

NORMS FOR THE SPORT COMPETITION ANXIETY TEST (SCAT)

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ABSTRACT

The Sport Competition Anxiety Test (SCAT) is a useful consultation tool for sport psychologists. A shortcoming of its use is the lack of norms for sport codes not popular in North America, for example, rugby, cricket, field hockey and netball. In this investigation the SCAT was administered to 1799 athletes over a period of approximately 15 years. The data collected over this period have been used to produce norms for additional sport codes.

Key words: Anxiety; SCAT; Sport competition anxiety.

INTRODUCTION

The effect of anxiety on sport performance can be extremely negative. In order to help athletes deal with this, sport psychologists would benefit from having an instrument to measure the tendency to perceive competitive situations as anxiety provoking. The *Sport Competition Anxiety Test (SCAT)* was introduced by Martens *et al.* (1990) to measure trait anxiety in sport. The SCAT is a 15-item questionnaire in which respondents indicate how they typically feel during competitive situations.

In order to reduce response bias the authors named the test the *Illinois Competition Questionnaire* instead of the *Sport Competition Anxiety Test*. In addition, to eliminate the tendency of social desirability five questionnaire items are spurious.

The original SCAT was developed according to the guidelines of the American Psychological Association (1974) as set out in its *Standards for Educational and Psychological Tests and Manuals*. The questionnaire was intended for children between the ages of 10 and 15 years. An adult form of the test was later introduced (Martens *et al.*, 1990). The latter version was used in the current research.

The SCAT was administered and validated mostly in North America. This resulted in a lack of norms for sports traditionally played outside the USA (United Kingdom, Europe, Australia, ect.), such as rugby, cricket and netball. The purpose of this study was to fill this void as well as to provide additional norms for other sports not available elsewhere, such as waterpolo, golf, squash, synchronised swimming, etc.

METHOD

Subjects

The SCAT was administered over a period of approximately 15 years to individual sport psychology clients, sport groups and sport science students who participated in competitive sports. The mean age of the sample was 20 years with a range of 15 to 25 years. The total

sample consisted of 1805 respondents of which 55% (998) were males and 45% (807) were females. The vast majority of the respondents were white. Definite data on the racial composition of the sample are not available because the athletes who completed the SCAT were for ethical reasons not required to state their race.

Research instrument

The adult version of the SCAT (See appendix for English and Afrikaans versions) was used. The SCAT's reliability was assessed by test-retest and analysis of variance procedures. Martens *et al.* (1990) found a mean test-retest score of .77 with a range of .57 to .93. These are considered acceptable levels of reliability.

The Afrikaans version was translated from the original version by a qualified translator and retranslated by another professional translator to ensure that the both versions were identical in meaning.

Martens and Gill (1976) claimed support for the construct validity for the SCAT. This finding was later re-affirmed by significant relationships between competitive A-trait as measured by SCAT and other well-established personality constructs (Martens *et al.*, 1990). These included, amongst others, the *Trait Anxiety Inventory for Adults (TAI)* of Spielberger *et al.* (1970).

Procedure

Only 10 questionnaire items are scored. The range of scores for the SCAT can fall between 10 and 30.

Items 2, 3, 5, 8, 9, 12, 14 and 15 are scored as follows:

Hardly ever = 1 *Sometimes* = 2 *Often* = 3

Items 6 and 11 are scored in reverse order, namely:

Hardly ever = 3 *Sometimes* = 2 *Often* = 1

RESULTS

The median SCAT raw scores for the total South African sample ($N = 1805$) was 22 for both males and females (See table 1). In the case of the males this does differ from the USA median (21) reported by Martens *et al.* (1990). However, in the case of the female respondents the median raw score of the USA sample was 20 in comparison with the South African sample score of 22.

TABLE 1: SCAT PERCENTILES FOR COLLEGE/UNIVERSITY ATHLETES

SCAT Score	USA Males ($N = 80$)	RSA Males ($N = 998$)	USA Females ($N = 443$)	RSA Females ($N = 807$)
30	97	98	99	98
29	93	96	98	94
28	93	93	96	92
27	88	88	93	87

26	82	82	90	79
25	77	76	86	72
24	70	70	82	66
23	63	63	77	59
22	56	54	69	52
21	51	45	62	42
20	43	37	53	33
19	34	28	43	25
18	27	22	34	20
17	21	16	25	14
16	16	10	18	8
15	8	7	14	5
14	4	4	10	3
13	2	2	6	1
12	1	1	3	0
11	0	0	1	0
10	0	0	0	0

Track and field yielded the highest median score of 24 for both male and female athletes. Soccer recorded the lowest median score of 19 (See table 2).

