

Effect of Neuroticism on Frustration Tolerance Capacity of Male Competitive Road Cyclists: A Correlational Study

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Abstract

The present study aims to find out the effect of neuroticism on the frustration tolerance capacity of national-level competitive male road cyclists. To conduct the study, 25 male players from a national-level 20 km road cycling event were selected. The age range was 18 to 30 years. Purposive sampling was used for the selection of subjects. Reactions to Frustration Scale prepared by Dixit and Shrivastav (2011) was used to assess frustration tolerance capacity in male players of national level 20km road cycling event while the neuroticism dimension of personality was assessed through the Hindi version of the PEN inventory prepared by Menon (1978). A significant positive correlation was observed between neuroticism and frustration tolerance capacity of national male 20 km. road cyclist. Since a lower score on the frustration tolerance scale indicates better tolerance to frustrating situations, the results show that an increase in neurotic tendencies also leads to inferior frustration tolerance capacity of male competitive road cyclists. It was concluded that neuroticism also considered as emotional stability significantly affects frustration tolerance capacity with more emotional stability enhancing the frustration tolerance capacity of national male players of a 20 km road cycling competition.

Keywords: Neuroticism, frustration tolerance, 20 km road cycling

Introduction:

Road cycling is an Olympic event which was started in 1896 in Athens. After some gap, it was reintroduced in the Stockholm Olympics with the inclusion of a time trial. In 1984 Los Angeles Olympics competition for women started. There is no denying the underlying importance of physical fitness in road cycling events but some other factors also affect outcome and psychological factors also play a role in it. In scientific studies, the significance of psychological factors in sports performance has been highlighted under the umbrella of sports psychology. Like any other sport, psychological factors may be possible determinants of sports performance in 20 km competitive road cycling event. Since 20km road cycling requires an athlete to face various physical and environmental adversities and situations, frustration tolerance becomes important.

Normal cognitive development also involves learning how to tolerate frustration. Frustration happens when something blocks a person from achieving a goal, and this can be caused by internal or external factors. In sports, frustration might arise due to injuries, a referee's decision, failed tactics, mistakes by teammates, or personal errors. According to Rosenweig (1944), frustration tolerance is the ability to cope with frustration without losing mental balance or reacting inappropriately. Being able to handle frustrating situations calmly is important for making continuous efforts toward achieving goals. It means staying composed without losing temper or emotional control. Frustration tolerance and psychological resilience may seem similar but are different. According to Friberg et al. (2005), frustration tolerance is a part of personality, while resilience relates to personality traits. Studies by Li and Li (2014) and He and Chen (2021) highlight that people with high frustration tolerance cope better, staying calm and balanced even under stress. It involves managing emotional and physical challenges without negative reactions, helping maintain emotional stability, flexible thinking, and adaptive behaviour in tough situations. Hence frustration tolerance may have a link with emotional stability or neuroticism.

Eysenck's research suggested that behaviour and personality are structured in a hierarchy, with specific responses at the bottom and broader personality types at the top. In 1975, he introduced the PEN model, which highlighted the influence of biological factors on personality. According to Waude (2017), the model focuses on three key traits: psychoticism, extraversion, and neuroticism. Initially developed in the 1960s, it later evolved into the Eysenck Personality Questionnaire (EPQ). High neuroticism indicates a tendency toward depression and anxiety. This response is triggered by the sympathetic nervous system and can be observed through signs like sweating, muscle tension, increased heart rate, or cold hands. According to Eysenck, individuals with highly

reactive, intense, and easily triggered emotions tend to be moody, touchy, anxious, and restless, representing the unstable or neurotic personality type. Conversely, those with more stable emotions are calm, even-tempered, and dependable, characteristic of the stable personality type.

REVIEW OF LITERATURE

Jaffer and Rajpal (2017) in their study found that sports participation has a positive impact on frustration tolerance capacity with secondary school athletes showing more magnitude of tolerance towards frustrating situations as compared to students non-athletes.

Mishra and Rajpal (2018) in their study found that problem-solving capacity and sports achievement are significant predictors of the frustration tolerance capacity of male kabaddi players.

Shrigiriwar (2019) in their study analysed the impact of psychoticism on frustration tolerance in female athletes. It was found that the psychoticism dimension of personality was negatively but significantly correlated with the frustration tolerance capacity of female athletes. The study concluded that an increase in psychotic tendencies leads to a decrease in the frustration tolerance capacity of female athletes.

Spindler et al. (2018) assessed the performance of cyclists in the light of their psycho-cognitive capabilities. They found mood states, self-confidence, focus, attention and executive cognitive function as significant predictors of cycling performance.

Cesanelli et al. (2024) in their study found that the probability of winning a cycling race is around 20% based on the ranking of talented junior players. They concluded that ranking does not always predict the outcome of the road cycling event.

