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To cite this article: Pedro Danilo Ponciano Núñez, Iago Portela-Pino & María José Martínez-Patiño (2022) A descriptive analysis of the sport, health, and psychological characteristics of at-risk youth in Guatemala, Cogent Social Sciences, 8:1, 2098626, DOI: [10.1080/23311886.2022.2098626](https://doi.org/10.1080/23311886.2022.2098626)

To link to this article: <https://doi.org/10.1080/23311886.2022.2098626>



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Published online: 12 Jul 2022.



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Received: 29 November 2021  
Accepted: 01 July 2022

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Reviewing editor:  
Emma Whewell, United Kingdom

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## SPORT | RESEARCH ARTICLE

# A descriptive analysis of the sport, health, and psychological characteristics of at-risk youth in Guatemala

Pedro Danilo Ponciano Núñez<sup>1,2</sup>, Iago Portela-Pino<sup>2,3\*</sup> and María José Martínez-Patiño<sup>2,4</sup>

**Abstract:** Guatemala is a country with a long history of conflict, poverty and violence that still affects young people. However, there exist non-governmental organizations such as Guatemalan Olympic Foundation (FUNOG) whose purpose is imparting sport and Olympic values as educational principles of the institution. The aim of this study is to describe the sport, health, and psychological characteristics of the youth who participate in this organization. The research's objectives were accomplished through a quantitative methodology and the involvement of 91 participants. Results emphasised the participants' elevated levels of physical activity exceeded those of other youth of same ages. No link was found between the level of physical activity and other personal or health variables. Age was negatively correlated with factors pertaining to meaning in life but not with dialectics. A correlation was found between self-esteem and goals, tasks, and empathy, but health literacy was negatively correlated with interpersonal relationships. These data incentivise us to design and evaluate sport programmes not only as an educational strategy to promote health literacy and social-emotional skills, but also to improve the perception of the purpose of life.

**Subjects:** Physical Activity and Health; Community Sport Development; Psychological Science; Health & Society

**Keywords:** vulnerable young people; educational values; sports; health; social-emotional skills

## 1. Background

The definition of “at-risk youth” applies to the young people who find it difficult to function within their social and educational environments according to their age (Etzion & Romi, 2015). Evidence suggests that, at present, young people face a wider variety of insecurities and decisions about

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how to live their lives (Austen, 2009). The number of homicides in the Americas is the highest documented since 1990, excessively affecting young people between the ages of 15 and 29 (United Nations Office on Drugs and Crime, 2019). In Guatemala, the number of violent deaths per year has doubled and the associated costs represent circa \$2,200 million per year (Mandigo et al., 2018). Because of this it is the country's priority to promote activities to lower the current violence index.

Adolescence is a complex period in which a participant goes through emotional, physical, and psychological changes (Powers & Casey, 2015). This period should occur in a healthy manner, as it represents an important transition necessary for the well-balanced development of an individual's personality (Arslan, 2019). Health literacy, self-esteem, and purpose in life are also fundamental competences for a human being's adequate development and are crucial for his or her full social incorporation (Jafarigiv & Peyman, 2022; Moksnes & Espnes, 2013; Paakkari et al., 2019; Yoo et al., 2012). Sport facilitates the promotion of values which lead to improvement in self-esteem, purpose in life, and health literacy. Various countries acknowledge the benefits of using sport as a tool to positively impact the self-esteem, socialisation, and inclusion of vulnerable groups (Anderson-Butcher, 2019; Lyras & Welty Peachey, 2011). One study on youth victims of child abuse demonstrated that their involvement in sport and engagement in pastimes had a greater impact than their participating in activities such as music and art (Kwak et al., 2007). Another project on youth re-socialisation demonstrated that youth participation in sports, IT, art, and video art, in conjunction with psychiatric care (Gojkovic et al., 2013) had positive outcomes in preventing addiction.

Consequently, it appears that at-risk youth who engage in sport-based intervention programmes show cognitive improvement and accept social norms (Carratalá et al., 2020). Preliminary results suggest that physical activity can improve mental health in youth at risk of developing psychological disorders (Eather et al., 2016). An evaluation on young people at risk of contracting type 2 diabetes determined that their involvement in physical activity programmes had a positive impact on their self-esteem and there was a decrease in their anxiety symptoms (Benavides & Caballero, 2009).

