ANXIETY EFFECTS ON INTERVENTIONS PERFORMANCE TIME AND ACCURACY AMONG AMATEUR PLAYERS: IMPLICATION FOR COUNSELLING EDUCATION

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Abstract

Anxiety is a general problem that affects members of the society especially when an individual is battling with performance time and accuracy in a task. It takes many forms and therefore requires so many intervention programmes like the cognitive anxiety intervention and somatic intervention programmes that could be used on participants with dominant anxiety. This paper therefore investigated cognitive anxiety intervention programmes on participants (amateur players) with dominant anxiety response to the competitive state anxiety interventory -2. This was modified to include a directional scale. Interventions were randomly administered in a counterbalanced order 10 min before each performance trial on a test. The dominantly cognitive anxious group (n = 17), the dominantly somatic anxious group (n= 17), and the non-anxious control intervention group (n = 14) completed a baseline performance trial. The second and third trials were completed with random administration of brief cognitive and somatic interventions. The non-anxious control group (n = 13) completed three trials with no intervention. A mix-mode1, Group x Treatment multivariate analysis of variance indicated significant (P<=13) changes in cognitive anxiety intensity and somatic anxiety intensity not in state anxiety direction (P>0.05), or performance time or accuracy (P>0.05). At the end, conclusion was made with a discussion on some of the practical counseling implications. This was followed with some recommendations to enhance facilitating and relaxation of amateur players to suit the circumstances in which time is limited

Keywords: Time, accuracy, cognitive anxiety, somatic anxiety, intervention

Introduction

The phenomenon of anxiety though a psychological construct has generated great interest among scholars and researchers worldwide. With this, there has also been disagreement on the generally acceptable definition and presentation. Fundamentally, anxiety is a state of psychological dissonance arising from apprehension or dread about something (Nwankwo, 2010). It could be natural, rational and also useful in leading a person to deal constructively with a situation.

Anxiety may arise from internal or external experiences which end up in an emotional state. This emotional state is described by Iruloh & Amadi (2008) to of uneasiness, dread and distress. It could also be cognitive or somatic, having to do with physical and mental thought processes, with its consequent effects on intervention, performance, time and accuracy among amateur players, the cognitive intervention programme on participants is needed.

A look at the inverted-U Hypothesis also called the Yerkes Dodson Law states that as somatic and cognitive anxiety increases, performance tends to increase until a certain point. Once arousal increased move more than this point, performance will decrease (Brain, 2015). The multi dimensional theory in McNally (2002) based on the distinction between somatic and cognitive anxiety predicts a negative linear relationship of which the somatic anxiety should decline once performance begins although cognitive anxiety may remain low. The catastrophe theory had it that stress combined with somatic and cognitive anxiety will affect each athlete differently as performance will be effected in a unique way which will make it difficult to predict an outcome using general rules (McNally, 2002)

Furthermore, the optimum arousal theory states that each athlete performs at their best only if their level of anxiety falls within an optimum functioning zone (Hanin, 2003). Lastly in the anxiety performance relationship theories, the drive theory has it that if an athlete is both skilled and driven by somatic and cognitive anxiety, then the athlete will perform well.

With all stated above, there are so many state anxiety measurement tools which could be used in measuring anxiety. However, the most commonly used tool according to Raudsepp & Knit (2008) is the Competitive State Anxiety inventory-2 (CSAI-2) invented by Omar. However, Anxiety direction emerged as a stronger predictor of anxiety performance than anxiety intensity, with elite athletes reporting similar anxiety intensity but more facilitative anxiety direction than their non-elite counterparts (Clones Swain, 1995).

Anxiety is an emotion that treats an athlete's performance (Hanton, 1999), because athletes with debilitative anxiety were hypothesized to have negative expectancies in their ability to cope, which might impair their performance, whereas athletes to have positive expectancies, which might enhance their performance (Jones, 1995) due to the intensity of anxiety symptoms.

Other sport experts and counseling educators said some athletes exhibiting complex facilitative and debilitative feeling states, when anxiety is a negative feeling based on the addition of a negative direction score in the modified CSAI-2 anxiety

Although cognitive restructuring has been used to improve the debilitative interpretations of competitive swimmers (Hanton & Jones, 1999), most matching hypothesis studies anxiety-reduction interventions. Therefore the purpose of this study was to investigate anxiety reduction interventions to reduce the anxiety of

participants and the skill test performance of amateur players in the southeast of Nigeria.

