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RECEIVED 17 March 2024

ACCEPTED 30 July 2024

PUBLISHED 04 September 2024

## CITATION

Smith Palacio E, Bravo-Sánchez A,  
Díaz Ureña G and Fraile J (2024) Changes in  
perception of gender differences in university  
male students after a self-determination  
program.

*Front. Educ.* 9:1402373.

doi: 10.3389/feduc.2024.1402373

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# Changes in perception of gender differences in university male students after a self-determination program

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The aim of this study is to explore the outcomes of an intervention program to promote prosocial behavior, foster personal responsibility and overcome gender stereotypes in sports. This is a mixed (qualitative-quantitative) quasi-experimental study using a single group. The sample consisted of 72 male university students ( $21.9 \pm 8.85$  years) enrolled in Spanish university. The program is based on the Self-determination Theory and consisted of 26 sessions. A teaching guide for gender equality in physical education, the "It Grows" program. The results of the study indicate that, firstly, the program is effective in significantly raising scores for the variable Personal Responsibility, improving decision-making and commitment to one's own goals. Secondly, there was an increase in Prosocial Behavior, indicating greater degrees of empathy. Third, processes of intrinsic motivation also improved, with significantly higher scores in Basic Psychological Needs. Fourth, there was a decrease in the prevalence of gender stereotypes and sexist attitudes. An analysis of the pre-intervention correlations between variables indicated a positive and significant correlation between Personal Responsibility and Basic Psychological Needs ( $p < 0.001$ ;  $r = 0.700$ ), and between Responsibility and Prosocial Behavior ( $p < 0.001$ ;  $r = 0.504$ ). After the intervention program, a positive correlation was found between scores for Personal Responsibility and Basic Psychological Needs ( $p < 0.001$ ;  $r = 0.839$ ) and between Personal Responsibility and Prosocial Behavior ( $p < 0.001$ ;  $r = 0.624$ ). After the intervention program a negative correlation was also found between scores for Personal Responsibility and Gender Stereotypes ( $p < 0.001$ ;  $r = -0.281$ ).

## KEYWORDS

equality, gender, sports, education, program

## Introduction

### Perception of the difficulties in the practice of women's sports

There is an evident need for Physical Education (PhysEd) programs that foster the positive growth and development of young people (Rosado et al., 2022). Programs for Personal and Social Responsibility have proven effective in developing greater empathy, motivation and emotional intelligence, demonstrating that PhysEd is important not only in terms of physical fitness and motor skills but as an essential element in any educational program (Ambrós, 2023).

The World Health Organisation (WHO) has raised the alarm on the growing physical inactivity of people of all ages and especially young people throughout the world (Chaput et al., 2020). In this context, Physical Education (PhysEd) plays an essential role in promoting physical activity and the acquisition of healthy habits (Fairclough et al., 2018). Research has shown that, in the case of PhysEd, the time dedicated to physical activity is highly unequal in terms of gender (Kirkham-King et al., 2017; Mayorga-Vega et al., 2019), where male students generally show much higher levels of physical activity than female students. This has been observed at both the Primary and Secondary Education levels.

A number of studies have also noted that the motivational predisposition of students is the key to their engagement in physical activity and interest in Physical Education (Stelzer et al., 2004; Moreno et al., 2006; Herrmann et al., 2024). Unfortunately, as students advance through their school years the levels of motivation, satisfaction and perceived utility of physical education tend to decrease, and especially among girls (Lago-Ballesteros et al., 2018).

Authors such as Rink and Hall (2008) have found that the negative perception of PhysEd among girls is due to the incongruence between the difficulty of the tasks assigned in class and their actual motor skills. Thus, it seems that the methodology used in PhysEd are more tailored towards male students and fail to motivate and interest female students.

## Development of personal responsibility

One important model that has been implemented in Physical Education and Sports in the last decades has been that of Personal and Social Responsibility (Hellison, 1985), created to harness physical activity and sports to foment positive values and develop personal responsibility among young people at risk of social exclusion. The primary aim of Personal and Social Responsibility, is to develop the personal skills and competences for these students to successfully meet the challenges in their daily lives. And they can respond effectively to difficult situations. The key elements of the program are: (a) self-directed learning; (b) strengthen the teacher-participant relationship; and (c) transferring difficult situations from sport to life. Both the content and methodology of the Personal and Social Responsibility program are related to Bandura (1997) Social Learning Theory and the Positive Development Theory (Shek et al., 2019; Carreres-Ponsoda et al., 2021; García et al., 2021). The goals of the program are to (1) improve students' social skills; (2) fostering a sense of responsibility both for oneself and for others; and (3) develop personal control strategies. As stated by Kohlberg and López (1982) and Piaget (1996), the development of personal responsibility focuses on personal commitment and taking on the challenge of life to achieve personal and professional success.