TABLE 2: MEDIAN SCAT SCORES FOR DIFFERENT SPORTS

Track and field (Males)	24
Track and field (Females)	24
Cross country running	23
Swimming	22
Waterpolo	22
Volleyball	22
Tennis	21
Netball	21
Golf	21
Synchronised swimming	21
Gymnastics	21
Rugby	21
Badminton	21
Hockey (Males)	21
Hockey (Females)	21
Cricket	20
Squash	20
Cycling	20
Soccer	19

Tables 3 to 7 represent the percentiles for swimming, tennis, soccer, track and field, rugby, field hockey, rugby, cricket, netball, waterpolo, badminton, gymnastics, squash, and golf. Where applicable the USA norms are also shown for the purpose of comparison. Table 8 contains the percentiles of sport codes (cycling, volleyball, synchronised swimming, cross

country running) with sample sizes less than 30. Because of the small sample size these norms should be viewed with caution.

TABLE 3: SCAT PERCENTILES FOR SWIMMING AND TENNIS

SCAT Score	Swimming		Tennis	
	USA (N = 121)	RSA (N = 66)	USA (N = 92)	RSA (N = 163)
30	99	95	98	100
29	99	91	95	98
28	98	89	94	92
27	96	77	91	88
26	93	72	83	81
25	88	68	74	78
24	79	60	68	71
23	68	53	60	64
22	61	48	54	54
21	53	35	50	46
20	40	26	44	33
19	29	14	33	24
18	22	9	25	20
17	18	8	21	17
16	13	5	18	14
15	7	0	16	9
14	3	0	13	6
13	2	0	8	2
12	1	0	4	1
11	1	0	1	0
10	0	0	0	0

TABLE 4: SCAT PERCENTILES FOR SOCCER

SCAT Score	USA (N = 303)	RSA (N = 31)
30	99	100
29	99	100
28	99	97
27	98	95
26	96	93
25	94	87
24	92	83
23	90	73
22	86	72
21	81	67
20	73	60
19	66	50
18	60	43
17	53	33

16	44	27
15	36	23
14	28	13
13	20	10
12	12	3
11	6	2
10	2	0

TABLE 5: SCAT PERCENTILES FOR TRACK AND FIELD AND FIELD HOCKEY

SCAT Score	Track and Field		Field Hockey	
	Males (N = 69)	Females (N = 81)	Males (N = 44)	Females (N = 191)
30	97	99	100	98
29	87	96	100	96
28	79	91	95	94
27	71	85	94	92
26	68	74	93	87
25	57	55	92	84
24	50	46	88	77
23	39	39	77	67
22	32	33	63	61
21	25	21	60	51
20	21	16	49	41
19	13	11	40	32
18	9	10	35	27
17	5	6	23	19
16	4	5	16	12
15	4	0	12	8
14	3	0	10	6
13	3	0	2	3
12	2	0	0	1
11	0	0	0	0
10	0	0	0	0

TABLE 6: SCAT PERCENTILES FOR RUGBY, CRICKET, NETBALL AND WATERPOLO

SCAT Score	Rugby (N = 430)	Cricket (N = 105)	Netball (N = 119)	Waterpolo (N = 32)
30	97	100	100	100
29	96	98	97	98
28	95	97	96	87
27	98	93	88	84
26	83	92	82	81
25	79	86	75	71
24	71	80	69	61
23	66	73	64	58

22	53	66	59	52
21	44	57	49	45
20	34	50	41	42
19	27	41	36	32
18	21	31	27	19
17	14	19	19	6
16	10	13	13	1
15	7	9	8	0
14	4	5	7	0
13	2	4	5	0
12	1	2	3	0
11	0	1	0	0
10	0	0	0	0

TABLE 7: SCAT PERCENTILES FOR BADMINTON, GYMNASTICS, SQUASH AND GOLF

SCAT Score	Badminton (N = 44)	Gymnastics (N = 39)	Squash (N = 63)	Golf (N = 69)
30	100	97	100	99
29	95	95	95	94
28	91	92	90	93
27	88	84	81	91
26	84	82	79	90
25	81	76	74	84
24	77	66	73	81
23	67	58	69	69
22	56	55	63	60
21	49	45	53	46
20	44	42	48	38
19	30	32	39	32
18	28	19	29	22
17	19	6	19	19
16	7	1	8	10
15	5	0	5	7
14	3	0	4	2
13	0	0	3	1
12	0	0	2	1
11	0	0	0	0
10	0	0	0	0

TABLE 8: SCAT PERCENTILES FOR CYCLING, VOLLEYBALL, SYNCHRONISED SWIMMING AND CROSS COUNTRY RUNNING

SCAT Score	Cycling (<i>N</i> = 20)	Volleyball (<i>N</i> = 20)	Synchro (<i>N</i> = 23)	X Country (<i>N</i> = 25)
30	100	100	100	100
29	100	97	100	100
28	100	95	95	98
27	100	92	91	86
26	100	84	77	75
25	95	63	68	63
24	89	53	66	58
23	87	51	64	50
22	74	50	59	46
21	63	49	45	44
20	26	32	41	33
19	16	21	23	25
18	13	18	18	17
17	11	16	16	13
16	9	13	13	4
15	8	11	11	3
14	5	5	5	1
13	3	3	2	0
12	0	0	0	0
11	0	0	0	0
10	0	0	0	0

DISCUSSION

On inspection there are not apparent major differences between the median scores of the different sport codes. The exception, however, was track and field. Both male and female athletes recorded median scores of 24 compared to the median score of the total sample of 21. However, the significance of these differences was not statistically calculated as this was not the purpose of this study.