Hypotheses

H_1: There will be a significant different in cognitive intensity for participants in the cognitive anxiety group being administered

H2: There will be significant difference intensity for participants in the somatic anxiety group being administered a somatic intervention.

Methodology

Institutional ethical approval was granted for the study and participants provided written informed consent.

Participant

The participants comprised 80 amateur male soccer players aged I8 years (mean 31.6, S.D= 6.3) from the southeast of Nigeria. All were relatively homogeneous in terms of ability and had competed for a number of years. It should be noted that more participants were recruited than indicated by the power analysis to ensure a minimum of 20 participants in each of four groups (two experimental and one control: dominantly cognitive anxious; dominantly somatic anxious; and non—anxious control intervention).

Instruments

A post-test questionnaire was used to evaluate how well participants responded to and adopted the interventions. This was administered to a subsample of 12 participants (mean age 32.6 years, S.D 5.9). Three items were used to assess responses to Brief Progressive Muscular Relaxation and three equivalent items responses to the Quiet Place Technique. There was also an open-ended question for each of the two interventions, which asked participants to comment on how they felt the intervention impacted on their physical and mental state.

Measure

Modified CSAI-2R, to assess multidimensional anxiety, a directional scale was added to the revised CSAI-2 to distinguish between anxiety and other emotional states. The modified CSAI-2R contained 17 items that tapped the three subscales of cognitive to facilitate mathematical transformations. Additionally, as the three anxiety components contained a different number of items, each component score was divided by the number of items and multiplied by 10 to aid cross-component comparison.

Cronbach alpha values for the CSAI-2R were ≥ 0.80 for all anxiety intensity components, while confirmatory factor analysis results indicated that, the CSAI-2R has greater psychometric integrity than the original CSAI-2: comparative index 0.95.

Experimental study

The concentration Grid has been proposed to require considerable attentional control without acting as an anxiety-reduction technique (Harris & Harris, 1984).

Accordingly, it was used as a "filler" in present study to guard against possible carryover effects. It contains a IC) x 10 grid of randomly located numbers between 00 and 99, and starting with a randomly assigned number, participants had 5 mm to cross off as many consecutive numbers as possible in ascending order.

Participants completed three stages. In stage 1, they completed the modified CSAI-2R 10 min before the soccer skill test and were allocated to one of four groups based on their scores. Participants who scored greater (i.e. more negative) debilitative cognitive anxiety direction were placed in the cognitive group (CD_G). Participant who scored greater debilitative somatic anxiety direction, were placed in the somatic group (SD_G). Those who scored non-debilitative (i.e. zero or positive) cognitive anxiety direction and non-debilitative somatic anxiety direction were allocated equally to either the control group (C_G) or the control intervention, group (CI_G). Participants were then administered the Concentration Grid to minimize any possible anxiety-priming effects emanating from completion of the modified CSAI-2R. They then completed the first of three skill test trials during which performance time and accuracy were recorded. This was followed by a 3-min rest period before the start of stage 2.

In Stage 2, participants from all four groups were administered the Concentration Grid to guard against possible carryover effects. Participants in the cognitive group, somatic group, and the control intervention group were randomly administered the cognitive intervention or the somatic intervention via a personal stereo. Participants from the control group were not exposed to any intervention. For participants in all four groups, the second modified CSAI-2R was administered immediately to assess any anxiety intensity and anxiety direction changes, and was completed 10 min before the second trial of the soccer skill test.

Following a 3—mm rest period, in Stage 3 the participants followed the same procedure as in Stage 2, with one exception: participants from the cognitive group, somatic group, and the control intervention group were administered the opposite intervention to that in Stage 2. That is, if they were administered the cognitive intervention in Stage 2, they were administered the somatic intervention in Stage 3, and vice versa. Finally, the Intervention Evaluation Questionnaire was administered to a subsample of the main sample.
Data analysis

The mean values of the Intervention Evaluation Questionnaire and responses to open-ended questions were assessed to monitor participants perceived impact of the interventions. Using one-way repeated-measures analyses of variance (ANOVA), no significance differences were observed in performance time

