



Life skills and basic psychological needs of university athletes

Habilidades para vida e as necessidades psicológicas básicas de atletas universitários

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RESUMO

O objetivo deste estudo foi comparar as necessidades psicológicas básicas (NPB) e a percepção de desenvolvimento de habilidades para vida (HV) em atletas universitários. Participaram 136 atletas universitários (21,78±3,37 anos) participantes dos Jogos Universitários Brasileiros 2019. Os instrumentos utilizados foram a Escala de HV para o Esporte e a Escala de Satisfação das BPN para o Esporte. Para a análise dos dados utilizou-se os testes de Kolmogorov-Smirnov e o t independente ($p<0,05$). Os atletas universitários demonstraram satisfação com suas BPN e alta percepção de desenvolvimento de HV. Atletas universitários do sexo masculino e que recebem algum tipo de incentivo financeiro demonstraram se perceber mais autônomos. Já os mais velhos, de instituição privada, que recebem incentivo financeiro indicam maior desenvolvimento de HV no esporte. É fundamental que profissionais envolvidos no contexto universitário proporcionem experiências esportivas positivas, visando fomentar a satisfação das BPN e no desenvolvimento das HV.

Palavras-chave: Desenvolvimento. Motivação. Psicologia do Esporte.

ABSTRACT

The aim of this study was to compare the basic psychological needs (BPN) and the perception of life skills (LS) in university athletes. Participants ($n=136$) were 21.78±3.37 years and participated in the 2019 Brazilian University Games. The instruments used were the LS Scale for Sport and the BPN Satisfaction Scale for Sport. For data analysis, the Kolmogorov-Smirnov test and the independent t-test ($p<0.05$) were used. University athletes demonstrated satisfaction with their BPN and high perception of LS development. Male university athletes receiving some type of financial incentive demonstrated they perceive themselves to be more autonomous. Older athletes from a private institution, who receive financial incentives indicate greater development of LS in sport. University professionals should provide positive sports experiences, aiming to promote BPN satisfaction and the development of LS.

Keywords: Development. Motivation. Sport Psychology.

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INTRODUCTION

Within the Brazilian university context, university athletes face numerous challenges to reconcile their sports (training and competitions) and academic (studies and internships) careers¹. In this context, university sports provide athletes with an array of benefits for their development within and outside the sports field^{2,3}. Thus, in order to perform these dual career activities, it is essential that this population develop a range of life skills.

These life skills are defined in the literature as abilities that assist in adaptive and positive behavior, allowing individuals to effectively deal with demands and challenges in different contexts, and can be classified into behavioral abilities, such as communication skills; cognitive, such as decision-making skills; social, such as the ease of teamwork; and emotional, such as control of own emotions⁴. These skills can be intentionally learned, developed and refined through sport in order to promote transfer to other sectors of the athlete's life (work, home, university)⁵.

Along with these principles and procedures, the sports context in which the university athlete is inserted is an important factor influencing the perception of the development of life skills^{5,6}. A number of recent studies highlight the importance of a positive sports climate for learning these life skills^{7, 8,9}. However, none of these studies addressed a population of university athletes, since according to Hodge, Danish and Martin¹⁰, although youth sport is an

area in which life skills have been successfully taught, it would be a mistake to limit the teaching of these skills only for that population. Thus, it is essential to investigate how learning skills through sport can be useful during the lifetime of the individual.

In addition, other psychological aspects such as the satisfaction of basic psychological needs (BPN) can affect the development of life skills. BPN have been considered fundamental for the motivation, success and well-being of individuals^{11,12}. BPN are defined as natural dispositions, whose satisfaction of the three innate psychological needs of autonomy, competence and relationship are essential for the engagement, permanence and success in the individual's practices, whether in the sports or academic scope¹¹.

The need for autonomy refers to the individual's ability to act voluntarily, with a sense of choice, so that their behavior conforms to their values. Competence is linked to the opportunity individuals have to express their capabilities, seek challenges and develop their confidence. Relationship, on the other hand, concerns the individual's feeling of belonging to a social group and being connected with people^{11,12}. It should be noted that the satisfaction of BPN is related to the inclusion and engagement of the individual in a social context¹³.