**Table 1. Scale reliability**

| Variables                                 | Factors                     | Cronbach's Alpha | No of elements |
|---|-----------------------------|------------------|----------------|
| PAQ-A a                                   | Level of Physical Activity  | ,713             | 9              |
| Rosenberg                                 | Self-esteem                 | ,783             | 10             |
| Purpose of Life<br>PIL                    | Perception of Purpose       | ,694             | 9              |
|   | Experience of Purpose       | ,701             | 7              |
|   | Goals and Tasks             | ,735             | 7              |
|   | Fate-Freedom Dialectics     | ,724             | 3              |
| Social-Economical<br>Competences<br>(SEC) | Interpersonal Relationships | ,737             | 6              |
|   | Motivation                  | ,741             | 6              |
|   | Self-awareness              | ,753             | 5              |
|   | Conflict Resolution         | ,711             | 5              |
|   | Teamwork                    | ,721             | 5              |
|   | Self-regulation             | ,781             | 5              |
| Health Literacy<br>HLS-EU-Q47             | Empathy                     | ,801             | 6              |
|   | Health attention and care   | ,879             | 16             |
|   | Disease prevention          | ,881             | 15             |
|   | Health Promotion            | ,843             | 16             |

**Table 2. Physical and Psychological Variables Descriptors**

| PHYSICAL AND PSYCHOLOGICAL FACTORS | $\bar{X}$ | Median | Mode | SD    | Asim. | Kurt. | Min.  | Max.  |
|------------------------------------|-----------|--------|------|-------|-------|-------|-------|-------|
| PAQ                                | 3,153     | 3,032  | 2,46 | ,542  | ,598  | -,096 | 2,32  | 4,87  |
| CARE AND ATTENTION                 | 18,66     | 19,458 | 23,4 | 9,962 | ,618  | 1,022 | -1,60 | 50,65 |
| DISEASE PREVENTION                 | 14,95     | 13,466 | 11,4 | 9,546 | ,834  | 1,312 | -2,60 | 47,67 |
| HEALTH PROMOTION                   | 15,957    | 15,520 | 9,40 | 8,567 | ,356  | ,675  | -1,60 | 44,52 |
| SELF-ESTEEM                        | 23,131    | 23,000 | 25,0 | 3,52  | ,345  | 3,607 | 13,00 | 36,00 |
| INTERPERSONAL RELATIONSHIPS        | 3,518     | 3,500  | 3,67 | ,727  | ,010  | -,650 | 2,17  | 5,00  |
| MOTIVATION                         | 3,463     | 3,500  | 3,67 | ,546  | -,719 | ,450  | 1,67  | 4,33  |
| SELF-AWARENESS                     | 3,494     | 3,600  | 3,60 | ,806  | -,128 | -,395 | 1,60  | 5,00  |
| CONFLICT RESOLUTION                | 3,265     | 3,400  | 3,40 | ,681  | -,474 | ,122  | 1,40  | 4,80  |
| TEAMWORK                           | 3,824     | 4,000  | 3,00 | ,783  | -,267 | -,871 | 2,00  | 5,00  |
| EMPATHY                            | 3,492     | 3,500  | 3,67 | ,792  | -,085 | -,601 | 1,83  | 5,00  |
| SELF-REGULATION                    | 2,785     | 2,600  | 2,60 | ,596  | -,395 | -,098 | 1,00  | 4,00  |
| PURPOSE PERCEPTION                 | 4,612     | 4,666  | 5,56 | 1,151 | -,326 | -,317 | 1,33  | 6,89  |
| PURPOSE EXPERIENCE                 | 4,359     | 4,142  | 3,86 | 1,032 | ,474  | ,248  | 1,71  | 6,86  |
| GOALS AND TASKS                    | 4,387     | 4,285  | 4,29 | ,9612 | ,137  | ,473  | 1,43  | 6,86  |

In social settings surrounded by violence and crime, the main causes for at-risk youth to become involved in gangsterism are material profit, amusement, substance abuse, and emotional factors related to social acceptance and belonging (Owen & Greeff, 2015). Consequently, the type of attachments formed and the development of healthy relationships with peers and other members of the community have a significant impact on self-esteem (Busiol & Lee, 2015). Results suggest that young people at risk of developing depression may improve their self-esteem through preventive actions which allow them to deal with environmental factors more effectively (Blossom et al., 2020). Because of this, long term programmes lead to positive changes in quality of life, especially regarding the behaviour of young people, and even graduates return to the organisations as role models (Seixas et al., 2019).

In terms of education, there is a pressing need to establish systematic programmes to eradicate absenteeism as the cause of low academic achievement, and to avoid family disintegration and low participation in school sport (Hunt & Hopko, 2009). It is important to consider that school leavers are aware of their deficient health; they go to the doctor's more regularly and do not engage in any form of intense physical activity, showing low participation in extracurricular sports. (Faulkner et al., 2003). The incentive of youth empowerment encourages social inclusion by increasing self-esteem and leads to a decrease in school desertion (Jarkiewicz, 2019). In terms of health monitoring, sport could become a non-medical space for the detection of STDs in youth due to the screening required to join programmes (Gold et al., 2007).