Results

Table 1: Descriptive statistics for anxiety dependent variables

	CD_G		SD_G		C_G		CI_G	
	Mean	S	Mean	S	Mean	S	Mean	S
CI_B	21.76	7.24	18.35	5.40	13.69	2.43	15.71	7.18
SI_B	13.53	2.48	14.79	5.20	11.43	2.18	15.00	5.76
SCI_B	24.59	5.42	24.12	8.01	28.00	5.77	30.86	6.69
CI_G	17.29	7.07	14.00	5.00	15.23	3.70	13.86	5.29
SI_G	12.52	2.23	10.92	1.33	13.74	2.51	11.43	1.94
SCI_G	26.59	7.24	26.59	8.51	27.54	5.30	31.14	6.69
CI_S	15.53	5.81	14.24	4.18	15.69	5.28	14.14	4.61
SI_S	12.69	3.03	10.92	1.51	13.52	3.23	11.12	1.87
SCI_S	27.65	4.70	26.35	8.50	27.38	6.24	31.43	7.58
CD_B	30.71	5.24	39.88	7.92	46.31	6.32	52.29	9.11
SD_B	39.75	6.78	33.11	4.61	48.13	6.89	53.27	9.03
SCD_B	48.59	7.44	53.41	8.54	53.54	6.79	58.29	9.07
CD_C	34.00	10.44	39.29	11.40	46.46	5.95	51.86	10.00
SD_C	37.06	7.22	35.88	10.98	44.40	6.61	51.63	9.82
SCD_G	51.76	8.63	54.24	11.00	51.85	4.93	57.14	8.90
CD_S	36.94	11.12	39.06	12.45	45.69	9.41	51.43	9.56
SD_S	39.66	6.95	34.29	11.78	42.42	4.82	51.84	12.41
SCD_S	52.82	6.71	53.41	10.83	51.08	9.37	58.00	10.58
PT_B	183.06	32.03	180.76	21.65	174.31	16.52	167.79	18.05
PA_G	39.06	6.83	42.24	6.08	41.54	7.1	43.36	5.77
PT_C	178.82	28.19	180.24	19.48	172.85	16.95	167.07	20.86
PA_C	42.53	7.19	44.12	6.42	42.77	5.25	45.14	8.95
PT_S	178.82	27.95	181.53	16.72	173.31	16.21	167.43	18.17
PA_S	38.59	7.63	43.71	4.81	42.77	6.81	44.55	5.6

A summary of the Group x Treatment ANOVA is presented in Table 11. Box's test of equality of covariance matrices could not be computed, as there were fewer than two non—singular cell covariance matrices. Accordingly, the Pillai's Trace omnibus statistic was used in preference to Wilks' lambda (Tabachnick & Fidehl, 2007, p. 269). The omnibus statistic indicated a significant interaction effect (Pillai's Trace =0.61, F15(72 1.57, P<0.05, 0.10), with 10% of the variance in anxiety and performance measures being accounted for by the experimental manipulations.

Table II: Summary of mixed-model ANOVA results

Dependent variables		F(d.f)	P	η^2	OP
Cognitive intensity (CI)	Group x	4.22 (5,91)	0.002	0.18	0.94
	Treatment	1.97 (3.57)	0.130	0.09	0.48
	Group	9.19 (2.91)	0.001	0.14	0.95
	Treatment				
Somatic Intensity (SI)	Group x	5.47 (4.73)	0.001	0.22	0.96
	Treatment	0.38 (3.57)	0.766	0.02	0.42
	Group	7.12 (1.73)	0.006	0.11	0.82
	Treatment				
Self-confidence intensity (SCI)	Group x	1.26 (6.114)	0.281	0.06	0.48
	Treatment	2.18 (3.57)	0.100	0.10	0.53
	Group	2.98 (2.114)	0.055	0.05	0.57
	Treatment				
Cognitive direction (CD)	Group x	1.71 (6.114)	0.126	0.08	0.63
	Treatment	13.52 (3.57)	0.000	0.42	0.99
	Group	0.50 (2.114)	0.607	0.01	0.13
	Treatment				
Somatic direction (SD)	Group x	2.19 (4.78)	0.077	0.10	0.65
	Treatment	16.12 (3.57)	0.000	0.46	0.99
	Group	1.63 (1.78)	0.207	0.03	0.28
	Treatment				
Self-confidence direction (SCD)	Group x	1.61 (6.114)	0.150	0.08	0.60
	Treatment	2.05 (3.57)	0.118	0.10	0.50
	Group	0.11 (2.114)	0.900	0.00	0.07
	Treatment				
Performance time (PT)	Group x	0.57 (5,90)	0.714	0.03	0.20
	Treatment	1.30 (3,57)	0.282	0.06	0.33
	Group	1.24 (2,90)	0.288	0.02	0.24
	Treatment				
Performance accuracy (PA)	Group x	0.46 (6.114)	0.817	0.02	0.48
	Treatment	2.21 (3.57)	0.097	0.10	0.53
	Group	2.27 (2.114)	0.108	0.04	0.45
	Treatment				

(CD_G) and the control group (C_G). A significant difference ($P < 0.05$) in cognitive direction was also observed between the cognitive group (CD_G) and the control intervention group (CI_G). Further significant group differences were found between the somatic group (SD) and the control intervention group (CI_G).

