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## THE IMPACT OF PHYSICAL ACTIVITY LEVEL ON THE QUALITY OF LIFE AMONG NATIONAL BASEBALL LEAGUE PLAYERS IN SRI LANKA

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## Abstract:

**Introduction:** Sports participation for people of all ages is associated with an array of psychosocial health benefits including resilience, improved mental health, a sense of belonging, higher levels of self-efficacy, reduced stress, enhanced coping, and positivity. **Objective:** This study aimed to analyze the impact of physical activity level on the quality of life among national baseball league players in Sri Lanka. **Method:** A cross-sectional study was designed with 144 National league baseball players who played national league held in 2019,  $25.63 \pm 2.75$  age range. The quality of life was assessed using the World Health Organization Quality of Life Brief version questionnaire. The physical activity was evaluated using an International physical activity questioner. Data were assessed by standard calculation using point scales for WHOQOL-BREF, transformed scores, and MET values of physical activity, 0.05 taken as cutoff p-value to assess impact. **Results:** According to spearman ranked correlation there is a positive correlation ( $p=0.000$ ) between physical activity level and each (physical domain, psychological domain, social domain, environmental domain) four domains of quality of life. **Conclusion:** It can be concluded that if people are involved with physical activities is positively impacted the quality of life of the people.

**Keywords:** Quality of life, physical activity level



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## **Introduction:**

In Sri Lanka baseball is not as popular as cricket, yet there are more than 100 schools that play baseball in all island school baseball tournaments. Almost every National university in the Sri Lanka has a baseball team that participates in Interuniversity Games and Sri Lanka University Games every year. The national-level baseball tournaments have also become well known around the country. The West Asia Baseball Championship was also held in Sri Lanka in the year 2019 which managed to get a lot of attention from local spectators. The Sri Lankan National Team became champions defeating Pakistan in the final round in the same year (2019). After that Sri Lankan Baseball is getting more and more attention from sports enthusiasts in the country. Sri Lanka, being a newcomer to the game, managed to secure a position to compete in the first-ever Asian Baseball Cup, which was held in the Philippines in 1995. Competed in five Asia Cup tournaments and team registered an international win on all the other occasions and 2009 won the Bronze medal and in 2019 and 2018 won the gold medals(1).

Sports act in a prominent position in society because of their health benefits. The quality of life is considered as good health which is known as the physical or medical approach in which the term health-related quality of life (HRQL) is often used. The psychological model is the other approach, in which quality of life is considered as the psychological well-being, and it is determined by the quantity and quality of an individual's emotions and assessment of their own life (both positive and negative affect). When the quality of life is considered as psychological well-being, the one who has a high level of satisfaction with their own life while experiencing a high number of positive and few negative emotions is a person with a high level of psychological well-being, regardless of their age(2).

According to the World Health Organization (WHO) health is "A state of complete physical, mental, and social well-being not merely the absence of disease". The measurement of health and the effects of health care must include not only an indication of changes in the frequency and severity of diseases but also an estimation of wellbeing and this can be assessed by measuring the improvement in the quality of life-related to health care(3).

Physical activity is often defined as any movement of the body that needs energy expenditure. This includes any motion that is done throughout the day excluding sitting still or lying down. For



instance, walking to class, taking the steps, mowing the lawn, and even cleaning your house are often considered physical activities. Exercise may be a sort of physical activity but not every physical activity is exercise(3). Physical activity fosters normal growth and development and can make people feel better, function better, sleep better and reduce the risk of a large number of chronic diseases(4). Three elements of physical activity are Movement of the body produced by the skeletal muscles, resulting in energy expenditure which varies from low to high, a positive correlation with physical fitness(3). physical activity affects many different health parameters. physical activity is beneficial for many health outcomes, including all-cause mortality, CHD, hypertension, obesity, diabetes and metabolic syndrome, some cancers, immune function, functional capacity and capabilities, musculoskeletal health, and psychological well-being. Physical activity in the form of vigorous exercise does have risks, such as injury and occasional sudden cardiac death, but the evidence shows clearly that people are at greater risk if they are inactive(5).

Social, physical, and cognitive functioning, mobility and personal care, and emotional well-being as the most important dimensions of health-related quality of life, although it should not be forgotten that health-related quality of life is also impacted by certain economic, social and cultural factors(6).

Quality of Life is defined as an individual's perception of their position in life in the context of the culture and value systems in which they live and concerning their goals, expectations, standards, and concerns(3). It is a broad-ranging concept that's affected in a complex way by the person's physical health, mental state, personal beliefs, social relationships, and relationship to salient features of their environment. Within the arena of health care, quality of life is viewed as multidimensional, encompassing emotional, physical, material, and social well-being(7). Sports participation for people of all ages is associated with an array of psychosocial health benefits including resilience, improved mental health, a sense of belonging, higher levels of self-efficacy, reduced stress, enhanced coping, and positivity(3).

Despite the importance of an active lifestyle, only a minority of the population is currently meeting the recommended levels of regular physical activity to achieve health and quality of life benefits(3).