However, the positive impact of sport depends on the presence of factors, such as the context of the intervention and the staff overseeing it (Spruit et al., 2017), which means that sport practice on its own does not promote positive attitudes (Lyras & Welty Peachey, 2015; Sugden, 1991). Therefore, in a country known for its high emigration rates caused by poverty; its high number of homicides perpetrated by teenagers (Mandigo et al., 2018), and the current conflict between various local ethnic groups (Rato Barrio & Ley, 2010), it is a priority to determine a baseline of the physical and psychological characteristics for at-risk youth (Rato Barrio, 2009).

Guatemalan Olympic Foundation (FUNOG) contributes to the transformation of boys, girls and youth who live in highly vulnerable social areas in Guatemala City (Olímpica Guatemalteca FUNOG, 2020). Its educational principles are based on the application of a comprehensive social and sport model designed to counterbalance the existing predispositions to social dysfunctions and exclusion (Olímpica Guatemalteca FUNOG, 2020). This study intends to describe the sport, health, and psychological characteristics of at-risk youth residents of an institution which uses sport as an educational strategy and promotes Olympic values. The Olympic values are an educational strategy promoted by the International Olympic Committee (IOC) that foster excellence, friendship and respect in order to place sport at the service of humanity (Martínez Patiño et al., 2016). This study will establish whether an educational model based on moral values can improve the physical and psychological health of FUNOG participants. Furthermore, it will provide a baseline for the design and implementation of intervention programmes that respond to the current needs of the youth participating in this organisation.

## 2. Methodology

### 2.1. Study context

Guatemala is a country faced with social inequality as the result of various problems in (i) migration, (ii) malnutrition, (iii), education and (iv) violence. However, FUNOG established the programme known as "Hoodlinks" (Links Between Neighbourhoods) to benefit young people from the most vulnerable communities of Guatemala City by promoting physical activity as a problem-solving space (Olímpica Guatemalteca FUNOG, 2020). Additionally, the programme encourages Olympic principles and values, and involves parents, project coaches, community leaders, athletes, and volunteers, to transform them into agents of change in their communities (Olímpica Guatemalteca FUNOG, 2020). Moreover, the foundation has the backing of national and international organisations for the establishment of sustainable projects. The programme includes

two scholarship services for participants and a tutoring system to monitor homework completion (Olimpica Guatemalteca FUNOG, 2020).

## 2.2. Participants

FUNOG is an important organisation to research, especially due to this programme, which pursues the positive development of young people living in vulnerable conditions in a country with a longstanding history of poverty and violence. The study included a sample of 91 participants out of 142, all residents at the foundation. Out of the sample participants 55.4% were male and 43.5% female. The median age was 13.85 (max. = 17, min. = 12).

## 2.3. Instruments

The instrument used consisted of two parts. The first part was a purpose-built questionnaire which included personal and familial variables for each participant. The second part was the application of questionnaires that measured the level of social-emotional competences, physical activity, self-esteem, purpose in life, and health literacy.

*Assessment Scale of Social-Emotional Competences (ASSEC)*: this scale measures the level of development in seven social emotional competences (1): emotional self-regulation, (2) teamwork, (3) self-awareness, (4) interpersonal regulation, (5) empathy, (6) motivation and (7) basic conflict resolution in a differentiated way (Repetto et al., 2009).

*The Physical Activity Questionnaire for Adolescents (PAQ-A)* evaluates the amount of physical activity in youth of 14 to 20 years of age. In the form of a self-informed questionnaire, consisting of nine items, each of which evaluate different aspects related to the physical activity performed by each participant during the seven days prior to completing the questionnaire; the answers are marked on a five-point Likert scale, where the final score is the average of the points awarded for items 1–8 (Kowalski et al., 1997). Item 1 represents any physical activity the participants performed in their spare time. Consisting of 24 sub-items, the first 22 sub-items have been adapted to Spain (Martínez-Gómez et al., 2009) and include the most common physical activities practised in there; the last two sub-items are completed by each participant and may include a maximum of two physical activities not listed in the questionnaire. The points for item 1 are obtained from the average of all the sub-items. Item 2 evaluates the frequency with which the participants were very active over the past seven days by during physical education lessons. Item 3 collects information about the physical activity completed by the participants before and after a meal. Item 5 evaluates the number of times the participant was active after school up until 18:00 hours in the seven days prior to taking the questionnaire. Item 5 also measures the number of times the participant remained active over seven days, but over the period between 18:00, 22:00 hrs. Item 6 focuses on the number of times participants were very active over the weekend prior to the questionnaire. Item 7 describes the frequency and intensity of the physical activity performed over the past week. Item 8 covers 7 sub-items per each of the seven days of the week. Participants are expected to mark the frequency with which they take part in physical activity each day of the week, and the final mark is calculated by the mean of the sub-items.