The literature highlights that the satisfaction of BPN is linked to the perception of the development of life skills in individuals in any social environment. Hodge et al.¹⁴, point out that the perception

of autonomy satisfaction can help individuals in problem solving and decision making, whereas competence satisfaction is associated with interpersonal communication and in the development of social skills, in terms of relationships, the authors reveal a direct influence on teamwork.

Although international^{15, 16} and national^{17, 18} studies address the development of life skills in sport, there is a scarcity of studies with the population of university athletes. In this way, understanding how the university sports context affects the perception of life skills development is extremely important to seek the greater development of this specific population. In this sense, such studies within the Brazilian context are essential to observe the importance of sports programs in contributing to the development of life skills within the university, considering that these skills may serve as protective factors in the development of young people and that they are also of great importance in other phases of life¹⁹. Thus, the present study aimed to investigate the perception of young university athletes about the perception of life skills development and the satisfaction of basic psychological needs, specifically seeking to compare according to gender, age group, type of sport, institution, financial incentive (scholarships, salaries, etc.) and classification.

METHODS

PARTICIPANTS

The sample was selected by convenience of 136 Brazilian university athletes, participants of the final phase of the 2019 Brazilian University Games, being 65 female and 71 male, with a mean age of 21.48 ± 1.79 years. Participants were selected according to the following inclusion criteria: 1) Being an athlete for more than one year; 2) Have already participated in state or national competitions. Only individuals who signed the Informed Consent (IC), and who verbally expressed their desire to contribute to the research, participated in the study.

Instruments

Life Skills Scale for Sport (P-LSSS): developed by Cronin and Allen²⁰ and validated for the Brazilian context by Nascimento Junior et al²¹, the scale consists of 43 items that aim to assess the development or not of eight skills for life in sport environments: teamwork (e.g. work well within a team/group), goal setting (e.g. setting challenging goals), social skills (e.g. engaging in group activities), problem solving problems and decision making (e.g. think carefully about a problem), emotional skills (e.g. use my emotions to stay focused), leadership (e.g. organize team/group members to work together), time management (e.g. manage my time well) and communication (e.g. speak clearly to others). Participants respond to the scale on a 5-point Likert a scale ranging from 1 (not at all) to 5 (very much).

To assess the BPN, the Basic Psychological Needs Satisfaction Scale (BNSSS) was used, developed by Ng, Lonsdale and Hodge²² (2011) and adapted and validated for the Brazilian sports context by Nascimento Junior, Vissoci and Vieira²³. The scale validated for Portuguese is composed of 12 items distributed in three dimensions: competence (e.g., I am skilled in my sport), autonomy (e.g., I feel that I practice my sport for pleasure) and relationship (e.g., in my sport, there are people I can trust). Responses are completed on a 7-point Likert scale, ranging on a continuum from “Not at all true” (1) to “Very true” (7). Dimensions are calculated from the average of the sums of the respective items that compose it, so that higher values indicate greater satisfaction of basic needs in the dimension (autonomy, competence or relationship).

PROCEDURES

The procedures adopted in this research followed the criteria of Human Research Ethics. The study is part of the institutional project approved by the Standing Committee on Human Research Ethics of the State University of Maringá under opinion 1.324.4. Initially, contact was made with the organization of the Brazilian University Games, more specifically with the Brazilian Confederation of University Sports (CBDU), for authorization for data collection. After authorization, at the competition site, coaches and technical committee were contacted to request

authorization to administer the scales to athletes. Soon after, after authorization, we approached the athletes explaining the research objectives and how the instruments were filled out. With the consent of the athletes, the scales were applied collectively, with individual completion, together with the signature of the IC. Filling out the instruments took approximately 25 minutes.

DATA ANALYSIS

Data were analyzed using descriptive and inferential statistics. Preliminary data analysis was carried out using the Kolmogorov-Smirnov normality test and Levene’s test of homogeneity of variances. As the data showed a normal distribution, the mean and standard deviation were used to characterize the results. The independent t-test was adopted to compare the BPN and the perception of development of life skills according to sex, age group, type of institution, financial incentive and classification. To compare the BPN and the perception of development of life skills according to the age group, the athletes were divided into two groups, according to the Mean Split approach, following the classification: 1) Age group: up to 21.78 years and over 21.78 years. The effect size for comparisons between more than two groups was carried out using Cohen’s d^{24} : value of $d=0.20$ represents small effect size, $d=0.50$ medium and $d=0.80$ large. The significance index adopted in all analyses was $p < 0.05$.

