

Monitoring Stress and Recovery in Youth Rugby Players

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Abstract

Background: Rugby is a full contact sport played between two teams of 15 players on each team. Rugby is related to football because it is played by hand and kicking is also permitted. The ball can be thrown backwards but can be kicked in any direction. The game has powerful moves played by the players to win the match or the session; so a small distraction in the game may cause severe injuries. Several studies have examined intrinsic (injury and age) and extrinsic (physical and psychological stress) risk factors for injuries. Moreover physical stress plays a role in causing injury due to excessive practice session, so psychosocial stress may also plays an important role in causing injuries in players or athletes. Hence, no research that monitors the stress- recovery balances in rugby players.

Aim: To monitor stress and recovery in youth rugby player.

Study Design: Cross sectional observational analysis.

Procedure: Total of 51 youth rugby players between 13-18 years (both male and female) was included in the study based on inclusion criteria. Recovery stress questionnaire for athletes (RESTQ-Sports) was given to the subjects and explanation about the questionnaire has be given they were asked to fill it. The doubts regarding the terminologies in the questionnaire will be explained then and there. According to the answers given, scoring will be done. These scores will be related with the stress and recovery.

Results: Data analysis was done using IBM SPSS version 20 software. The results were analysed with players of stress due to strenuous activity while playing rugby.

Conclusion: From the data results it is evident that recovery has an increased factor than stress among the players. Hence from the study it is suggested that recovery plays a major role among rugby players.

Keywords: Recovery-stress, Injuries and illnesses, Rugby.

I. INTRODUCTION

Rugby is the form of football and it is a full contact sport which originated from England. It is a most powerful hitting sport which is not well known as other intermittent sports like soccer¹. The game is about running with the oval-shaped ball in the hand and it's played between two teams and each team consists of 15 players. The players run around the rectangular field with H-shaped goalposts on each try line. Rugby is popular around the world, played by male and

female players of all ages. In 2014, there were more than 6 million people playing worldwide, of whom 2.36 million were registered players. Rugby is related to soccer because it is played by hand but kicking is permitted. The kicking of the ball can takes place in any direction; it can only be thrown backward and forward and passing is not allowed. Kick starts-play is used to start the game where a kick off from the halfway line is done. Tackle can only be done by the player with the ball. There are many rules in this sport which is related to the different types of rugby played all over the world. Rugby is the third most popular contact sport in the world and the injuries are common in the players. There are more chances of getting injured due to increased prominence on pace, strength, and stamina and chances of injury is more during tackling in the game. Hence, the rates of injuries were between 7 to 18 injuries in 1000 hours and it is increased with the age and the level of qualification of the players, particularly in the starters of the game. 10% to 40% of all injuries were head injuries and concussion. 50% of all injuries occurred during tackling⁵. Playing position, level of experience and starting status are associated with burnout, recovery-stress and mood states in the rugby players⁴. There are a high number of clashes and repeated eccentric forms of muscle contractions occur in this sport which results in the development of fatigue¹. So a small distraction in the game may cause severe injuries. The distractions may be associated with the time loss or with the stress factors and psychological variables. The stress may be a sport and non-sport stress which were experienced by the rugby players. Stress during training days is more than on rest or match days that leads to the stress causing muscular pain, unexplained aches and general weakness² Stress is an emotional or physical feeling of tension. If it is short burst it will have a positive effect, but stress will have an adverse effect on their health for an extended period of time in various ways such as anxiety. Due to anxiety players may have difficulty in concentrating on the game or practice session. Rugby players are exposed to high volume and high-stress while participating in the game due to poor recovery strategies. The monitoring and the management of stress and recovery in the players may lead to decreased involvement in the game, increased risk of injuries and poor health of the players¹. Recovery is regaining of performing