Because item 9 identifies those participants who might engage in uncommon types of physical activity due to illness, it is not included in the calculation of the final score. The PAQ-A questionnaire score is obtained from the points awarded for each item from 1–8, including the average for items 1 and 8. The scores may vary between 1 (low level of physical activity) and 5 (high level of physical activity). To define the level of physical activity, this variable has been assigned three ranges according to the PAQ-A results  $\leq 2$  as “ low activity,”  $>2$  and  $\leq 3$  as “ moderate activity,” and  $>3$  as “ high activity “ (Chahl et al., 2015; Chen et al., 2008; Gomes et al., 2014).

*Rosenberg self-esteem scale*: Spanish adaptation of Morejón et al. (2004) evaluates the participants' self-esteem. The test includes ten items on Likert scale (1): strongly agree, (2) agree, (3)

**Table 3. Correlations between the Different Independent Variables and their Factors**

| Factors                     | Age  | 1     | 2     | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11      | 12   | 14 | 15 | 16 |
|-----------------------------|------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|------|----|----|----|
| PAQ                         | R    | ,019  | 1     |        |        |        |        |        |        |        |        |         |      |    |    |    |
|                             | Sig. | ,857  |       |        |        |        |        |        |        |        |        |         |      |    |    |    |
| SELF-ESTEEM                 | R    | ,129  | -,152 | 1      |        |        |        |        |        |        |        |         |      |    |    |    |
|                             | Sig. | ,223  | ,150  |        |        |        |        |        |        |        |        |         |      |    |    |    |
| ATTENTION AND CARE          | R    | ,087  | -,113 | ,151   | 1      |        |        |        |        |        |        |         |      |    |    |    |
|                             | Sig. | ,414  | ,288  | ,153   |        |        |        |        |        |        |        |         |      |    |    |    |
| DISEASE PREVENTION          | R    | ,102  | -,157 | ,033   | ,706** | 1      |        |        |        |        |        |         |      |    |    |    |
|                             | Sig. | ,338  | ,138  | ,756   | ,000   |        |        |        |        |        |        |         |      |    |    |    |
| HEALTH PROMOTION            | R    | ,005  | -,140 | ,026   | ,648** | ,805** | 1      |        |        |        |        |         |      |    |    |    |
|                             | Sig. | ,964  | ,186  | ,805   | ,000   | ,000   |        |        |        |        |        |         |      |    |    |    |
| INTERPERSONAL RELATIONSHIPS | R    | -,030 | ,110  | -,101  | -,249* | -,147  | 1      |        |        |        |        |         |      |    |    |    |
|                             | Sig. | ,777  | ,299  | ,343   | ,017   | ,010   | ,164   |        |        |        |        |         |      |    |    |    |
| MOTIVATION                  | R    | ,191  | ,097  | -,154  | ,031   | -,092  | ,371** | 1      |        |        |        |         |      |    |    |    |
|                             | Sig. | ,070  | ,360  | ,144   | ,771   | ,628   | ,387   | ,000   |        |        |        |         |      |    |    |    |
| SELF-AWARENESS              | R    | ,058  | ,110  | -,127  | ,070   | ,017   | ,393** | ,528** | 1      |        |        |         |      |    |    |    |
|                             | Sig. | ,588  | ,297  | ,232   | ,511   | ,872   | ,703   | ,000   | ,000   |        |        |         |      |    |    |    |
| CONFLICT RESOLUTION         | R    | ,141  | ,073  | -,077  | -,069  | -,121  | -,070  | ,283** | ,193   | 1      |        |         |      |    |    |    |
|                             | Sig. | ,182  | ,493  | ,469   | ,513   | ,253   | ,508   | ,007   | ,066   | ,349** |        |         |      |    |    |    |
| TEAMWORK                    | R    | ,054  | ,029  | -,095  | -,038  | -,077  | ,548** | ,594** | ,481** | ,349** | 1      |         |      |    |    |    |
|                             | Sig. | ,612  | ,783  | ,369   | ,723   | ,466   | ,692   | ,000   | ,000   | ,001   | ,000   |         |      |    |    |    |
| EMPATHY                     | R    | -,034 | ,090  | -,210* | -,055  | -,044  | -,008  | ,632** | ,457** | ,230*  | ,494** | 1       |      |    |    |    |
|                             | Sig. | ,750  | ,394  | ,046   | ,604   | ,677   | ,941   | ,000   | ,000   | ,028   | ,000   | ,000    |      |    |    |    |
| SELF-REGULATION             | R    | -,003 | ,101  | ,058   | -,111  | -,035  | -,016  | -,102  | -,083  | ,043   | ,096   | -,375** | 1    |    |    |    |
|                             | Sig. | ,977  | ,340  | ,586   | ,294   | ,744   | ,883   | ,338   | ,815   | ,434   | ,686   | ,363    | ,000 |    |    |    |

(Continued)