Piepiora et al. (2024) in their study reported low neuroticism / high emotional stability in elite athletes as compared to athletes at different competition levels.

Objective of the Study

To assess the association between neuroticism and frustration tolerance capacity in national male 20km road cycling players.

Hypothesis

It was hypothesized that the neuroticism dimension of personality will be significantly correlated with the frustration tolerance capacity of national male 20km road cycling athletes.

Methodology

Sample :

To conduct the study, 25 male players from national-level 20 km road cycling event were selected. The age range was 18 to 30 years. Purposive sampling was used for the selection of subjects.

Tools

Frustration Tolerance Scale

In the present study frustration tolerance in national male players of 20km road cycling event was assessed by the Reactions to Frustration Scale developed by Dixit and Shrivastava (2011). This scale comprises 40 items and evaluates frustration tolerance across four dimensions: aggression, resignation, fixation, and regression. The test demonstrates a reliability coefficient of 0.79. A lower score indicates a higher level of frustration tolerance.

PEN Inventory

Hindi version of Eysenck's PEN inventory prepared by Menon et al (1978) was used to assess neuroticism in selected subjects. This Hindi PEN inventory is highly reliable and valid.

Procedure

25 male players from the national level 20 km road cycling event were selected and frustration to tolerance scale and Hindi version of PEN inventory was administered. The responses were scored as numerical values and tabulated. Pearson correlation coefficient was computed and results are presented in Table 1 and Figure 1.

RESULT AND DISCUSSION

Table 1

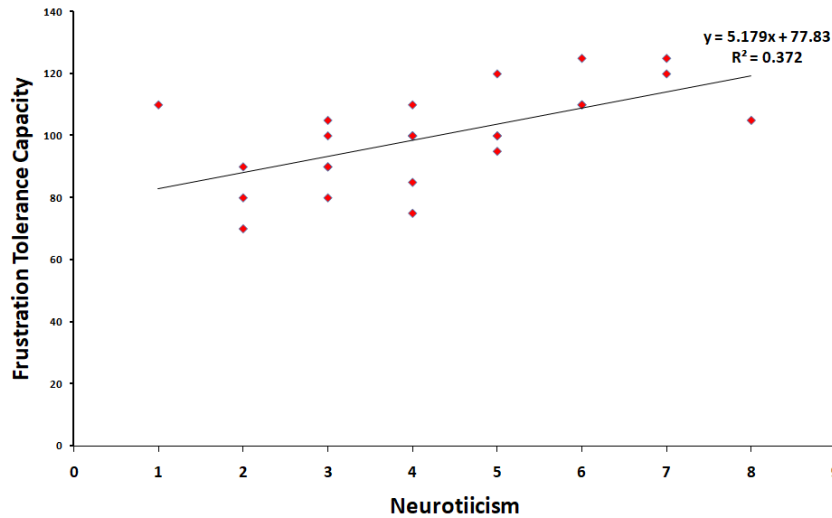
Correlation Matrix of Variables Neuroticism and Frustration Tolerance Capacity in a Group of National Male 20km Road Cycling Athletes

	Neuroticism	Frustration Tolerance Capacity
Neuroticism	1	0.61**
Frustration Tolerance Capacity	0.61**	1

** p<.01

Figure 1

Neuroticism and Frustration Tolerance Capacity in National Level Male 20km Road Cycling Athletes



The Pearson Correlation $r = 0.61$ between neuroticism dimension of personality and frustration tolerance capacity of national male 20 km road cycling athletes at 0.01 level of statistical significance. Although the correlation was positive, its interpretation is different because scores at the lower end of the neuroticism scale reflect emotional stability and similarly lower the score higher the frustration tolerance capacity, hence as neurotic tendencies increase frustration tolerance capacity gets reduced. The coefficient of determination $R^2 = 0.372$ as shown in Fig. 1 indicates that the neuroticism dimension of personality creates a 37.2% variance in the frustration tolerance capacity of selected athletes.

This finding is consistent with Eysenck's personality theory, and according to the theory of Eysenck high levels of neuroticism is linked to emotional stability, easily stressed, and struggle to handle frustration. They are more likely to experience mood swings, anxiety, and impulsive reactions when under pressure, which lowers their ability to tolerate frustration. On the other hand, those with low neuroticism (emotionally stable) can stay calm, think clearly, and handle challenges better, which improves their ability to cope with frustration. Hence the results of the present study are not surprising.

Conclusion

Based on the results, it was concluded that emotional stability was essential for national male 20km road cyclists to possess good frustration tolerance capacity. It may also be concluded that neurotic traits such as anxiety, moodiness and emotional instability may be unfavourable for 20km male road cyclists' tolerance to frustrating situations during competitions.

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