## Development of prosocial behavior

For Yao and Enright (2022), Prosocial Behaviour can be defined as a willingness to help others, involving emotional awareness, altruism and cooperation. For Caamaño and Leiva (2024), prosocial behavior goes beyond correct behavior, it is having the initiative to go out in situations of inequalities or social disadvantages. Prosocial Behavior refers to behavior that involves sharing, supporting and

protecting others. The principal factors which facilitate Prosocial Behavior are empathy, moral judgment and positive emotions. Empathy is thus an important factor in the development of effective interpersonal skills such as problem solving (Saltos et al., 2020). For authors such as Aguirre-Loaiza et al. (2020), empathy also includes the capacity to commit to others and put oneself in their position. The practice of sport encourages the acquisition of moral values and positive patterns of behavior, boosting social skills such as mutual respect, cooperation, fair play and tolerance. All of these issues may be considered as Prosocial Behavior (Smith-Palacio et al., 2021; Piñeiro López et al., 2022; Figueroa et al., 2024).

A number of authors (Parise et al., 2015; Elizalde et al., 2024) maintain that sports programs enhance pro-sociality and improve moral reasoning, mitigating antisocial behavior. The term antisocial behavior refers to actions which are intended to harm, prejudice or denigrate others. Antisocial behavior in sport is manifested in cheating, faked falls or injury (Kavussanu and Stanger, 2017). Other authors (Escobar et al., 2024) highlight the importance of evaluating models of pro-sociality through sports, noting that not all sports equally discourage aggressive behavior and that the key to any prosocial sports program must be fostering moral behavior. Thus, programs that both encourage and facilitate the evaluation of moral behavior in sports are an essential element of Physical Education.

Similarly, Sari et al. (2024) consider sports to be the ideal means to promote positive values among young people. The concept of Positive Youth Development (PYD) is an effective approach in the development of these values and behaviors and there is a great deal of literature dealing with the relation between sports and the development of reasoning skills among young people (Camiré and Santos, 2019; Kendellen and Camiré, 2019; Strachan et al., 2020).

## Basic psychological needs

According to Ortiz and López-Walle (2022), motivation is a psychological mechanism that governs the direction or intensity of behavior and is therefore an essential element in any commitment and engagement and can be transferred from the academic sphere to one's personal life. An understanding of the Basic Psychological Needs of students is provided by the Self-determination theory by Ryan and Deci (2017). The focal point of this theory is to determine contexts which facilitate or hinder the development of intrinsic motivation and healthy psychological habits (Ryan and Deci, 2000; Huhtiniemi et al., 2019; Martínez Heredia et al., 2020). Furthermore, motivational regulation, driven by processes of self-determination are essential to the notion of autonomy. In this line, Mosqueda et al. (2019) propose certain types of motivation: intrinsic motivation (referring to an orientation towards autonomy and informed interpretation of circumstances); extrinsic motivation (referring to actions subject to external pressures rather than independent choice) and demotivation (referring to involuntary actions lacking clear purpose and the perception that outcomes do not depend on one's actions).

Ryan and Deci (2017) describe Basic Psychological Needs (BPN) as the psychological nutrients necessary for personal growth, integrity and wellbeing. They also argue that BPN are drivers of personal satisfaction and wellbeing and the failure to meet these needs can

contribute to the appearance of certain pathologies. These authors highlight three key BPNs: Autonomy, referring to the perceived ability to direct one's own life; Competence, referring to the perceived effectiveness and mastery of tasks; and Relation, the feeling of meaningful interaction with others.

## Gender stereotypes in sports and physical activity

The influence of the media can have a direct impact, consciously or unconsciously, on students, often limiting the motivation of girls and leading them to assume predetermined social roles (Mateo-Orcajada et al., 2021; Chihuailaf-Vera et al., 2024). This can also be the case with textbooks which employ sexist language or stereotypes and which may be subtly reinforced by teachers (Alvariñas-Villaverde and Pazos-González, 2018). The problem is accentuated when girls lack positive role models and contemporary society assigns predetermined roles through toys, games, sexist films, etc. There is a failure to recognize the achievements of women in sport, as well as in science and politics, all of which contribute to the notion that sports is a masculine pursuit. Stereotypes are understood as a set of preconceived values, roles or beliefs inculcated in men and women and generally accepted by society (Navarro-Patón et al., 2020; Soberanis and Pech, 2023). It may be said, in line with Amurrio Vélez et al. (2012), that gender stereotypes are characteristics and traits attributed to an individual based on their gender. These characteristics are assigned according to the roles and identities traditionally ascribed to men and women. García Pérez et al. (2016) explain that gender stereotypes are assimilated through cultural and social contexts and that, just as they are learned, they can be modified or overcome through learning. For Ferree and Hall (1996), the concept of gender socialization is directly related to the social expectations, social control and struggles which sustain traditional roles and behavior among men and women.