**Table3. (Continued)**

|                       |      |         |       |       |       |      |      |      |       |      |       |       |      |       |        |        |        |
|-----------------------|------|---------|-------|-------|-------|------|------|------|-------|------|-------|-------|------|-------|--------|--------|--------|
| PERCEPTION OF PURPOSE | R    | -,295** | -,129 | ,176  | ,055  | ,123 | ,187 | ,037 | -,104 | ,130 | -,143 | ,009  | ,080 | -,052 | 1      |        |        |
|                       | Sig. | ,005    | ,225  | ,095  | ,603  | ,247 | ,076 | ,729 | ,327  | ,221 | ,175  | ,932  | ,452 | ,622  |        |        |        |
| EXPERIENCE OF PURPOSE | R    | -,250*  | -,019 | ,140  | -,013 | ,005 | ,025 | ,033 | -,020 | ,188 | -,125 | -,069 | ,087 | ,057  | ,588** | 1      |        |
|                       | Sig. | ,017    | ,856  | ,184  | ,904  | ,959 | ,811 | ,756 | ,851  | ,074 | ,237  | ,516  | ,414 | ,588  | ,000   |        |        |
| GOALS AND TASKS       | R    | -,256*  | -,040 | ,213* | ,012  | ,064 | ,114 | ,026 | -,070 | ,127 | -,053 | -,008 | ,071 | -,006 | ,770** | ,793** | 1      |
|                       | Sig. | ,014    | ,707  | ,043  | ,913  | ,545 | ,282 | ,809 | ,511  | ,231 | ,617  | ,937  | ,503 | ,954  | ,000   | ,000   |        |
| DIALECTICS            | R    | -,144   | -,013 | ,042  | -,035 | ,040 | ,002 | ,056 | ,042  | ,190 | ,073  | ,033  | ,076 | ,074  | ,177   | ,541** | ,402** |
|                       | Sig. | ,174    | ,904  | ,690  | ,745  | ,705 | ,987 | ,600 | ,692  | ,071 | ,493  | ,758  | ,472 | ,484  | ,094   | ,000   | ,000   |

\*, \*\* p < .05, .01

1 = PAQ; 2 = Self-esteem; 3 = Attention and Care; 4 = Disease Prevention; 5 = Health Promotion; 6 = Interpersonal Relationships; 7 = Motivation; 8 = Self-awareness; 9 = Conflict Resolution; 10 = Teamwork; 11 = Empathy; 12 = Self-regulation; 13 = Perception of Purpose; 14 = Experience of Purpose; 15 = Goals and Tasks; 16 = Dialectics



disagree and (4) strongly disagree. Self-esteem score is categorised as follows: low self-esteem (<25 points), average self-esteem (26–29 points) y high self-esteem (30–40 points).

*Purpose in Life test -PIL-*: The test used to evaluate purpose in life was the Spanish adaptation of the original instrument created by Crumbaugh and Mabolick (Noblejas de la Flor, 2011). The scale includes 20 Likert-like items, with answer options from 1 to 7. The test is based on the principles of Victor Frankl's Logotherapy on basic human motivation. These principles establish that motivation stems from the perception and experience of a purpose in life, specifically self-transcendence, creativity, and experiences and attitudes, which lead to the discovery of a purpose of existence. Life meaning or purpose in life, is based on an empirical construct and supported by multidisciplinary studies (E. R. Martínez et al., 2012). The PIL test consists of four factors (Noblejas de la Flor, 2002, 2011): i) Perception of purpose (FPI), including the knowledge and motivations a person perceives in order to live and value his or her own life (items 4, 6,9,10,11,12,16,20,17); ii) the Experience of Purpose (FP2), evaluates the participant's perception of personal existence in relation to good things, such as everyday experiences and events (items: 1, 2, 5, 9, 17, 19, 20); iii) Goals and Tasks (FP3) evaluates objectives linked to concrete actions in life and the responsibility assumed by setting such objectives (items: 3, 7,8, 13, 17, 19, 20); and iv), Fate-Freedom Dialectics (FP4), considers the dilemma between freedom and fate in an individual's life, and contemplates death as an inevitable end (items: 14, 15, 18).

The *Health Literacy Survey Questionnaire HLS-EU-Q47* evaluates the ways in which the participants obtains, understands, values, and applies information to make decisions related to health, disease prevention and health promotion (Sørensen et al., 2013). The HLS-EU-Q47, includes 47 items in 12 sub-categories, each of them covering three different areas (attention and care, disease prevention, and health promotion), and provide information of four different abilities in health literacy which include gaining access, understanding, evaluating, and applying (Sørensen et al., 2013). The instrument is marked on a Likert scale based on four categories: (1 = Very Difficult, 2 = Difficult 3 = Easy, 4 = Very Easy). To identify risk factors of deficient health literacy (HL), the participants'scores were classified as HL Deficient: < 25,88 and HL Excellent > 41,45.

