.69	.75
2	Individuals who participate in sport experience an improved mood, which makes them more productive than those who do not participate in sport.	4.04	.91	.58	.69
3	Sport contributes to the skill of setting clear objectives and targets, unlike those who do not participate in sport.	3.75	.95	.74	.65
4	Individuals who participate in sport overcome obstacles that might otherwise prevent them from attaining their goals.	3.53	1.07	.57	.68

5	Sport enhances the ability to work in collaboration with colleagues, unlike those who do not participate in sport	4.02	1.07	.71	.68
6	Individuals who participate in sport find it easy to network with colleagues.	4.19	.95	.59	.68
7	Individuals who participate in sport are constantly seeking new and better ways of doing things.	3.84	.97	.60	.65

Factor 5: Work/life balance

Q #	Description	Mean	SD	Factor loading	Communalities
42	Individuals who participate in sport involve their families during sports events.	3.63	1.04	.63	.79
43	Individuals who participate in sport are better able to divide their time among sport, family and work.	3.86	.89	.71	.64
44	A sports event is an opportunity to bring the whole family together.	3.88	1.02	.73	.68
45	If individuals who participate in sport need to attend a sports event, the organisation is very flexible in accommodating this need.	3.63	1.09	.69	.65
46	Individuals who participate in sport maintain a reasonable balance between work and life.	3.92	.90	.67	.53
47	Individuals who participate in sport can cope with the demands at work more easily.	3.85	.92	.54	.68
48	Individuals who participate in sports events are able to take their minds off the day-to-day demands of life for a while.	3.95	.86	.53	.69

The results of the factor analysis with regard to the OTSS are summarised in table 5. A factor loading cut-off point of 0.5 for inclusion in the interpretation of a factor was used. Fifty two of the 53 variables (items) loaded on the five factors. F₁: **Coping skills / achieve goals** had 18 items, F₂: **Friends / able to work in a team** had 13 items, followed by F₃: **Physical activity / health**, F₄: **Improve production** and F₅: **Work / life**

balance with 7 items each. The communalities of the five factors, as reported in table 5, are in most cases relatively high.

The descriptive statistics as well as the internal consistency of each of the subscales as assessed by coefficient alpha is shown in table 6.

Table 6: Descriptive statistics, Cronbach's alpha coefficient and inter-item correlations of the OTSS

Factor	Weighted average (/ 5)	s	Skewness	Kurtosis	α
F ₁ Coping skills / achieve goals	3.86	.62	-.82	2.04	.92
F ₂ Friends / able to work in team	3.98	.62	-1.20	2.94	.89
F ₃ Physical activity / health	4.32	.66	-1.52	3.39	.86
F ₄ Improve production	3.88	.68	-1.03	2.35	.81
F ₅ Work / life balance	3.82	.67	-.62	.68	.82

The descriptive statistics in table 6 show that the outstanding factor is F_3 (**physical activity / health**), which is deduced from the high weighted average (4.32). The skewness and kurtosis values of the factors do not exceed the critical values of 2.00 and 7.00 respectively (Glynn & Woodside 2009; West, Finch & Curran 1995), which is an indication that the data is normally distributed. The majority of the values of the factors on the skewness scale were negative, ranging between -.82 and -1.52, which is an indication that the distribution has relatively few small values and tails off to the left. The Cronbach's alpha coefficients of the factors are acceptable if the guideline of $\alpha > 0.70$ (Nunnally & Bernstein 1994) is applied. It would thus appear that the factors possess acceptable levels of internal consistency.

DISCUSSION

In this study, an *organisational team sport scale* (OTSS) was developed based on literature and previous studies by Joubert and De Beer (2010; 2011)

Five factors were extracted, namely *Coping skills / achieve goals*; *Friends / able to work in a team*; *Physical activity / health*; *Improve production* and *Work / life balance*. These factors or dimensions support the model of Joubert and De Beer (2010; 2011). The factor designations and their definitions were chosen on the basis of the items loaded on the various factors, as well as similar factors used by other researchers and which are contained in the literature. The factors are defined as follows:

- *Coping skills / achieve goals* entails trust between employees, be friends with one another, are committed, are not prejudiced or have no preconceived ideas about their peers. Employees are able to work together in a team. This will help them to

achieve the organisational goals. When a team achieves organisational goals, they will be more self-assured, the team will be able to complete their tasks in time, give emotional support to other team members and be able to handle their problems.

- *Friends / able to work in a team* is the degree to which employees are able to accommodate and accept individual differences. It is easier for friends to communicate with one another and to trust and respect one another. Team members who are friends will work together and this will make an organisation more productive.
- *Physical activity / health* entails that employees are less absent from work. Physical activities are the most effective disease prevention behaviours for an employee.
- *Improve production* is the degree to which an employee is able to improve his or her mood and to set clear targets and objectives. Employees who are able to overcome obstacles are able to network and work in collaboration. This will contribute towards the organisation's productivity. In our ever changing world, it is important that employees are constantly seeking for better and new ways of doing things, which will give an organisation a competitive advantage.
- *Work / life balance* entails that employees are able to divide their time among work and life. Sport enables individuals to involve their families because families could be spectators and supporters during sport activities. Many organisations are flexible to accommodate sport

participants because sport participants are healthier and have less stress, which will result in less absenteeism. Sport is also a stress-reliever which will help employees to cope with their demands at work more easily.

All the factors reported satisfactory psychometric properties.

RECOMMENDATIONS AND LIMITATIONS

The industry now has a context-specific and standardised OTSS, which can be applied in organisations and sectors in order to identify, to address and to measure the value of sport within the work environment using suitable interventions.

This study has certain shortcomings that should be taken into consideration. A

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cross-sectional design was used, with the result that no link could be determined between variables (over a period of time). The measurement also depends on self-reporting, which was not verified by means of objective criteria. Finally, the population consisted of only 209 participants at the 13th Southern African University Staff Sport Association (SAUSSA) games, which is not representative of the total population.

The results of this study, which was based on a validated instrument, should be further analysed to determine differences between demographic groups, sporting codes and other variables measured in the study.

A similar study could be carried out in future using a larger sample, which would increase the generalisability of the results.

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