In the Sri Lankan context, there are limited studies conducted to study the impact of physical activity level on the physical state, mental state, and social relationships. It is quite clear that physical activity contributes to all aspects of quality of life, not just the physical aspects(8). Therefore, the study aims to identify the impact of physical activity level on the quality of life among National Baseball League players in Sri Lanka.

**Methods:** The study population was the players who represented the National Baseball League championship in 2019. Using Census sampling method 144 athletes from final teams in National Baseball League were selected as the sample of this study. To collect the data a questionnaire was used. Players' quality of life was measured using the World Health Organization Quality of Life Brief version questionnaire (WHOQOL-BREF) and Physical activity level was measured using International Physical Activity Level questionnaire (IPAL). All the data was collected through Google form because of restrictions occurs due to COVID 19 pandemic. Quality of Life (QOL) of National Baseball League players was assessed based on four domains including Physical, Psychological, Social, and Environment. Each question in WHOQOL-BREF has five Likert scale type responses which follows scoring system to assess QOL. Physical ( $Q3+Q4+Q10+Q15+Q16+Q17+Q18$ ), Psychological ( $Q5+Q6+Q7+Q11+Q19+Q26$ ), Social ( $Q20+Q21+Q22$ ), Environmental ( $Q8+Q9+Q12+Q13+Q14+Q23+Q24+Q25$ ). The independent variable physical activity level was categorized as low, moderate, and high physical activity levels. Low physical activity level is consistent with total physical activity of 0-599 METS minutes per week. Moderate and high physical activity levels are containing with total physical activity of 600-2999 and over 3000 METS minutes per week respectively.

Standard calculation using the point scales for WHOQOL- BREF and transformed scores were used to estimate using the tables for standardizing scores. Physical activity levels were estimated via International Physical Activity Questionnaire. Collected data was entered to Statistical Package for the Social Sciences (SPSS) software to describe using correlational analysis. Relationship between Physical Activity Level and Quality of Life assessed by using a non-parametric test which is known as spearman rank-order correlation.



## Results

**Table 1:** Impact of Physical activity level on domains of Quality of life

|                                | Domain        | M±SD        | P value | Correlation coefficient |
|--------------------------------|---------------|-------------|---------|-------------------------|
| <b>Physical activity level</b> | Physical      | 63.29±16.85 | 0.000*  | 0.499                   |
|                                | Psychological | 63.94±22.41 | 0.000*  | 0.482                   |
|                                | Social        | 64.28±18.26 | 0.000*  | 0.534                   |
|                                | Environmental | 63.51±19.36 | 0.000*  | 0.447                   |

\*  $P < 0.05$

According to table 1 there is a significant relationship between physical activity level and physical domain of quality of life and showed a positive correlation between those two variables ( $p=0.000^*$ ,  $r=0.499$ ). Physical activity level and the psychological domain of quality of life of the respondents showed a positive impact ( $p=0.000^*$ ,  $r=0.534$ ) There is a significant relationship in between physical activity level and social domain of quality of life and showed a positive correlation between those two variables ( $p=0.000^*$ ,  $r=0.482$ ). There is a positive impact ( $p=0.000^*$ ,  $r=0.447$ ) of physical activity level on the environmental domain of quality of life of the respondents.

## Discussion

The results of this study demonstrated the impact of physical activity level on the quality of life of National Baseball League players in Sri Lanka. Again, a part of this finding is in consistence with found major league baseball players with high physical activity improve their physical health leading to five additional year of life(9).

Increasing physical activity in elderly was related to a positive discernment of general quality of life/four domains of QOL, whereas this research is shown that positive correlation between physical activity level and quality of life of National Baseball League players. There is a positive correlation, when considering psychological domain of quality of life and physical activity level ( $p=0.000$ ,  $r=0.534$ ). In fact, Lerch, (1982) reported 15% of retired baseball players had low life satisfaction score, 51% had moderate life satisfaction score and, 34% had high satisfaction score(7).

This research is concluded that there is a positive correlation between physical activity level and

physical domain of quality of life. This finding is consistent with the finding of Moreira, who found positive relationship of physical activity with functional capacity and physical component of health-related quality of life in Brazilian basketball players. However, the same study argues, sports injuries were negatively related to health-related quality of life in functional capacity, physical aspects, pain, social functioning, physical health domains, physical component and mental component(6).

There are many researches regarding relationship of medical illnesses and physical activity level. This research is partially consistent with the finding of those researches. Those are as follow, although this research showed positive relationship/correlation between physical activity level and physical, psychological, social, environmental domains of quality of life.

The mood is improving with moderate exercise while deterioration of the mood happens with intense exercise. This showed the relationship of exercise level and mental well-being(10). Improvement of quality of life and reduce negative psycho-social effect during the confinement period and Covid 19 outbreak were successfully achieved with light, moderate and vigorous intensity physical activity(11). When comparison between physical activity level and quality of life among National Baseball League players; current study found there are positive correlation between physical activity level and each domains of quality of life.

## **Conclusion**

In this study it is found that there is a positive correlation between physical activity level and each domains of quality of life (physical domain, psychological domain, social domain, environmental domain). Athletes with higher physical activity level showed higher scores in their quality of life. It can be concluded that an active lifestyle can make one's life more interesting and pleasant.



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