#### **2.4. Data analysis**

First, a descriptive analysis of the data was performed (Table 1). The analysis considered the means and typical deviations of each of the dependent and independent variables. The Kolmogorov Smirnov Test was used to determine that the sample distribution was normal since Sig = .206. Next, the relationship between the different variables was analysed using the Pearson Correlation Coefficient with a significance of  $p < .05$  y  $.01$  (Sijtsma, 2009). Cronbach's Alpha was used to analyse the internal consistency, obtaining results higher than .07, indicating a high level of reliability for all variables excluding the Experience of Purpose ( $p = .694$ ; George & Mallery, 2003; Gliem & Gliem, 2003).

#### **3. Procedures**

The study was conducted in line with deontological regulations recognised by the Helsinki Declaration (Hong-Kong revision, September 1989) and in accordance with the EEC Good Clinical Practice recommendations (document 111/3976/88 July 1990). The testing strategy consisted in administering the test to participants of four sites (Zone 3, Zone 6, Zone 7, Zone 18) all highly vulnerable areas of Guatemala City. Firstly, to ensure test quality, all instructors where trained, and their questions regarding the use of the instrument were answered. Secondly, instructors addressed the parents of the participating youth of each site and explained that testing would be anonymous, voluntary, and candidates' information would remain confidential. Lastly, the parents and participants signed the consent and, the test was administered accompanied by their instructors.

## 4. Results

### 4.1. Descriptors of the personal and familial variables

The 91 participants were categorised as living in three distinct areas: rural, semi-rural or urban, 72,0% of participants come from rural areas, 20,9% from urban areas and 6,6% from semi-rural areas. In terms of education, 57,1% of participants have completed primary school; 41,8%, secondary school, and 1,1% have no formal education. The employment status variable indicates that 84,6% of participants are not in employment, 9,9% work in formal economy and 5,5% work in informal (underground) economy, and 95,6% of participants have no vocational training, and only 4,4% of the sample has vocational training. Concerning income, 61,0% of the participants receive an income through employment, 36,6% from their families and 2,2% have no income. Pertaining to living arrangements, 24,2% of participants live with their children and relatives, 13,2% live with a partner and children, and 3,3% live only with a partner. Out of the total cases, 90,1% have a monthly income of less than €500.00 and 9,9% receive more than €500.00. The sample population is primarily Catholic (49,5%), followed by Christian (30,8%), Evangelical (13,2%) and non-religious (6,6%). The mothers of 46,0% of the participants completed secondary school; 26,4%, primary school; 12,1% have employment training, and 15,4% have technical training. The fathers of 36,3% of the sample population completed secondary school, 24,2% received employment training, 20,9% have technical training and 18,7% had finished primary school.

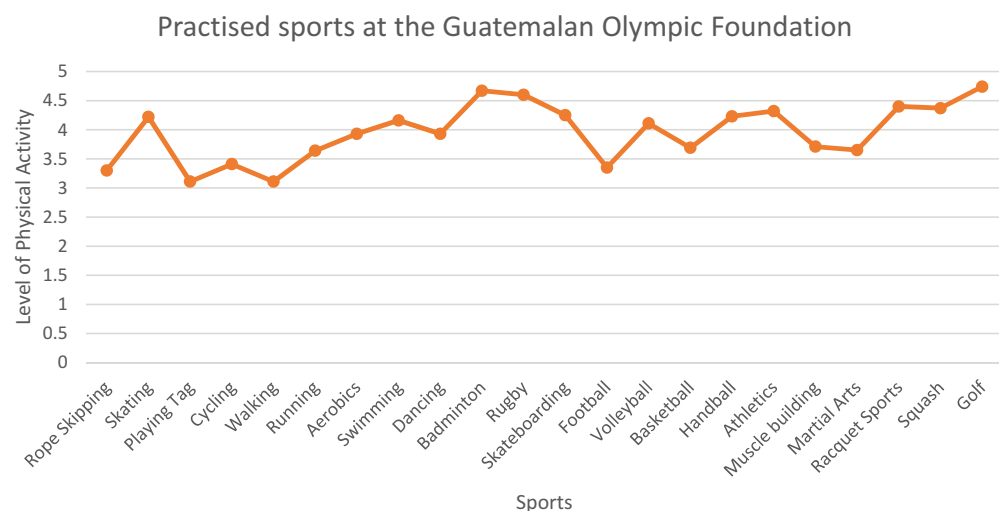
### 5. Descriptors of the sports practiced variables

The most popular physical activities practised by the participants as: golf (4,74), squash (4,37), racquet sports (4,40), athletics (4,32), handball (4,23), volleyball (4,11), skateboarding (4,25), rugby (4,60), badminton (4,67), swimming (4,61) and skating (4,22). The least popular activities were the following: football (3,35), walking (3,11), cycling (3,41), rope skipping (3,30), and playing tag (3,11).

