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A comparative examination of emotional maturity between cycling and football players

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Abstract
Study Aim: To ascertain the substantial differences between cycling and football players regarding Emotional Maturity (*viz*., Emotional Stability, Emotional Progression, Social Adjustment, Personality Integration and Independence).
Materials and Methods: Thirty (N=30) subjects between the ages of 18 and 26 took part in the research. They were informed of the study's goal and methodology, and participants willingly participated in the research.
Statistical Analysis: Within the domain of data analysis, an inspection of the data occurred through the application of descriptive statistics and graphical representation. An assessment of the means was conducted through an independent samples t-test. All statistical computations were carried out using SPSS (Statistical Package for the Social Sciences) version 20.0. The significance threshold for hypothesis testing was established at 0.05.
Results: Emotional Stability: The calculated t value is smaller than critical value (0.7732<2.048), so the means are not significantly different at p<0.05 with regards to Emotional Stability between cycling players and football players. Emotional Progression: The calculated t-value is smaller than critical value (1.3302<2.048), so the means are not significantly different at p<0.05 with regards to Emotional Progression between cycling players and football players. Social Adjustment: The calculated t-value is smaller than critical value (0.3749<2.048), so the means are not significantly different at p<0.05 with regards to Social Adjustment between cycling players and football players.
Personality Integration: The calculated t value is smaller than critical value (0.3081<2.048), so the means are not significantly different at p<0.05 with regards to Personality Integration between cycling players and football players. Independence: The calculated t-value is smaller than critical value (0.631<2.048), so the means are not significantly different at p<0.05 with regards to Independence between cycling players and football players.
Emotional Maturity (Total): The calculated t-value is smaller than critical value (0.3061<2.048), so the means are not significantly different at p<0.05 with regards to emotional maturity between cycling players and football players.

Keywords: Emotional maturity, emotional stability, emotional progression, social adjustment, personality integration, independence, cycling, football

Introductions
Psychology is the study of the mind and behaviour. Emotional stability is considered as a multifaceted integrative personality trait based on four main components, emotional (emotional anxiety or arousal), motivational (power of motivation), intellectual (evaluation, prediction, decision-making in extraordinary situations), typological (peculiarities of the nervous system) which determine the performance and adequacy of behaviour of an individual in solving problems under extreme and stressful conditions. The capacity to maintain composure, equilibrium, and consistency in one's emotional reactions is referred to as emotional stability. It entails properly controlling one's emotions, being composed under pressure, and overcoming obstacles in life [1]. After reviewing classic and current conceptions of trait (as measured by questionnaires) and motive (as measured by the Thematic Apperception Test [TAT] or other imaginative verbal behavior), the authors suggest that these two concepts reflect two fundamentally different elements of personality conceptually distinct and empirically unrelated [2]. A central idea in thinking about effective behavior is "organismic integration" which suggests an inclusive phenomenon and suggests also "some form of interaction which takes place among subsystems of the organism more specifically, an interaction which is adaptive or self-enhancing [3].

Coherence and congruence-based measures of personality integration were related to a variety of healthy personality characteristics [4]. The prominent reason for the significant difference in emotional maturity across gender was observed to be a patriarchal system, gender bias, family climate, traditions, and confounding factors [5]. The road to emotional maturity involves the integration of various aspects of personality into the self. The intra- and interpersonal aspects are dealt with from different standpoints (Freud, James, Gardner and others), the emotional aspect being seen not as the opposite of the intellectual, but as complementary to it in the child's and adult's personalities. The self contains everything that has passed through consciousness; it is the most important element of consciousness. Thanks to drives for knowing, for feeling, for creating, which are always active, we achieve a self which is more than the sum of its components and becomes a global factor in our personality [6]. Measures of social adjustment included social acceptance by and aggression with peers. Academic outcomes included math and reading grade point average, classroom behaviour, academic self-esteem, and absenteeism. As expected, the researchers found support for the causal model such that both forms of social adjustment contributed independently to the prediction of each area of academic adjustment [7]. Social adjustment is an effort made by an individual to cope with standards, values and needs of a society in order to be accepted. It can be defined as a psychological process. It involves coping with new standard and value. In the technical language of psychology “getting along with the members of society as best one can" is called adjustment [8]. Emotional maturity is the ability of adolescents to stabilize emotions which include their capability for Emotional progression, Independence, Social adjustment, Emotional stability, Personality integration, etc. General well-being is the subjective well-being. It is related to the physical condition, but not dependent on the physical or physiological system of an individual. Emotional maturity is a process in which the personality is continuously striving for greater sense of emotions, health, both inters physically and intra personally”. Emotional maturity is a state of having reached an adult level of emotional development which implies emotional control in social situation [9]. The term emotional progression describes how feelings evolve and alter in response to different events and stimuli over time [10].