abilities with time and it includes the duration to repair and strengthen the body physically and psychologically. However, the players attain the stress, after the period of time they will tend to recover themselves. The study on the recovery of rugby players in the form of both physiological and psychological stress resulted that mild exercise does not affect the physiological recovery and relaxation has an advantageous effect on psychological recovery³. Recovery-stress can be monitored using a recovery-stress questionnaire for athletes (RESTQ-Sport). This questionnaire has been used in many players such as rowers, soccer players, swimmers, athletes. Recovery- stress were periodically monitored to check the levels of stress and recovery in players for giving them the proper counseling or training for further matches. The first version of the RESTQ-Sport has 6 scales with 38 items which are denoted as RESTQ-86 Sport. Then the in-between version of the first and final version was denoted as RESTQ-85 Sport consisted of RESTQ-48 plus attached with 37 items and RESTQ-72 Sport consists of 19 scales with four items for each scale. The final version was RESTQ-52 Sport 19 scales in that first 12 scales has 2 items and last 7 scales have 4 items for each scale. This questionnaire consists of both sport-specific and nonspecific items¹¹. Several studies were done on the data collections of rugby injuries and others based on giving strengthening exercise or plyometric exercise but there were no other studies related to the stress and recovery strategies of rugby players. So that monitoring the stress and recovery gives a valuable information about the stress percentage in the players and it will be helpful to know whether the player is physically or psychologically stressful or weak according to this proper recovery can be given to the players to attain their normal state Hence this study was articulated to monitor the stress and recovery in the youth rugby players.

Aim of the Study

The aim of the study is to monitor stress and recovery in youth rugby players.

Need of the Study

Stress is the common factor which causes injuries and illnesses in the rugby players as it is a contact sport. There are many studies done on strengthening exercise. But no one has considered about stress and recovery of players in this sport.

Hence the need of the study is to find out the stress and recovery levels on youth rugby players.

II. METHODOLOGY

Study design: Cross sectional observational analysis

Study type: Observational study

Sampling method: Random sampling

Sampling size 51

Study duration: 6 weeks

Study setting: Tamilnadu Rugby Football Union, Chennai.

Inclusion Criteria

Rugby players Age: 13 to 18 years Both male and female

Procedure

Subjects have been selected according to the inclusion criteria of the age group between 13 -18 years and informed consent has obtained from the individuals Each player has been given a Recovery stress questionnaire for athletes (RESTQ-Sport). Explanation about the questionnaire was given and the players were asked to fill the questionnaire. 15 to 20 minutes was given to fill the questionnaire and the doubts regarding the terminologies in the questionnaire have been explained then and there. The questionnaire consists of 19 scales which were separated according to the stress and recovery status. The 19 scales such as general stress, emotional stress, social stress, conflicts/pressure, fatigue, lack of energy, physical complaints, success, social recovery, physical recovery, general well-being, sleep quality, disturbed breaks, emotional exhaustion, injury, being shape, personal accomplishment, self-efficacy, self-regulation. Totally the questionnaire consists of 53 questions and the players don't know that which question belongs to which category. According to the answers given, scoring has been done in the each category.

Outcome Measures

Psychosocial stress: Recovery Stress Questionnaire for athletes (RESTQ-Sport).

Data Analysis

The collected data were tabulated and analyzed by using **IBM SPSS version 20.0 software.**