Currently, physical education plays an important role in overcoming these gender stereotypes. A wide range of programs have been implemented aimed at different populations with different themes and orientations (Mateo-Orcajada et al., 2021; Tyarakanita et al., 2021). It is necessary to overcome gender stereotypes that present girls as less physically active than boys (Arrebola et al., 2019; Monforte and Colomer, 2019).

Considering this, we will explore the effect of a program which promotes (1) Personal Responsibility and, consequently, the taking of personal decisions and commitments based on personal goals; (2) Prosocial Attitudes as a consequence of empathy with others; (3) the influence of motivational processes among students in the development of Basic Psychological Needs; and (4) the overcoming of Gender Stereotypes in sport, leading to greater recognition, integration and engagement of women with sports.

## Objectives and research questions

The aim of this study is to explore the impact of a program to promote equal opportunity in university education in terms of Personal and Social Responsibility, Prosocial Behavior, Gender Stereotypes and the Basic Psychological Needs of students of Physical Activity and Sports Sciences.

## Method

The research used a mixed quantitative-qualitative methodology through narrative analysis. This methodology follows the essential elements of the interpretive paradigm, prioritizing the explanation and comprehension of experiences related to social life and its meaning to individuals (Coffey and Atkinson, 2003). Unlike qualitative methodology, in mixed methodology, concepts of triangulation and multiple operationalism are included in order to validate more than one method as part of the analysis process. In this way, the findings found from two or more methods reinforce the belief in the results (Ballesteros et al., 2024).

This research adhered to the principles of the Declaration of Helsinki De la WMA (De La WMA, 2013) and the ethical guidelines of the American Psychological Association (2016). It was approved by the ethics committee of the Francisco de Vitoria University, registration number 5/2024. All participants at the university gave informed consent prior to their participation in the study.

## Participants

A total of 72 male students, between the ages of 19 and 24 ( $21.0 \pm 7.9$  years), participated in the study. All were Spanish university students in the second year of the Degree in Physical Activity and Sport Sciences. A non-probability convenience sampling method was used.

## Procedure

The intervention consisted of 28 sessions. In the first session, students were informed of the procedure of the research, the scales to be completed and the pre-intervention data was collected. In the subsequent 26 sessions the 'It Grows' program was implemented for the promotion of gender equality among students. The order of the intervention was as follows: During the first 3 weeks (6 sessions) dynamics were conducted during warm-up period; the following 2 weeks (4 sessions) were dedicated to the resolution of case studies using the Wooclap platform; the following 7 weeks (14 sessions) involved practices in equality, course content and the development of the program; the final 2 sessions were dedicated to debate on videos. Finally, in the last session of the program students again completed the questionnaires on Personal Responsibility, Prosocial Behavior, Basic Psychological Needs and Gender Stereotypes in Sport and gave their feedback on the program, the changes in their way of thinking and the utility of the 'It Grows' program in the training of athletes.

## 'It grows – women and sport' program

The 'It Grows' program (Lamoneda Prieto et al., 2023) incorporates a series of activities designed to promote social equality, break gender stereotypes in sport, improve Prosocial Behavior and increase levels of Personal Responsibility among university students (Annex 1). The program was implemented between January and May of the 2021-2022 academic year and serves as a guide and framework to raise awareness of the achievements of women in sport, promote

attitudes of equality and to contribute to the development of Prosocial Behavior and Responsibility. The program works in two ways: through directed activities and interactive activities. Our intervention consisted of 5 phases, gradually reducing the role of teachers and giving increasing protagonism to students. In the first sessions, directed by teachers, students experienced habitual situations involving commonplace gender stereotypes and about which students were asked to give their opinion and course of action. With the help of the online tool Wooclap, students responded to virtual situations and contexts, with themes such as “Women and Sport.” The questions were principally related to Prosocial Behavior and presented as open questions. At the end of this process students watched educational videos contextualizing the questions followed by an evaluation of their responses (Table 1).

## Instruments

### Personal responsibility

The validated Spanish version (Escartí et al., 2011) of the Personal and Social Responsibility Questionnaire (PSRQ) by Li et al. (2008) was used to evaluate the impact of the program on Personal Responsibility. This tool consists of 14 items divided into two factors of seven items each: social responsibility (Items 1 to 7) and Personal Responsibility (items 8–14). Participants responded using a 6-point Likert-type scale from 1 (totally disagree) to 6 (Totally agree).

### Prosocial behavior

The Prosocial Behavior Questionnaire (Martorell et al., 1995) for children and adolescents was used to evaluate collaborative behavior, such as sharing, encouragement and understanding. This tool has no time limit for completion consists of 55 items with six possible responses, from 1 (Totally disagree) to 6 (Totally agree).