RESULTS

Table 1 presents the means and the standard deviation of life skills and BPN of university athletes according to sex. No

significant differences were detected in the comparison between the life skills dimensions. However, in the comparison between the BPN, males had significantly higher values ($p < 0.05$) in the Autonomy dimension when compared to female athletes.

Table 1. Comparison of life skills dimensions and basic psychological needs of university athletes according to sex

VARIABLES	Sex		p	d
	Female (n=71) \bar{X} (SD)	Male (n=65) \bar{X} (SD)		
Life skills				
Teamwork	4.58 (0.40)	4.46 (0.66)	0.224	0.21
Goal setting	4.21 (0.77)	4.43 (0.60)	0.073	0.31
Social skills	4.25 (0.79)	4.17 (0.78)	0.552	0.10
Problem solving	4.38 (0.65)	4.29 (0.68)	0.467	0.13
Emotional skills	4.15 (0.68)	4.21 (0.80)	0.599	0.08
Leadership	4.32 (0.66)	4.28 (0.72)	0.763	0.05
Time management	3.96 (0.91)	3.99 (0.98)	0.883	0.03
Communication	4.36 (0.71)	4.28 (0.82)	0.521	0.10
Overall Score	4.30 (0.51)	4.29 (0.53)	0.936	0.01
BPN				
Competence	6.36 (0.69)	6.50 (0.61)	0.213	0.21
Autonomy	5.84 (0.91)	6.13 (0.73)	0.048*	0.35
Relationship	6.13 (1.03)	6.26 (0.94)	0.446	0.13

*Significant difference - $p < 0.05$ – independent t-test.

\bar{X} = mean; SD= Standard Deviation; BPN = Basic Psychological Needs.

When compared according to age group (Table 2) in the dimensions of life skills, university athletes up to 21.78 years old have a greater perception of time

management ($p=0.024$) when compared to individuals over 21.78 years. In the comparison of BPN, no significant difference was found ($p > 0.05$).

Table 2. Comparison of life skills dimensions and basic psychological needs of university athletes according to age group

VARIABLES	Age group
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	Up to 21.78 years	Over 21.78 years	p	D
	(n=71)	(n=65)		
	\bar{X} (SD)	\bar{X} (SD)		
Life skills				
Teamwork	4.54 (0.46)	4.49 (0.63)	0.591	0.09
Goal setting	4.35 (0.71)	4.27 (0.70)	0.549	0.11
Social skills	4.11 (0.82)	4.33 (0.73)	0.105	0.28
Problem solving	4.26 (0.69)	4.41 (0.63)	0.189	0.22
Emotional skills	4.16 (0.69)	4.20 (0.80)	0.766	0.05
Leadership	4.34 (0.67)	4.26 (0.70)	0.461	0.11
Time management	4.15 (0.84)	3.78 (1.01)	0.024*	0.39
Communication	4.24 (0.81)	4.41 (0.71)	0.191	0.22
Overall Score	4.30 (0.51)	4.29 (0.53)	0.897	0.01
BPN				
Competence	6.42 (0.71)	6.43 (0.59)	0.919	0.01
Autonomy	6.00 (0.89)	5.96 (0.79)	0.794	0.04
Relationship	6.17 (1.09)	6.22 (0.86)	0.760	0.05

*Significant difference - $p < 0.05$ – independent t-test.

\bar{X} = mean; SD= Standard Deviation; BPN = Basic Psychological Needs.

