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Knowledge and perception towards barefoot training in college players: A survey

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Abstract

Background: Running has become more popular activity among people. Kinetic and kinematics is different in shod running and barefoot running. Biomechanics of barefoot may be beneficial in treatment of prevention of a number of overuse injuries. There are some evidence of decreased force and torque to prevent injury in barefoot.

Aim and Objectives: Due to lack of consensus regarding Barefoot Training, Aim of the study is to check knowledge and state of perception regarding Barefoot Training in college players.

Materials and Methods: A survey was conducted among the player of colleges. Consent form and Self-administrated questionnaire was filled by the participants. Questionnaire contains 11 questions regarding Barefoot. Percentages were calculated for each question across all survey.

Results: 73% of participants agreed that barefoot training is useful in sports activity and majority of respondents reported that it increases performance level which indicates positive perception towards it. 44% of respondents reported that due to lack of knowledge they were not using barefoot, while 29% of players reported that due to risk of injury they were not using it.

Conclusion: Majority of players had a positive perception towards Barefoot Training although there is lack of knowledge regarding Barefoot Training.

Keywords: Barefoot, knowledge, injuries, running

Introduction

Running has become more popular and efficient way to achieve fitness and promote long-term exercise ^[1]. Humans have run minimally shod or barefoot for millions of years, but only recently have the running shoe become an essential part of a runner's. Furthermore, there is little evidence to support the current practice of prescribing elevated running shoes with cushioned heels to prevent injuries ^[2]. Such evidence will require long-term longitudinal studies and further understanding of the biomechanics and implications of barefoot running ^[3]. The main distinction between shod and barefoot running occurs during the stance phase. Stance phase is classified by forefoot, mid foot and rear foot strike patterns. In the forefoot strike (FFS) pattern the players makes initial contact with the metatarsal heads until the heel is on the ground. The mid foot strike (MFS) patterns lands with the entire foot contacting the ground at approximately the same time. In the rear foot strike pattern (RFS), the player lands heel first and then places the metatarsal area down ^[5].



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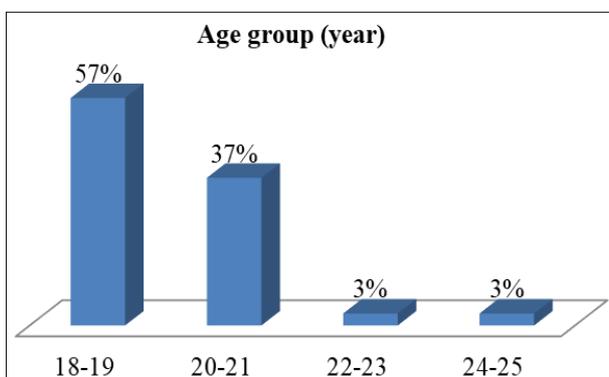
If one is barefoot, it improves awareness of foot position and, therefore, decreased foot position error. This enhances proprioception [4]. Plantar proprioception activates reflexes and helps the central nervous system make decisions that help increase stability and avoid injury [8]. The top reason that runners choose to switch to barefoot or minimal footwear running is to avoid future injury. However while 75% of all runners surveyed indicated an interest in barefoot or minimal footwear running, only 36% had attempted it. The most prevalent barrier to barefoot or minimal footwear running reported was fear of possible injury [6]. Running shoes frequently contain cushioning designed to reduce loading rates during RFS running. However, this cushioning does not appear to reduce impact force peaks, and the incidence of running injuries has remained high despite advances in cushioning materials and design [7]. Barefoot training has been advocated by many coaches for decades with the suggestion that barefoot training improves the strength of the overall muscular system and employs all the muscles including both the large muscles (like the biceps femora's and gastrocnemius) as well as the smaller muscles (like the soleus and peroneus longus). It has been suggested in coaching circles that the well-balanced development of all muscles crossing a joint is essential for performance and for effective injury prevention [9].

Methodology

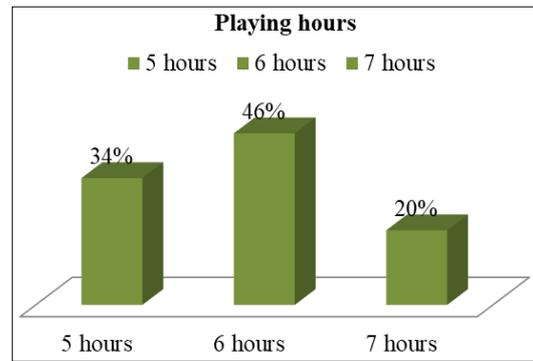
The Aim of the study was to check knowledge and state of attitude regarding Barefoot Training in College players. For the present study we got 121 male players age between 18 to 25 years from the different university of Surat and Bardoli. We have excluded the Players, who had been practiced less than 4 hours per week in our study. For the present study we have used the convenient sampling method. Baseline data and written consent was taken before going to fill up the questionnaire. The percentage analysis was used to describe the how many players have knowledge regarding barefoot training.