Materials and Methods

Thirty (N=30) subjects between the ages of 18 and 26 took part in the research. They were informed of the study’s goal and methodology, and participants willingly participated in the research.

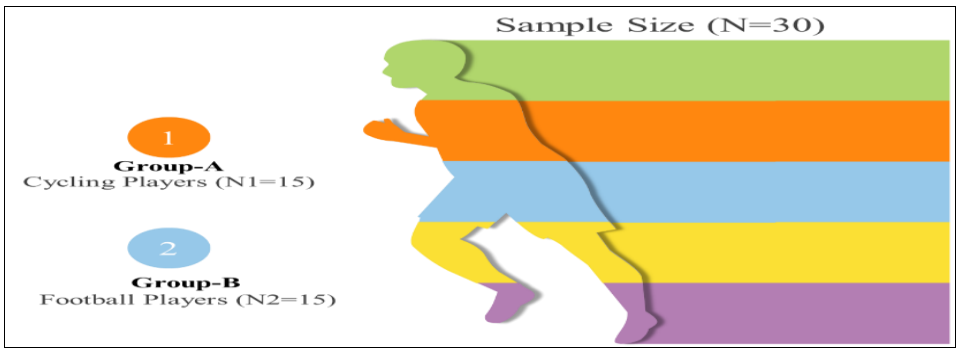

Fig 1: Distribution of subjects.

(a)

(b)

Fig 2: Orientation of subjects for data collection process.

Research Design

It is a research study that uses the method of quantitative data collection and analysis with the aim to find out the significant differences of Emotional Maturity *viz*., Emotional stability, emotional progression, social adjustment, personality integrationand independence between cycling and football players.

Research Question

Table 1: Research question (what?, why? and how?).

What?	Why?	How?
A comparative examination of emotional Maturity between cycling and football players.	To ascertain the substantial differences between cyclists and football players regarding various factors such as Emotional Maturity *viz*., emotional stability, emotional progression, social adjustment, personality integration and independence	An examination of the data within the realm of data analysis was performed by utilizing descriptive statistics and graphical illustration. An evaluation of the averages was executed via an independent samples t-test. All statistical calculations were completed utilizing SPSS (Statistical Package for the Social Sciences) version 20.0. The level of significance for hypothesis testing was set at 0.05.

Variables

Emotional Maturity Scale (EMS) developed by Dr. Yashvir Singh and Dr. Mahesh Bhargava (1999) was utiled.

1. Emotional Stability.
2. Emotional Progression.
3. Social Adjustment.
4. Personality Integration.
5. Independence.
6. Emotional Maturity (Total).

Sampling

The term “purposeful sampling technique” refers to a selective, judgmental, or subjective sampling procedure in which the objects picked for the sample are chosen at the researcher's discretion. Researchers frequently think that by using trustworthy estimate, they may acquire a representative sample while saving time and money" were utilized to choose a certain group of (football and cycling players).

Ethical Considerations

Ethical considerations were duly acknowledged in order to facilitate the execution of this study. During the phases of data collection and presentation within the research, the researcher carefully pondered upon the ensuing principles:

- The principle of autonomy.
- The principle of acquiescence.
- The principle of deliberate articulation of emotions.
- The principle of regulated emotional engagement.
- The principle of privacy The Principle of independence.
- The principle of impartial mindset.

Statistical Analysis

Within the domain of data analysis, an inspection of the data occurred through the application of descriptive statistics and graphical representation. An assessment of the means was conducted through an independent samples t-test. All statistical computations were carried out using SPSS (Statistical Package for the Social Sciences) version 20.0. The significance threshold for hypothesis testing was established at 0.05.

Results

Table 2: Independent samples t-test result of emotional stability between cycling players and football players.

Emotional Stability		
	Cycling Players	**Football Players**
Mean	31.5333	28.4667
Variance	97.9822	137.9822
Stand. Dev.	9.8986	11.7466
N	15	15
T	0.7732	
D.O.F	28	
Critical Value	2.048	
T < Critical Value	☞	No sig. diff.

The calculated t-value is smaller than critical value (0.7732<2.048), so the means are not significantly different at p<0.05 with regards to emotional stability between cycling players and football players.