### 6. Descriptors of the health variables

Out of 91 participants 51,6% reported never being admitted to hospital, 36,3% had fewer than three admissions, and 12,1% more than three admissions. As for urgent care, 70,3% of the sample had never been to the A&E, 26,4% had been to the A&E fewer than three times, and 3,3% had been to A&E more than three times. In terms of self-perception of health, 71% had a good self-perception of health and 28,6% had an average self-perception of health. None of the participants' results were consistent with a bad or terrible self-perception health. Out of the sample of 91 participants, 75,8% reported engaging in frequent physical activity, 18,7% performed occasional physical activity and 5,5% did not engage in any form of

**Figure 1. The means of each sport practised at FUNOG.**



physical activity. Lastly, 87,9% of the sample reported having medical care and 12,1% had no medical care.

The table illustrates (Table 2) a high level of Physical activity in the sample population ( $\bar{X}=3,15$ ); however, the level of health literacy in the three areas is low (health promotion = 15,95; Disease prevention = 14,95; care and attention = 18,66). Self-esteem is high ( $\bar{X}=23,13$ ); their social-emotional competences fluctuate between self-regulation, this area achieving the lowest score ( $\bar{X}=2,78$ ), and teamwork, with the highest score ( $\bar{X}=3,82$ ). Their purpose of life competences is also average and fluctuates between ( $\bar{X}\Omega=3,79$ ) dialectics with the lowest score and ( $\bar{X}=4,61$ ), the highest score obtained in perception of purpose.

The analysis of the correlations (Table 3) indicates that age had a significant negative correlation with the perception of purpose ( $r = -,295$ ; sig.,005), the experience of purpose ( $r = -,250$ ; sig.,017) and goals and tasks ( $r = -,256$ ; sig.,014); consequently, an older age was associated with lower scores in the items that measure purpose in life. The rate of physical activity does not correlate with any of the parameters measured, and self-esteem significantly correlates with empathy, ( $r = -,210$ ; sig.,046) and to goals and tasks ( $r = ,213$ ; sig.,043).

Interpersonal relationships correlate with two Health Literacy factors: health attention and care ( $r = -,249$ ; sig.,017), and disease prevention ( $r = -,270$ ; sig.,010) but not with health promotion. Therefore, fewer interpersonal relationships represent more attention and care, and thus, better disease prevention. The factors which affect health literacy are highly and significantly correlated with one another. The same applies to the factors involved in social-emotional competences, except for self-regulation, which is only correlated with empathy. The factors pertaining to purpose in life are also associated, apart from dialectics, which is not associated with the perception of purpose.

## 7. Discussion

Although the concern for studying the contributions of sport practice as a safety measure for the proficiency in social and personal skills is no novelty, there is little evidence of the impact of these programmes. This study is based on the hypothesis that sport contributes to human development and, thus to the establishment of physical and psychological traits, especially in at-risk youth.

## 8. Participants profile

Although results suggest that FUNOG participants come from urban and semi-rural areas, the reality is that most of them come from rural areas but now live in the city because of internal displacement in pursuit of better employment opportunities. (Rato Barrio, 2009). The participants report to have completed two levels of education and very few have not had any formal education. This correlates with the fact that the majority are not in employment, while others work in formal or informal (underground) economic initiatives. This leads to a decay in their academic development. Thus, very few participants have the employment training required for their incorporation into the economy.

The paternal and maternal academic background suggests that participants' parents have had access to at least one educational stage, or technical training to work in the formal or informal economy. Conversely, participants report that their economic incomes derive from their parents' jobs or money from relatives, and few of them do not have any type of income. The participants live at home and a smaller percentage live with a partner and have children. Furthermore, most of the youth in the sample live in vulnerable conditions, reporting a monthly income of less than €500.00 and very few of them with a monthly income higher than €500.00. The participants' religious beliefs are not surprising considering the cultural characteristics of the country, most participants being Catholic, followed by Christian and Evangelical, and very few non-religious.

### 9. Sport practice

During sport practice at the foundation participants have the possibility to attend one of the headquarters which is in one of the highly dangerous zones of Guatemala City (Olimpica Guatemalteca FUNOG, 2020). Questionnaire results reflect that children and youth on the programme engage in sports that are typically associated with an elite social class, such as golf and squash; they also participate in individual physical activities such as racquet sports, athletics, skateboarding, swimming and skating and practice team sports such as handball, volleyball and rugby. In this case, elite sports are more practiced by FUNOG's participants due to its pedagogical strategy that contemplates establishing safe spaces that allow breaking the traditional social scenarios of popular sports activities such as soccer that participants are accustomed to practicing. Likewise, these elite sports allow them to establish new levels of thinking, social skills and sports skills that allow them to integrate into the federated sports system in Guatemala.

Contrarily, participants showed a low level of engagement in other physical activities including walking, cycling, rope skipping, playing tag, and football practice. The FUNOG initiatives follow the Sport-for-Development Theory (SFDT) recommendations for the effective programming of sport activities in the creation of mixed, inclusive spaces. This is achieved by combining sports to provide a wide range of physical activities that attract a larger population (Lyras & Welty Peachey, 2011).