TABLE 1

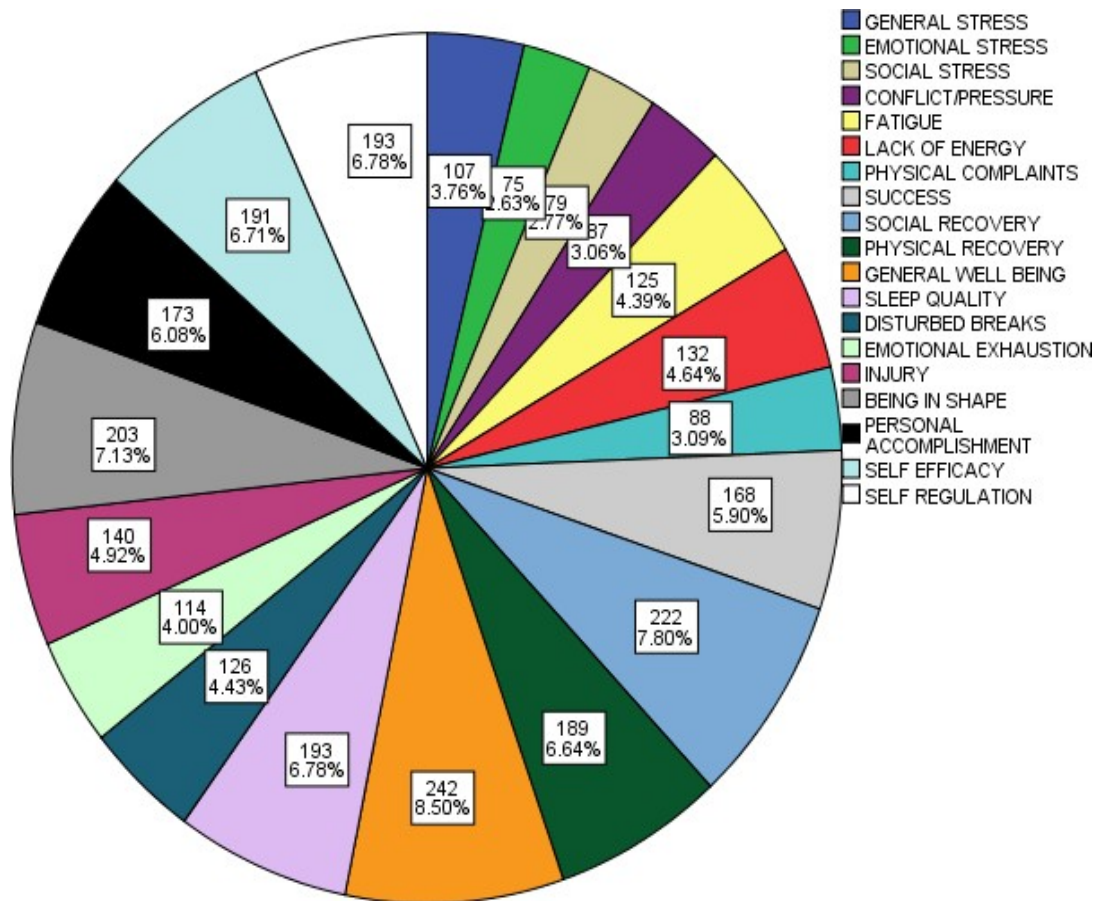
The mean and standard deviation of all the 19 categories of recovery stress questionnaire for athletes (RESTQ-Sport).

CATEGORY	Mean	Std. Deviation	Std. Error Mean
GENERAL STRESS	2.10	1.473	.206
EMOTIONAL STRESS	1.47	.946	.132
SOCIAL STRESS	1.55	1.254	.176
CONFLICT/PRESSURE	1.71	1.221	.171

FATIGUE	2.45	1.390	.195
LACK OF ENERGY	2.59	1.117	.156
PHYSICAL COMPLAINTS	1.73	1.185	.166
SUCCESS	3.29	1.390	.195
SOCIAL RECOVERY	4.35	1.426	.200
PHYSICAL RECOVERY	3.71	1.154	.162
GENERAL WELL BEING	4.75	1.440	.202
SLEEP QUALITY	3.78	1.553	.217
DISTURBED BREAKS	2.47	.946	.132
EMOTIONAL EXHAUSTION	2.24	1.106	.155
INJURY	2.75	1.017	.142
BEING IN SHAPE	3.98	1.334	.187
PERSONAL ACCOMPLISHMENT	3.39	1.168	.163
SELF EFFICACY	3.75	1.412	.198
SELF REGULATION	3.78	1.270	.178

PIE CHART-1

Percentage of stress and recovery according to all the 19 categories of recovery stress questionnaire for athletes (RESTQ-Sport).



III. RESULTS

Table 1 shows the mean of all the 19 categories of recovery and stress in rugby players.