To find t value and degrees of freedom we will use following formulas:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}}$$

$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)}$$

$$d.o.f = 2n - 2$$

$\overline{X_1}$ = Mean of data for group 1
$\overline{X_2}$ = Mean of data for group 2
$S_{X_1X_2}$ = Grand Standard Deviation
S_{X_1} = Standard deviation of data for group 1
S_{X_2} = Standard deviation of data for group 2
$d.o.f$ = degrees of freedom
n = Total number of values

In this example we have:

$$\overline{X_1} \approx 31.5333$$
$$\overline{X_2} \approx 28.4667$$
$$S^2_{X_1} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{1i} - \overline{X_1}\right)^2 \approx 97.9822$$
$$S^2_{X_2} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{2i} - \overline{X_2}\right)^2 \approx 137.9822$$
$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)} \approx 10.862$$

After substituting these values into the formula for t we have:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}} = \frac{31.5333 - 28.4667}{10.862 \cdot \sqrt{\frac{2}{15}}} \approx 0.7732$$

Table 3: Independent samples t-test result of emotional progression between cycling players and football players.

Emotional Progression		
	Cycling Players	**Football Players**
Mean	32.2	26.1333
Variance	131.2267	180.7822
Stand. Dev.	11.4554	13.4455
N	15	15
T	1.3302	
D.O.F	28	
Critical Value	2.048	
T < Critical Value	☞	No sig. diff.

The calculated t-value is smaller than critical value (1.3302<2.048), so the means are not significantly different at p<0.05 with regards to emotional progression between cycling players and football players.

To find t value and degrees of freedom we will use following formulas:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}}$$
$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)}$$
$$d.o.f = 2n - 2$$

$\overline{X_1}$ = Mean of data for group 1
$\overline{X_2}$ = Mean of data for group 2
$S_{X_1X_2}$ = Grand Standard Deviation
S_{X_1} = Standard deviation of data for group 1
S_{X_2} = Standard deviation of data for group 2
$d.o.f$ = degrees of freedom
n = Total number of values

In this example we have:

$$\overline{X_1} \approx 32.2$$
$$\overline{X_2} \approx 26.1333$$
$$S^2_{X_1} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{1i} - \overline{X_1}\right)^2 \approx 131.2267$$
$$S^2_{X_2} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{2i} - \overline{X_2}\right)^2 \approx 180.7822$$
$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)} \approx 12.4902$$

After substituting these values into the formula for t we have:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}} = \frac{32.2 - 26.1333}{12.4902 \cdot \sqrt{\frac{2}{15}}} \approx 1.3302$$

Table 4: Independent samples t-test result of social adjustment between cycling players and football players.

Social Adjustment		
	Cycling Players	**Football Players**
Mean	29.9333	31.6
Variance	148.9956	147.44
Stand. Dev.	12.2064	12.1425
N	15	15
T	0.3749	
D.O.F	28	
Critical Value	2.048	
T < Critical Value	☞	No sig. diff.

The calculated t-value is smaller than critical value (0.3749<2.048), so the means are not significantly different at p<0.05 with regards to social adjustment between cycling players and football players.

To find t value and degrees of freedom we will use following formulas:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}}$$
$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)}$$
$$d.o.f = 2n - 2$$

$\overline{X_1}$ = Mean of data for group 1
$\overline{X_2}$ = Mean of data for group 2
$S_{X_1X_2}$ = Grand Standard Deviation
S_{X_1} = Standard deviation of data for group 1
S_{X_2} = Standard deviation of data for group 2
$d.o.f$ = degrees of freedom
n = Total number of values

In this example we have:

$$\overline{X_1} \approx 29.9333$$
$$\overline{X_2} \approx 31.6$$
$$S^2_{X_1} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{1i} - \overline{X_1}\right)^2 \approx 148.9956$$
$$S^2_{X_2} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{2i} - \overline{X_2}\right)^2 \approx 147.44$$
$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)} \approx 12.1745$$

After substituting these values into the formula for t we have:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}} = \frac{29.9333 - 31.6}{12.1745 \cdot \sqrt{\frac{2}{15}}} \approx -0.3749$$

Table 5: Independent samples t-test result of personality integration between cycling players and football players.

Personality Integration		
	Cycling Players	**Football Players**
Mean	23.2667	24.4
Variance	92.1956	110.7733
Stand. Dev.	9.6019	10.5249
N	15	15
T	0.3081	
D.O.F	28	
Critical Value	2.048	
T < Critical Value	☞	no sig. diff.

The calculated t value is smaller than critical value (0.3081<2.048), so the means are not significantly different at p<0.05 with regards to personality integration between cycling players and football players.