### 10. Level of physical activity

Overall, the FUNOG participants show an elevated level of physical activity and over half of them do not report any hospital admissions or visits to the A&E, which shows their high perception of health and access to medical care. The remaining participants engage in little or no physical activity because of their neighbourhoods which may limit their displacement to suitable locations for the practice of sport. In this respect, one of the achievements of FUNOG is the establishment of safe spaces for participants to enhance their learning (Mandigo et al., 2018).

### 11. Level of health literacy

The participants who report a lower engagement in sport can be categorized as a) having fewer than three admissions or b) more than three admissions to hospital or to the A&E which also suggests a high perception of health. However, they demonstrate a low level of health literacy, which poses the question of why a sport-based intervention has had no impact on their health awareness (Fuller et al., 2010). It is necessary to highlight the importance of a thorough design and evaluation of the programmes to achieve results as significant as those of other programmes (Delva et al., 2010).

### 12. Level of Socio-Emotional Competencies

The FUNOG participants' social-emotional competences and purpose in life scores are low compared to those of other youth within the same age group, but they mimic the scores of populations also living in vulnerable contexts (Glazzard & Szreter, 2020; J. Martínez et al., 2020; Niyogi et al., 2020; Shima et al., 2021, 2021). As age increases, the score obtained in the variable of purpose in life decreases, and a lower score in interpersonal relationships determines a higher score in the variables pertaining to attention and care, and disease prevention. This is the result of cultural characteristics since life conditions lead youth to make independent and swift life decisions without relying on the support of others.

### 13. Level of self-esteem

The participants' self-esteem is high, and this is directly correlated with empathy, as proved in other studies (Shima et al., 2021). However, there is no relationship between self-esteem and purpose in life. There are few youth studies on this association and thus, the construct on life satisfaction is more frequently used (Arslan, 2019). This result is a consequence of the country's culture, which emphasizes that even in negative situations, participants should find positive aspects that allow them to feel good even if the conditions are adverse.

Therefore, despite the advantages of using sport for the improvement of academic achievement (Carratalá et al., 2020; Hunt & Hopko, 2009; Mannino et al., 2019), self-esteem (Bang et al., 2020; Lyras & Welty Peachey, 2011), the control of aggressiveness (Pino-Juste et al., 2019), and the detection of disease (Alvarez-Pitti et al., 2020; Spruit et al., 2017); (Benavides & Caballero, 2009; Smith, 2020), it appears that the impact of these programmes depends not only on the context or the staff (Cohen et al., 2020; Spruit et al., 2017), and further to this study, it is necessary to evaluate programme content to determine the impact of such programmes on the development of the personalities of at-risk youth.

#### 14. Conclusions

Given the scarce empirical evidence on the influence of health variables (level of physical activity, self-esteem, health literacy and mastery of socioemotional competencies), this study advances some relationships between the factors studied that allow us to approach the importance of these issues in groups at social risk. The youth who participate in the FUNOG Project live in the city or in its periphery, but have come from rural settings, displaced by their economic needs. Their education is precarious, but it is also a positive factor that only a minority has no formal education. Their parents have a certain level of education which permits them to work in the formal or underground economy in the City of Guatemala. Thus, the institution serves extremely at-risk youth.

The sport practices organized by the programme are successful in increasing the level of physical activity and maintaining good health. Over half of participants do not report any hospital admissions or visits to the A&E and have a high level of perception of health. They also have a high self-esteem. However, their levels of health literacy, social-emotional competences, and purpose in life are low.

Based on these results, it seems essential to make a more significant use of both the high attendance in a varied range of sports, and the high levels of self-esteem, to design and evaluate programmes using sport as an educational strategy to allow an improvement in health knowledge i.e. when and how to use health service; typical symptoms of usual diseases and their prevention; and the promotion of healthy habits, amongst others; the different social-emotional abilities and the purpose in life i.e. to know oneself and to define attainable goals; to act on principles and moral values; to discover individual emotions and to accept particular limitations, to assume a positive attitude in the face of adverse situations, and to work as part of a team.

#### Acknowledgements

The authors thank their colleagues in GIES-10 for their support and critical comments contributed to this study. They also thank the trainers at the Guatemalan Olympic Foundation for their involvement in this project, and Ms Vicky Stiles for her help in the translation and editing of the English version of this study.

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#### Disclosure statement

No potential conflict of interest was reported by the author(s).

#### Data availability statement

The data that support the findings of this study are available from the corresponding author, IP-P, upon reasonable request.

#### Citation information

Cite this article as: A descriptive analysis of the sport, health, and psychological characteristics of at-risk youth in Guatemala, Pedro Danilo Ponciano Núñez, Iago Portela-Pino & María José Martínez-Patiño, *Cogent Social Sciences* (2022), 8: 2098626.

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