1. General stress has a mean of 2.1 indicating that the players experience the stress sometimes.
2. Emotional stress has a mean of 1.47 indicating that the players experience the stress between seldom and sometimes.
3. Social stress has a mean of 1.55 indicating that the players experience the stress between seldom and sometimes.
4. Conflicts/pressure has a mean of 1.71 indicating that the players experience it between seldom and sometimes.
5. Fatigue has a mean of 2.45 indicating that the players experience it between sometimes and often.
6. Lack of energy has a mean of 2.59 indicating that the players experience it between sometimes and often.
7. Physical complaints have a mean of 1.73 indicating that the players experience between seldom and sometimes.
8. Success has a mean of 2.29 indicating that the players experience the stress sometimes.
9. Social recovery has a mean of 4.35 indicating that the players experience more often.
10. Physical recovery has a mean of 3.71 indicating that the players experience between often and more often.
11. General well-being has a mean of 4.75 indicating that the players experience between more often and very often.
12. Sleep quality has a mean of 3.78 indicating that the players experience between often and more often.
13. Disturbed breaks have a mean of 2.47 indicating that the players experience between sometimes and often.
14. Emotional exhaustion has a mean of 2.24 indicating that the players experience sometimes
15. Injury has a mean of 2.75 indicating that the players experience between sometimes and often
16. Being in shape has a mean of 3.98 indicating that the players experience between often and more often.
17. Personal accomplishment has a mean of 3.39 indicating that the players experience often
18. Self-efficacy has a mean of 3.75 indicating that the players experience between often and more often.
19. Self-regulation has a mean of 3.78 indicating that the players experience between often and more often.

IV. DISCUSSION

The purpose of the study is to monitor the levels of stress and recovery in youth rugby players. The result of the study supports the idea that recovery is more compared to that of stress factors indicating that the rugby player's recovery well after their experience stress. Stress factors may be the cause of injuries in the players. The recovery and stress can be monitored by Recovery Stress questionnaire for athletes

(RESTQ-Sport). The questionnaire was established to monitor the recovery and stress and it has good reliability and validity. The physical and mental stress is mainly caused due to contemporary models of sport injury which reduces perceptual and sensory motor reserves which prevents injury in athletes in turn reduces the training time¹⁸. In this study, 51 subjects participated and questionnaires were given to them to fill and according to their answers scoring was done. The questionnaire was clearly explained. The questionnaire consists of 53 questions which are segregated in 19 categories based on the stress and recovery factors. In this present study, the age group of 13 to 18 years participated. The major risk factors for the stress can be associated with the general stress, emotional stress, social stress, fatigue, physical stress and overtraining. According to statistical analysis of the study it reports that percentage of stress and recovery scales such as general stress 3.76%, emotional stress 2.63%, social stress 2.77%, conflict/pressure 3.06%, fatigue 4.39%, lack of energy 4.64%, physical complaints 3.90%, success 5.90%, social recovery 7.80%, physical recovery %, general well-being 8.50%, sleep quality 6.78%, disturbed breaks 4.43%, emotional exhaustion 4.00%, injury 4.92%, being in shape 7.13%, personal accomplishment 6.08%, self-efficacy 6.71%, self-regulation 6.78%. Studies are required to be done to monitor the stress and recovery in rugby players as they were more prone to injuries due to the hitting activities while playing the game. Hence study on monitoring the stress and recovery was done on the rugby players to know whether the players get recovered after their stress. This study reveals that this group of rugby players have more recovery strategies. The physical and psychological stress is mediated through the same pathway. Athletes who have experienced stressful events have higher compound of stability and diminished intensity for the situational emergency¹⁸. From this study, the players experience stress and at the same time recovered themselves. Lynn Lavallee et al., states that the rugby players with increased anxiety and deprived mood experienced a higher frequency of injury, but the severity injury is low. Hence the rugby players tend to avoid the severe injuries in order to stay in the game. Thus the depressed mood state in rugby players were found to be positive.⁸ Andersen MB and Williams JM state that psychological stress and recovery have a relation with the occurrence of injuries and there is no relation with the components of stress and recovery.¹⁵ Davis JO (1991) and Heil J. (1993) stated that relaxation skills, cognitive restructuring, thought stoppage which are the instruments of psychological interventions may be used in decreasing the occurrence of injury in sports.^{16, 17} Researches in sport psychology should reemphasize psychological interventions that help improve the recovery process in combination with physiological interventions¹⁹.

V. CONCLUSION

This study concludes that rugby players have great recovery from their stress due to over practice sessions for the games. In spite of the strenuous stress they have, with constant training sessions, the stresses among the players are recovered at a faster rate. Hence it is proved that recovery plays a major role in stress relieving among rugby players

VI. LIMITATIONS AND RECOMMENDATIONS

Limitations

- Sample size was small.
- Study duration was less.
- Players were limited to a particular institution.

Recommendations

- Large sample size can be taken.
- Players from various institutions were recommended.
- In future studies exercise regimen can be recommended as treatment.
- Longer study duration are recommended.

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