To find t value and degrees of freedom we will use following formulas:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}}$$

$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)}$$

$$d.o.f = 2n - 2$$

$\overline{X_1}$ = Mean of data for group 1
$\overline{X_2}$ = Mean of data for group 2
$S_{X_1X_2}$ = Grand Standard Deviation
S_{X_1} = Standard deviation of data for group 1
S_{X_2} = Standard deviation of data for group 2
$d.o.f$ = degrees of freedom
n = Total number of values

In this example we have:

$$\overline{X_1} \approx 23.2667$$
$$\overline{X_2} \approx 24.4$$
$$S^2_{X_1} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{1i} - \overline{X_1}\right)^2 \approx 92.1956$$
$$S^2_{X_2} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{2i} - \overline{X_2}\right)^2 \approx 110.7733$$
$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)} \approx 10.0739$$

After substituting these values into the formula for t we have:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}} = \frac{23.2667 - 24.4}{10.0739 \cdot \sqrt{\frac{2}{15}}} \approx -0.3081$$

Table 6: Independent samples t-test result of independence between cycling players and football players.

Independence		
	Cycling Players	**Football Players**
Mean	22.7333	25.1333
Variance	109.2622	107.7156
Stand. Dev.	10.4529	10.3786
N	15	15
T	0.631	
D.O.F	28	
Critical Value	2.048	
T < Critical Value	☞	No sig. diff.

The calculated t-value is smaller than critical value (0.631< 2.048), so the means are not significantly different at p<0.05 with regards to independence between cycling players and football players.

To find t value and degrees of freedom we will use following formulas:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}}$$

$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)}$$

$$d.o.f = 2n - 2$$

$\overline{X_1}$ = Mean of data for group 1
$\overline{X_2}$ = Mean of data for group 2
$S_{X_1X_2}$ = Grand Standard Deviation
S_{X_1} = Standard deviation of data for group 1
S_{X_2} = Standard deviation of data for group 2
$d.o.f$ = degrees of freedom
n = Total number of values

In this example we have:

$$\overline{X_1} \approx 22.7333$$
$$\overline{X_2} \approx 25.1333$$
$$S^2_{X_1} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{1i} - \overline{X_1}\right)^2 \approx 109.2622$$
$$S^2_{X_2} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{2i} - \overline{X_2}\right)^2 \approx 107.7156$$
$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)} \approx 10.4158$$

After substituting these values into the formula for t we have:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}} = \frac{22.7333 - 25.1333}{10.4158 \cdot \sqrt{\frac{2}{15}}} \approx -0.631$$

Table 7: Independent samples t-test result of emotional maturity between cycling players and football players.

Emotional Maturity		
	Cycling Players	**Football Players**
Mean	139.6667	135.7333
Variance	1142.3556	1333.6622
Stand. Dev.	33.7988	36.5193
N	15	15
T	0.3061	
D.O.F	28	
Critical Value	2.048	
T < Critical Value	☞	No sig. diff.

The calculated t-value is smaller than critical value (0.3061 <2.048), so the means are not significantly different at p<0.05 with regards to emotional maturity between cycling players and football players.

To find t value and degrees of freedom we will use following formulas:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}}$$

$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)}$$

$$d.o.f = 2n - 2$$

$\overline{X_1}$ = Mean of data for group 1
$\overline{X_2}$ = Mean of data for group 2
$S_{X_1X_2}$ = Grand Standard Deviation
S_{X_1} = Standard deviation of data for group 1
S_{X_2} = Standard deviation of data for group 2
$d.o.f$ = degrees of freedom
n = Total number of values

In this example we have:

$$\overline{X_1} \approx 139.6667$$
$$\overline{X_2} \approx 135.7333$$
$$S^2_{X_1} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{1i} - \overline{X_1}\right)^2 \approx 1142.3556$$
$$S^2_{X_2} = \frac{1}{n-1}\sum_{i=1}^{n}\left(X_{2i} - \overline{X_2}\right)^2 \approx 1333.6622$$
$$S_{X_1X_2} = \sqrt{\frac{1}{2}\left(S^2_{X_1} + S^2_{X_2}\right)} \approx 35.1854$$

After substituting these values into the formula for t we have:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S_{X_1X_2} \cdot \sqrt{\frac{2}{n}}} = \frac{139.6667 - 135.7333}{35.1854 \cdot \sqrt{\frac{2}{15}}} \approx 0.3061$$

Conclusion

This study sought to compare the emotional maturity of cycling and football players by examining various dimensions such as emotional stability, emotional progression, social adjustment, personality integration, and independence. Utilizing the Emotional Maturity Scale (EMS) and conducting independent samples t-tests, the findings revealed no significant differences between the two groups in any of the dimensions assessed. The results suggest that both cycling and football athletes exhibit similar levels of emotional maturity, indicating that the type of sport may not significantly influence these aspects of personality. Future research could explore additional factors and larger samples to further understand the nuances of emotional maturity in athletes.

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