For somatic direction the Group x Treatment interaction was not significant ($F_{4,78}$ =2,19, P>0.05, n^2 =0.10) and sphericity was violated (W= 0.531, e=0.682, P<0.001). There were no significant treatment effects ($F_{1,78}$ =1.63, P >0.05, n^2 =0.03) but there were significant group effects ($F_{3,57}$ =16.12, P<0.00l, , =0.46). Pairwise comparisons indicated a significant difference (P < 0.001) between the cognitive group (CD_G) and the control group (CI_G), between the somatic group (SD_G) and the control group (SD_G) and between group (SD,) with the control intervention group (GI_G).

For self-confidence direction, the Group x Treatment interaction was not significant ($F_{0,114}$ = 1,61   P>0.05, 72=0,08), and there were no significant treatment effects ($F_{2,114}$ =0.90) or group effects (F3,57 =2.05, P>0.05, ,2 =0,10).

Table III: Intercorrelation between the modified CSAI-ZR subscales and performance scores

Dependent variables	Treatment	CI	SI	SCI	CD	SD	SCD	PT
SI	None	0.456						
	Cognitive	0.425						
	Somatic	0.145						
SCI	None	-	-					
	Cognitive	0.136	0.124					
	Somatic	-	-					
		0.128	0.158					
		-	-					
		0.049	0.219					
CD	None	-	0.052	0.422				
	Cognitive	0.173	-	0.314				
	Somatic	-	0.009	0.246				
		0.133	-					
		-	0.082					
		0.246						
SD	None	-	-	0.376	0.626			
	Cognitive	0.178	0.093	0.135	0.721			
	Somatic	-	-	0.042	0.615			
		0.060	0.120					
		-	-					
		0.138	0.137					
SCD	None	-	-	0.713	0.501	0.244		
	Cognitive	0.202	0.128	0.794	0.339	0.106		
	Somatic	-	-	0.793	0.368	0.144		
		0.207	0.251					
		-	-					
		0.176	0.375					
PT	None	0.120	0.008	0.322	0.240	0.251	0.352	
	Cognitive	0.081	0.086	0.218	0.285	0.201	0.191	
	Somatic	0.066	0.061	0.187	0.275	0.236	0.284	
PA	None	0.086	0.102	0.310	0.448	0.128	0.181	0.075
	Cognitive	0.117	0167	0.272	0.167	0.051	0.180	0.328
	Somatic	0.070	0.010	0.208	0.035	0.115	0.091	0.407

Intercorrelations between the modified' CSAI-2R anxiety subscales and the performance scales (Table III) showed that, in general, there were more significant correlations lot' anxiety direction than for anxiety intensity components. Furthermore, self-confidence intensity, self-confidence direction, and cognitive direction yielded more significant relationships. For all participants before the

intervention, performance time (PT$_B$) had weak significant negative correlations with self-confidence intensity (SCI$_B$) and self-confidence direction (SCD$_B$).

Discussion

The most effective reduction in the cognitive intensity component was exhibited for participants in the compatible group being administered on incompatible intervention. Additionally, both treatments resulted in an equal reduction in somatic intensity while the results did not support the matching hypothesis as advocated by Davidson and Schwartz (1976) or the first and second hypotheses due to the emergence of crossover effects. Application of the compatible intervention specifically aimed at reducing one component of anxiety intensity facilitated relaxation through the incompatible component.

In contrast to most studies examining the matching hypothesis, were intentionally not practiced over weeks and it is possible that this contributed to the lack of support. The fact that Terry et al. (1995) also found a dominant crossover effect with brief interventions may suggest that the matching hypothesis might require weeks of intervention practice to be supported. Further suggested that if an incompatible intervention can cause significant crossover effects at the targeted intensity or direction component, this could negate the need for multimodal stress packages.