Statistical analysis and results

This study has been conducted in a sample of 121 subjects in view of Knowledge and Attitude towards Barefoot training in college players. The data was carefully evaluated through Microsoft Excel 2010. Descriptive statistics including mean, standard deviation, and percentage were analysed.



Graph 1: Distribution of age group



Graph 2: Distribution of playing hours

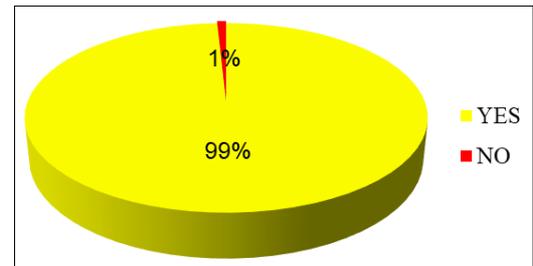


Fig 1: Q-1 Do you know the meaning of Barefoot?

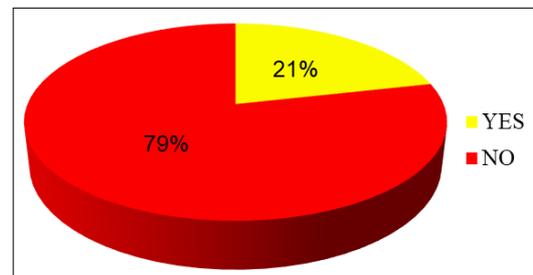


Fig 2: Q-2 Do you know anything about barefoot Training/Running?

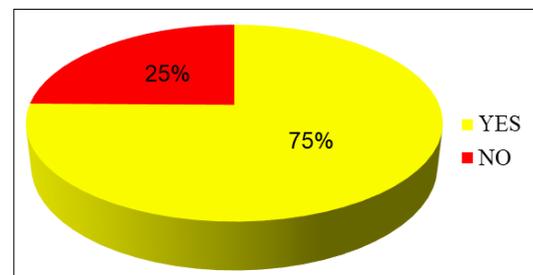


Fig 3: Q-3 Do you think barefoot Training/Running is possible?

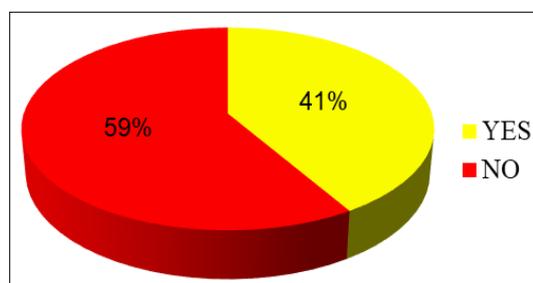


Fig 4: Q-4 anyone suggest you for use Barefoot in your sports activity?

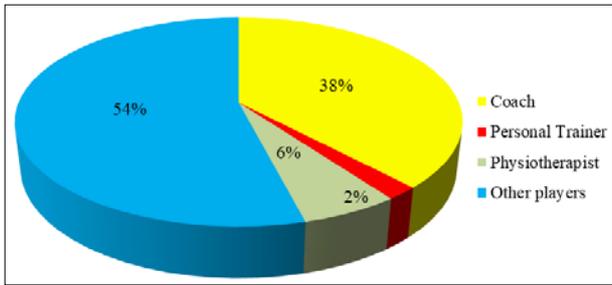


Fig 5: Q-5 who advised you for use Barefoot?

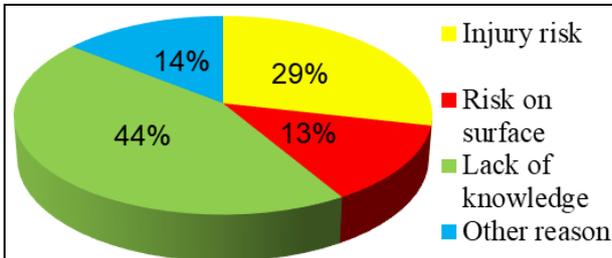


Fig 6: Q-6 why are you not using Barefoot?

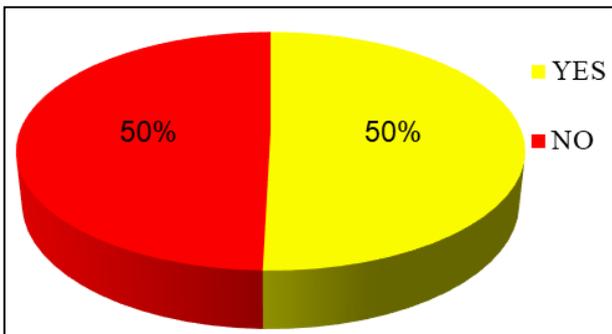


Fig 7: Q-7 Do you think injury rate is less in Barefoot as compared with shoes activities?

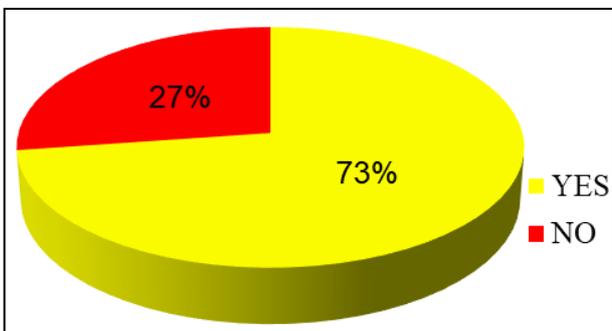


Fig 8: Q-8 According to you, Is Barefoot Training is useful in your sports activity?