Table 3. Comparison of life skills dimensions and basic psychological needs of university athletes according to financial incentives

VARIABLES	Financial incentives		p	D
	No incentives (n=79)	With incentives (n=57)		
	\bar{X} (SD)	\bar{X} (SD)		
Life skills				
Teamwork	4.43 (0.64)	4.65 (0.35)	0.010*	0.42
Goal setting	4.27 (0.79)	4.37 (0.57)	0.397	0.14
Social skills	4.15 (0.83)	4.29 (0.71)	0.314	0.18
Problem solving	4.35 (0.67)	4.32 (0.66)	0.820	0.04
Emotional skills	4.11 (0.82)	4.27 (0.62)	0.221	0.22
Leadership	4.20 (0.78)	4.45 (0.50)	0.026*	0.38
Time management	3.97 (1.01)	3.98 (0.86)	0.940	0.01
Communication	4.22 (0.87)	4.46 (0.57)	0.054	0.32
Overall Score	4.23 (0.57)	4.38 (0.42)	0.094	0.27
BPN				
Competence	6.39 (0.72)	6.48 (0.55)	0.425	0.14
Autonomy	5.86 (0.86)	6.15 (0.79)	0.043*	0.35
Relationship	6.14 (1.04)	6.27 (0.91)	0.447	0.13

*Significant difference - $p < 0.05$ – independent t-test.

\bar{X} = mean; SD= Standard Deviation; BPN = Basic Psychological Needs.

When comparing life skills between individual and collective modalities (Table 3), university athletes in collective modalities had a greater perception of Teamwork ($p=0.009$). On the other hand, university athletes who compete in individual modalities showed a

significant difference in the Goal Setting dimension ($p=0.016$). No significant differences were found in the comparisons of the BPN dimensions according to the type of modality.

Table 4. Comparison of life skills dimensions and basic psychological needs of university athletes according to the type of modality

VARIABLES	Modality		p	D
	Individual (n=51)	Collective (n=85)		
	\bar{X} (SD)	\bar{X} (SD)		
Life skills				
Teamwork	4.34 (0.71)	4.63 (0.38)	0.009*	0.50
Goal setting	4.50 (0.60)	4.20 (0.74)	0.016*	0.44
Social skills	4.09 (0.87)	4.29 (0.72)	0.166	0.25
Problem solving	4.25 (0.70)	4.39 (0.64)	0.253	0.20
Emotional skills	4.11 (0.83)	4.22 (0.68)	0.392	0.14
Leadership	4.18 (0.80)	4.37 (0.60)	0.121	0.26
Time management	4.15 (0.87)	3.87 (0.97)	0.092	0.30
Communication	4.14 (0.98)	4.44 (0.58)	0.052	0.37
Overall Score	4.24 (0.61)	4.32 (0.46)	0.373	0.14
BPN				
Competence	6.43 (0.68)	6.43 (0.64)	0.995	0
Autonomy	5.99 (0.88)	5.97 (0.82)	0.917	0.02
Relationship	6.23 (0.85)	6.17 (1.07)	0.739	0.06

*Significant difference - $p < 0.05$ – independent t-test.

\bar{X} = mean; SD= Standard Deviation; BPN = Basic Psychological Needs.

Table 4 presents the comparison of the satisfaction of Life Skills and Basic Psychological Needs according to the type of institution. Statistically significant differences were found in life skills ($p < 0.05$), demonstrating that athletes from private institutions had greater perception of Teamwork ($p = 0.008$), Social Skills ($p = 0.024$), Leadership ($p = 0.027$), Communication ($p = 0.008$) and Overall Score ($p = 0.013$) than university athletes from public institutions. On the other hand, there were no significant differences between the BPN dimensions ($p > 0.05$).

Table 5. Comparison of life skills dimensions and basic psychological needs of university athletes according to the institution funding

VARIABLES	Institution Funding		p	D
	Public(n=65)	Private (n=71)		
	\bar{X} (SD)	\bar{X} (SD)		
Life skills				
Teamwork	4.39 (0.51)	4.64 (0.55)	0.008*	0.47
Goal setting	4.20 (0.82)	4.42 (0.57)	0.081	0.31
Social skills	4.05 (0.84)	4.36 (0.71)	0.024*	0.39
Problem solving	4.28 (0.71)	4.39 (0.62)	0.358	0.16
Emotional skills	4.13 (0.75)	4.23 (0.74)	0.430	0.13
Leadership	4.17 (0.74)	4.43 (0.62)	0.027*	0.38
Time management	3.91 (1.00)	4.03 (0.89)	0.478	0.12
Communication	4.14 (0.84)	4.49 (0.65)	0.008*	0.46
Overall Score	4.18 (0.53)	4.40 (0.49)	0.013*	0.43
BPN				
Competence	6.48 (0.69)	6.38 (0.62)	0.379	0.15
Autonomy	5.85 (0.88)	6.10 (0.79)	0.094	0.29
Relationship	6.08 (1.08)	6.30 (0.89)	0.216	0.22

*Significant difference - $p < 0.05$ – independent t-test.