The lack of any significant support for performance time or accuracy may be attributed to three plausible explanations. Using precompetition measures to investigate actual competition performance could be inaccurate owing to, varying anxiety levels during competition. Second, we employed brief interventions that had not been practiced. Although they have shown significant anxiety intensity improvements, it is feasible that practiced intervention may result in additional improvements which may, in turn, have an effect on certain aspects of performance. Finally, floor or ceiling effects for performance, thus making improvements somewhat difficult to achieve.

Intercorrelations between the modified CSAI-2R anxiety-related and performance components indicated that self-confidence intensity and direction and cognitive direction exhibited the largest number of significant correlations. The top—performing participants were in the control intervention group (Cl0), who exhibited greater self-confidence and more facilitative interpretations of anxiety symptoms. Although these participants did not exhibit debilitative interpretations, somatic intensity exhibited a 23.80% reduction with a cognitive intervention and 25.87% reduction with a somatic intervention, while the control group exhibited a 20.21% and 18.20% increase respectively (see Table I). Accordingly, practitioners working with athletes who exhibit facilitative interpretations of anxiety symptoms might consider a brief intervention that appears likely to elicit significant benefits.

Consequently, there would have been a risk of a type I or type II error. For cognitive and somatic intensity components, adopting the second perspective in this study would find support for the matching hypothesis. However, adopting the first and second perspective would not find support for the same components.

Therefore, there is the possibility that previous studies that found support without adopting all two perspectives may have failed to accept the matching hypothesis if they had adopted all two. Furthermore, there is a question concerning whether it is appropriate to compare results between studies that adopt different perspectives, It is not believed that there is a function for adopting one perspective over another, rather that all perspectives should be considered to ensure the correct conclusion.

Conclusion
The present findings indicate that practitioners with only a limited timeline available (e.g. 7 mm) can achieve significant reductions in cognitive and somatic intensity among athletes when using, brief interventions. Although the findings did not indicate the effects of the matching order of the crossover effects.

Counseling implications
In considering the findings of this investigation/study, the results of this study revealed a need for a number of practical implications for guidance counselor.
One of the rewards for overcoming anxiety effects among participants is the development of confidence. The counselor should educate these amateur players who are engaged in sports on how to be free from anxiety while engaging in sports. This will be through the development of confidence which will improve their self-esteem, and in turn, the amateur players will perceive themselves and the world around them positively. This development will reduce unnecessary use of doping and other defense mechanism to enhance the players' state during performance. On the other hand, participants can now develop adequately and relate with peers without inhibitions and be able to resolve conflicts

It is a known fact that depression weakens functioning of the entire human system and as much, players who are depressed may not recover quickly. Counselors therefore should teach these participants relaxation techniques and also how to practice extensively before going into the competition to decrease anxiety and depression in the field and other social interaction.

An individual who is able to create a connection with other people has a greater chance of getting the opportunity they are striving for. Therefore government should help these participants/amateur players by establishing and finding counseling unit/centres at various football academies, camps, etc at both the community, state and national levels and employ professional counselors to head these units. This would help build and develop positive self concept that would help these participants see football sports positively and be able to interact significantly to facilitate adequate adjustment to interpersonal relationships. This development will also help participant players to develop high self concept and a good sense of well being.

In a classroom situation, there is an underlying belief that performance of each student represents the extent he/she is motivated. In other words, it implies that performance is caused by motivation. If motivation is increased, performance will correspondingly increase and if motivation is decreased, there will be a corresponding decrease in performance. Therefore, attention of participants/

amateur players should be drawn to professional counselors for proper guidance and counseling towards gaining adequate motivation to boost their ego and develop confidence. This can be through the internet, music and movies messages. As a result of the fact that cognitive anxiety deals with specific thought processes, the counselor will help the participants/amateur players by planning and designing strategies, therapies special techniques to facilitate, resolve amateur players problems (for instance fear, worry, personal adjustment, mental health, etc). This will encourage the participants to always think highly of themselves and carry a positive and optimistic countenance if they must be happy and well adjusted in the profession

Recommendations

Bases on the conclusion of the study, it is recommended that the crossover effects experienced for participants receiving brief interventions suggest that their use may be just as adequate as a multimodal or a compatible intervention. Therefore, practitioners need to be mindful of the fact that possible detrimental effects of the crossover phenomenon may occur due to changes in identical levels that could inhibit an athlete from attaining their optimal performance state. Thus, we do not advocate the adoption of brief intervention indiscriminately; however, such intervention is capable of facilitating the relaxation of amateur athletes and would be suited to circumstances in which time is limited

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