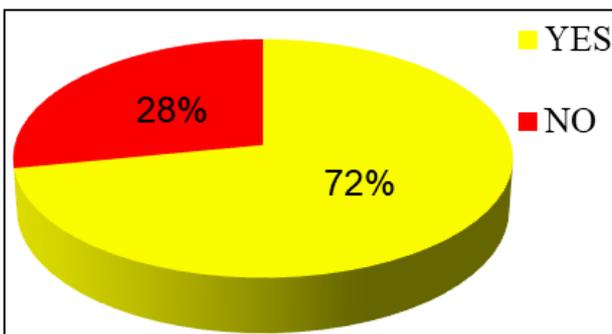


Fig 9: Q-9 Do you think barefoot will increase your performance level?

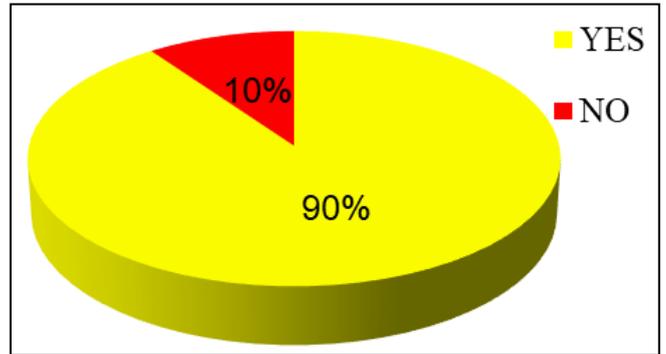


Fig 10: Q-10 Are you interested to know more about Barefoot?

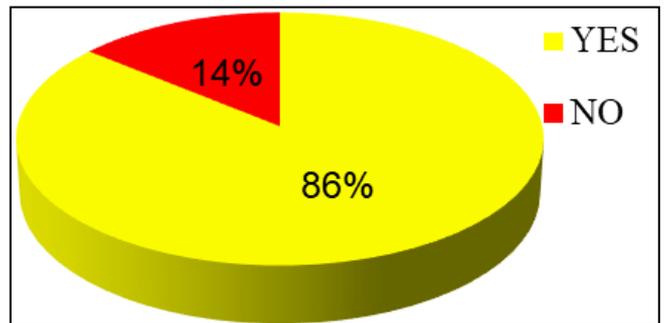


Fig 11: Q-11 Are you interested to use Barefoot in sports activity?

Discussion

This study is the first survey to obtain data regarding knowledge and attitude towards Barefoot Training in college players. Barefoot running may be skill that is instinctively acquired, but it requires practise in order for the body to adapt. The process of adaptation needs to be clearly understood before training and clinical advice is dispersed to player. The participants of this survey had a positive attitude towards Barefoot Training. Most of the participants (75%) reported that Barefoot Training is possible and (73%) of participants reported that Barefoot Training is useful in their sports activity. Some of players tried barefoot in their sports activity but there is lack of information about barefoot Training. This survey found that, due to suggestion for using barefoot, 41% of participants use barefoot in their sports activity. Only 38% of players using barefoot training by suggestion of coach, 54% players using it by suggestion of other players. Kinematics and gait patterns adopted by shod runner and barefoot runners are different. Runners developed no new injury after starting a barefoot running, and also indicated the majority of barefoot runners had previous injuries, that resolved after starting of programme. The greatest improvement following starting a barefoot running programme was at knee. This study put more emphasis on reason why players were not using barefoot. In this survey, most of (44%) respondents reported that due to lack of knowledge they were not using barefoot, while (29%) of players reported that due to risk of injury they were not using it. There is strong evidence that those who are barefoot have such improved position sense, sensory feedback and proprioception that they have much less lateral ankle instability or risk of sprain. In our survey, 50% of players reported that injury rate is less in barefoot as compared with shoes activity. And also 72% players reported that there was increase in performance level while using barefoot. The Barefoot training is a new concept; though there is much evidence about advantage of barefoot running. Kinetics and

kinematics are different in shod running and barefoot running. There is a lack of information regarding barefoot training in college player. In Our study, almost (90%) of player expressed their curiosity in knowing more details about barefoot, whereas 10% of players were not at all interested to know further about it. Among all participants, most of (86%) showed their interest in using the barefoot in their sports.

Conclusion

On the basis of our result we concluded that most of the participants show a positive attitude towards Barefoot Training though majority of players has not enough knowledge about it. So, popularity of respondents indicated an interest to know more about Barefoot Training and also executing in their sports activity.

Further recommendations

1. Evaluate the knowledge regarding barefoot training by conducting barefoot training program.
2. To implement evidence based barefoot training programme for different sports.
3. To introduce barefoot training programme for university players in different university.

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