

Examining the relationship between anxiety and sports performance

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The ability to cope with pressure and anxiety is an integral part of sports, particularly among elite athletes (Hardy, Jones & Gould 1996). With anxiety being such an important aspect of sports performance it has been extensively researched. This research has produced a discrepancy in the operational definition of anxiety, with terms such as stress, anxiety and arousal being used interchangeably throughout.

Inverted U Hypothesis

Yerkes and Dodson (1908) developed their theory, calling it the Inverted U Hypothesis.

As the diagram suggests for every type of behaviour there exists an optimal level of arousal (usually moderate) that produces an optimal performance. Levels of arousal positioned on this bell shaped graph either above or below this optimal point are said to generate an inferior performance from the athlete. Also the further the arousal level is from the optimal point the worse the performance is said to be.

Again this theory was produced as a result of mainstream psychological research and so its validity with relation to sports performance has been questioned (Hardy & Fazey 1987; Neiss 1988). Not only has the validity been questioned but also the face validity of the shape of the curve has been questioned. It has been suggested that it would be unrealistic to assume that once performers become over aroused and performance declines then a reduction in arousal to a previous level will regain optimal performance (Hardy & Fazey 1987)

This theory has been heavily criticised by almost all contemporary psychologists, in both sports and mainstream areas. The Inverted U Hypothesis offers little in the way of explanation as to why performance is impaired at arousal levels above and below the optimal level (Landers 1980); it's over simplification of the effect of anxiety (Hardy & Fazey 1987); and its lack of empirical support (Neiss 1980).

Recent approaches to the arousal-performance relationship have been characterised by general dissatisfaction with the use of arousal as a one dimensional concept (Hockey et 1986) due to its incapacity to account for the highly differentiated patterns of arousal accompanying the primary emotions (Posne & Rothbart 1986).

As stated previously, anxiety is not a one-dimensional concept, it has many components, which can stand-alone or combine with each other to produce the state, which is commonly referred to as anxiety. The Inverted U Hypothesis fails to recognise the significance of any of the components by suggesting that arousal is a unidimensional concept.

Contemporary research has completely disregarded this theory on the unidimensional issue alone. It has been demonstrated through extensive research that anxiety is multidimensional in that it comprises of cognitive, physiological and behavioural components (Lacey 1967).

This lack of empirical support and intense criticism leaves the Inverted U Hypothesis with very little weight in the area of sporting performance anxiety.

IZOF

One of the criticisms made about the Inverted U Hypothesis not stated was that fact that this theory was proposed as a universal predictor of the effect of anxiety on sporting performance. That is, it does not take into consideration individual differences between each performer. Researchers attempted to account for these differences through the concept of Individual Zones of Optimal Functioning commonly called IZOF (Hanin 1980).

Hanin's theory suggests that each performer has their own specific zone of optimal state anxiety in which their best performance will occur. Each individual's zone is identified by the repetitive use of a central measuring instrument (STAI) and observations. The basis of this theory lies within the Inverted u hypothesis, the only differences between the two being that the state anxiety does not always fall at the mid point of the bell shape graph, and that the optimal level of anxiety is not at one single point but is assigned to a bandwidth on the graph.

Although extremely similar to the Inverted U Hypothesis the IZOF theory does actually have support from contemporary sports psychologists. Gould and Krane (1992) found the IZOF hypothesis to provide a useful practical tool for athletes and sport psychologists and that the overall idea seems to be realistic. Also it has been found that this defined optimal anxiety zones exist for elite male and female distance runners (Morgan, O'Connor, Ellickson & Bradley 1988)

Criticisms of this theory reflect that of the Inverted U Hypothesis, the fact it is a unidimensional approach to anxiety and again offers no underlying explanation for why anxiety affects performance inside and outside of the zone of optimal functioning (Gould & Krane 1992)