The top three median scores were recorded in individual sports (track and field, cross country running, and swimming). The three main team sports of rugby, netball and field hockey recorded the same median scores of 21.

The purpose of this study was to present norms for sports other than those that are popular in North America. The SCAT is a useful tool in a sport psychologist's consultation with athletes and these additional norms should contribute to its effective use.

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APPENDIX

ILLINOIS COMPETITION QUESTIONNAIRE

Surname:
Age:

Name:
Sport:

Below are some statements about how people feel when they compete in sport. Read each statement and decide if you **Hardly ever**, or **Sometimes**, or **Often** feel this way when you compete. There are no right or wrong answers. Make a tick in the appropriate block. Do not spend too much time on any one statement. Remember to choose the word that describes how you usually feel when competing in sport.

1. Competing against others is socially enjoyable.
Hardly ever [] *Sometimes* [] *Often* []
2. Before I compete I feel uneasy.
Hardly ever [] *Sometimes* [] *Often* []
3. Before I compete I worry about not performing well.
Hardly ever [] *Sometimes* [] *Often* []
4. I am a good sport when I compete.
Hardly ever [] *Sometimes* [] *Often* []
5. When I compete I worry about making mistakes.
Hardly ever [] *Sometimes* [] *Often* []
6. Before I compete I am calm.
Hardly ever [] *Sometimes* [] *Often* []

7. Setting a goal is important when competing.
Hardly ever [] *Sometimes* [] *Often* []
8. Before I compete I get a queasy feeling in my stomach.
Hardly ever [] *Sometimes* [] *Often* []
9. Just before I compete I notice my heart beats faster than usual.
Hardly ever [] *Sometimes* [] *Often* []
10. I like to compete in games that demand considerable physical energy.
Hardly ever [] *Sometimes* [] *Often* []
11. Before I compete I feel relaxed.
Hardly ever [] *Sometimes* [] *Often* []
12. Before I compete I am nervous.
Hardly ever [] *Sometimes* [] *Often* []
13. Team sports are more exciting than individual sports.
Hardly ever [] *Sometimes* [] *Often* []
14. I get nervous waiting to start the contest.
Hardly ever [] *Sometimes* [] *Often* []
15. Before I compete I get uptight (tense).
Hardly ever [] *Sometimes* [] *Often* []

ILLINOIS KOMPETISIE-VRAELYS

Van:

Naam:

Ouderdom:

Sport:

Hieronder volg 'n aantal stellings oor hoe mense voel wanneer hulle kompeteer in sport. Lees elke stelling en besluit of jy **Feitlik nooit**, **Soms** of **Dikwels** so voel wanneer jy in sport kompeteer. Maak 'n regmerk in die betrokke blokkie. Daar is geen korrekte of verkeerde antwoorde nie. Moenie te veel tyd aan enige stelling bestee nie. Onthou om die woorde te kies wat beskryf hoe jy gewoonlik voel wanneer jy kompeteer in sport.

1. Om teen ander persone te kompeteer is sosiaal genotvol.

Feitlik nooit [] *Soms* [] *Dikwels* []

2. Voordat ek kompeteer voel ek ongerus.

Feitlik nooit [] *Soms* [] *Dikwels* []

3. Voordat ek kompeteer is ek bekommerd dat ek nie goed sal presteer nie.

Feitlik nooit [] *Soms* [] *Dikwels* []

4. Ek openbaar 'n goeie sportgees wanneer ek kompeteer.

Feitlik nooit [] *Soms* [] *Dikwels* []

5. Wanneer ek kompeteer is ek bekommerd dat ek foute sal maak.

Feitlik nooit [] *Soms* [] *Dikwels* []

6. Voordat ek kompeteer is ek kalm.

Feitlik nooit [] *Soms* [] *Dikwels* []

7. Die stel van 'n mikpunt is belangrik tydens kompetisies.

Feitlik nooit [] *Soms* [] *Dikwels* []

8. Voordat ek kompeteer kry ek 'n gevoel van naarheid op my maag.

Feitlik nooit [] *Soms* [] *Dikwels* []

9. Net voordat ek kompeteer merk ek op dat my hart vinniger as gewoonlik klop.

Feitlik nooit [] *Soms* [] *Dikwels* []

10. Ek hou daarvan om aan spele deel te neem wat aansienlike fisieke energie vereis.

Feitlik nooit [] *Soms* [] *Dikwels* []

11. Voordat ek kompeteer voel ek ontspanne.

Feitlik nooit [] *Soms* [] *Dikwels* []

12. Voordat ek kompeteer is ek senuagtig.

Feitlik nooit [] *Soms* [] *Dikwels* []

13. Spansport is meer opwindend as individuele sport.

Feitlik nooit [] *Soms* [] *Dikwels* []

14. Ek raak senuagtig wanneer ek wag vir die kompetisie om te begin.

Feitlik nooit [] *Soms* [] *Dikwels* []

15. Voordat ek kompeteer raak ek gespanne.

Feitlik nooit [] *Soms* [] *Dikwels* []