\bar{X} = mean; SD= Standard Deviation; BPN = Basic Psychological Needs.

When comparing Life Skills and BPN in terms of some type of financial incentive, such as scholarships, salaries, or similar, for practicing the modality (Table 5), significant differences were found ($p < 0.05$). The results showed that university athletes receiving some type of financial assistance for sports practice perceive more the development of Teamwork ($p = 0.010$) and Leadership ($p = 0.026$) than athletes without this assistance. When observing the dimensions of the BPN, university athletes receiving assistance perceive themselves to

be more autonomous than those who do not receive any type of financial assistance.

Comparing the variables according to game performance (Table 6), no significant differences were detected ($p > 0.05$). Nevertheless, considering the mean values in both groups, medalists and non-medalists, values found were high, showing that university athletes perceive their life skills developed through sport and are satisfied with their basic psychological needs regardless of the results achieved in the University Games.

Table 6. Comparison of life skills dimensions and basic psychological needs of university athletes according to the classification

VARIABLES	Performance		p	D
	Medalist (n=27)	Non-Medalist (n=109)		
	\bar{X} (SD)	\bar{X} (SD)		
Life skills				
Teamwork	4.57 (0.46)	4.51 (0.57)	0.587	0.11
Goal setting	4.40 (0.57)	4.29 (0.73)	0.489	0.16
Social skills	4.08 (0.81)	4.24 (0.78)	0.346	0.20
Problem solving	4.15 (0.90)	4.38 (0.59)	0.224	0.30
Emotional skills	4.33 (0.60)	4.14 (0.77)	0.247	0.27
Leadership	4.36 (0.55)	4.29 (0.72)	0.615	0.10
Time management	3.96 (0.92)	3.98 (0.95)	0.918	0.02
Communication	4.23 (0.76)	4.35 (0.76)	0.463	0.29
Overall Score	4.30 (0.45)	4.29 (0.54)	0.957	0.02
BPN				
Competence	6.48 (0.65)	6.41 (0.66)	0.658	0.10
Autonomy	6.16 (0.82)	5.94 (0.84)	0.214	0.26
Relationship	6.12 (0.98)	6.21 (0.99)	0.665	0.09

*Significant difference - $p < 0.05$ – independent t-test.

\bar{X} = mean; SD = Standard Deviation; BPN = Basic Psychological Needs.

DISCUSSION

The present investigation aimed to compare the perception of life skills development and satisfaction of basic psychological needs (BPN) of Brazilian university athletes according to sex, age group, type of modality, institution funding, financial incentive and performance. The

findings showed that male athletes (Table 1) and who receive some type of remuneration (Table 5) perceive themselves to be more autonomous to perform their sports practice. According to the Self-Determination Theory¹², the need for autonomy refers to the individual's ability to feel that they can exercise control over their decisions and actions. In this sense, we

can infer that, within the Brazilian university context, male athletes and athletes receiving some type of remuneration present greater motivation for pleasure and the feeling of doing what they like, when compared to female university athletes and athletes who do not receive any kind of incentive.

With respect to comparisons of the dimensions of life skills according to sex in Brazilian university athletes (Table 1) revealed similarities in the perception of male and female athletes. Such findings demonstrate that Brazilian university athletes of both sexes seem to be developing life skills through their sports practices. Freire et al⁵, observed in young practitioners of individual modalities that sex did not influence the perception of development of life skills. Given this context, our findings corroborate the current literature demonstrating that sex is not an intervening factor in the development of life skills in university athletes^{25,26}.

When university athletes were stratified by age group (Table 2), type of sport (Table 3) and performance (Table 6), high values were observed in the dimensions of BPN satisfaction regardless of their age group, type of modality and performance indicating that university athletes value aspects of their own skills (competence), sense of pleasure and of doing what they like (autonomy) and affective, behavioral ties (relationship) in their sports environments. In this context, athletes who feel satisfied with their needs are able to engage in their practice and

regulate their motivation to more self-determined levels, where the individual performs a certain activity for pleasure and satisfaction. Studies indicate that the satisfaction of the three needs is a predictor factor for positive results, such as self-determined motivation, pleasure and intentions to continue practicing sports^{12,18,27}.

In assessing the perception of life skills development according to age group (table 2) and modality (table 3), differences were verified between the groups of athletes. Younger university athletes reported greater time management when compared to older athletes. Thus, we can infer that young athletes demonstrate more ability to manage time between sports and university activities than older athletes^{28,29}. Regarding the modality, athletes who practice collective modalities showed a greater perception of teamwork when compared to athletes from individual modalities. On the other hand, athletes in individual modalities have a greater perception of goal setting. These findings can be explained through the theory of positive development of young people, which demonstrates that experiences arising from sports practice will favor the development of personal, social and cognitive skills, leadership, empathy, companionship, creativity and intelligence in the long term, some in greater evidence depending on the characteristic of the modality and the program in which the young person is inserted^{30,31}.

The comparison according to the institution funding (Table 4) revealed that, even with no significant difference, university athletes, regardless of the type of HEI (public or private) are more competent, autonomous and with a good relationship with those involved in sports practice. In this sense, according to the SDT, when the three basic psychological needs rejoice the individual, the greater are the behaviors driven by the internal satisfaction of performing the proposed task within the training and/or game^{11,12}. Thus, regardless of age, when the environment in which this individual is reinforces this sense of belonging, the greater the probability that they will remain in the sport and internalize social values^{11,12}.

Considering the perception of life skills development, university athletes from a private institution (table 4) and who receive some remuneration (table 5), present a greater perception of life skills development. Such findings allow the understanding that the regular practice of sports with some type of financial incentive (scholarships, salaries, etc.) and in which sports practice is more performance-oriented (private HEIs) seems to favor the perception of university athletes about the development of life skills. Specifically, teamwork, social skills, leadership, communication and total life skills score. Thus, the findings of the present study corroborate the literature, demonstrating that the financial incentive and the practice focused on performance is a precursor in the

development of life skills among university athletes.

Based on this, sports practice promotes a series of benefits including improved quality of life, self-esteem, acquisition of moral values and reduction of depressive symptoms. In this perspective, investigations point to positive effects between BPN satisfaction and psychological well-being, indicating that individuals satisfied with their BPN are more likely to develop a healthier life^{32,33}. As for life skills, the findings indicate that the acquisition of these skills can favor educational and professional success, along with improved health³⁴.

Finally, despite the new contributions to the literature, the present study has some limitations. First, as it is a cross-sectional study, the data obtained do not allow inferences of causality. In this sense, future investigations should consider the possibility of conducting experimental investigations, where the variables could be better controlled. The second limitation refers to the small sample, which does not allow the generalization of data for the population of university athletes. However, it is worth noting that the athletes investigated were university athletes with the highest competitive level in Brazil, representatives of all regions of the country. Finally, the other experiences lived by young people in other contexts (for example, academic) were not investigated and it is known that all everyday experiences can influence the development of life skills and the satisfaction of BPN.

Thus, future investigations should use the longitudinal design, which could assess the influence of different contexts and their social agents on the development of life skills and on the satisfaction of BPN.

As practical implications, the study can help professionals working in sports, through evidence that proves that the sports environment can be used as an educational tool in the academic training process. In this sense, it is necessary to expand the theoretical discussions and add subjects in the training programs for professors and coaches about the importance of sports systematization. These actions can contribute to the work of professionals, who build a sports context based on the satisfaction of BPN that favors the development of life skills, reflecting on the positive development of university athletes.

CONCLUSION

In conclusion, university athletes, regardless of the institution funding and performance in the competition, demonstrated satisfaction with their basic psychological needs and high perception of life skills development within the sports contexts in which they are. Male university athletes receiving some type of financial incentive demonstrated that they perceive themselves to be more autonomous. As for life skills, older university athletes, from a private institution, who receive financial incentives, have a greater perception of life skills development within the sport. Thus, from a practical point of view, it is essential

that professionals involved within the university context provide positive sports experiences for athletes, since such experiences act as a tool to promote BPN satisfaction and the development of life skills within the university sports context.

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