### Basic psychological needs

To explore the area of Basic Psychological Needs, the study made use of the Spanish version (Lozano et al., 2024) of the Basic Psychological Needs in Exercise Scale (BPNES: Vlachopoulos and Michailidou, 2006). The instrument begins with the phrase “In my Physical Education classes... “followed by 12 items that measure the perception of autonomy (4 items, e.g.: “The way I exercise is in agreement with my choices and interests”), perception of competence (4 items, e.g.: “I feel I have made a lot of progress in relation to the goal I want to achieve”), and social relation (4 items,

e.g.: “I feel comfortable with the people I exercise with”). The tool uses a 5-item Likert-type response scale from 1 (“Totally disagree”) to 5 (Totally agree).

### Gender stereotypes in sports

The instrument Gender Stereotypes in Sports among Spanish Children and Adolescents (CEGAFD) (Granda et al., 2018) was used, consisting of 24 items with a 5-point Likert-type response scale (1 = Totally disagree; 5 = Totally agree) that addresses the following four dimensions or factors: Gender differences and their relation to sports (for example: “In general, boys are better at sports than girls”); Sports and gender (for example: “It is more difficult for female athletes to make it in sports”), Gender stereotypes associated with sports and physical activity (for example: “Some sports are for women and others are for men”), Beliefs about sports and gender (for example: “Girls can develop their physical abilities as much as boys”) and Physical Education classes and gender (for example: “In PhysEd, the teacher normally demands more from boys than girls”).

### Evaluation of the program

Open questions were posed at the end of every resolution of the case (Case 1: On Gender and Sport; Case 2: Empathy, gender stereotypes; Case 3: Disadvantages due to technical skills). How does the player feel when their teammates do not collaborate with them? How should a player react when they feel excluded from a sports activity? What would you say to classmates who want to win at any price? What would your family think of this situation? What social commitment does these cases involve?

### Wooclap tool

The Wooclap tool is an online, self-report educational platform. Researchers provide the participants with a password to access a series of cases to be resolved, learning videos and open questions on Prosocial Behaviour. Participants completed these assignments using their own criteria and reasoning. The Wooclap tool then generates a report of the responses.

### Individual reflections of the sample

During the intervention program, students analyzed an article entitled “Perceived difficulties in the practice of Sports and Physical Activities among adolescent girls and their change over time” (de Quel Pérez et al., 2010). Subsequently, outside class time, students were asked to write a 2,400 words summary of the article, describing its principal contents and their personal impressions and opinion.

TABLE 1 Design of the program ‘It Grows – Women and Sport’ – Self-Determination Theory by Ryan and Deci (2000).

Program ‘It Grows – Women and Sport’			
Objectives	Means	Activities	Self-Determination Theory (BPN)
Analyze the results in terms of Gender differences	The Wooclap educational tool	Group dynamics, debates, etc.	Autonomy, the perceived ability to direct one’s own life
Analyze the benefits in terms of prosocial behavior	Portfolios	Video-analysis	Competence, the perceived effectiveness and mastery of tasks
Analyze the benefits in terms of Responsibility among university students	Wooclap statistics	Problem solving	Relation, the feeling of meaningful interaction with others

## Data analysis

The normality of the variables were analyzed by means of the Shapiro Wilk test. Assuming all variables had a normal distribution ( $p > 0.05$ ), the pre- and post-intervention results were analyzed using a Student's *t*-test for related samples. The effect size was calculated using the Cohen (1988) scale: an effect size below 0.2 is considered small, proximate to 0.5 is considered moderate and over 0.8 is considered large. Furthermore, the relation between the different variables was studied using the Pearson's *r*. The confidence interval was established as 95%. The reliability of the questionnaires was calculated using Cronbach's alpha.

A qualitative analysis was conducted for a deeper exploration of the thinking of students about the educational intervention program. Using the Wooclap platform, the personal contributions and criteria of participants was analyzed based on their work and final evaluations in the open questions. The research has an interpretive approach to existing interactions before the same object of study, triangulating the information collected in different instruments (Richards and Hemphill, 2018).

To certify the reliability, transferability and credibility of the results, coinciding text patterns were coded to permit the analysis of text extracts (Salmona and Kaczynski, 2024). Text and ideas saturation techniques were also used to establish thematic areas. After deliberation, the documents were organized and grouped into categories and sub-categories in line with the aims of the study and the specificity and coherence criteria (Trainor and Graue, 2014).

## Results

### Reliability of the questionnaires

For the sub-scale social responsibility, the  $\alpha$  values were 0.805 and 0.705 for personal responsibility. In prosocial behavior, the Cronbach's alpha for reliability was between 0.724 and 0.814. The  $\alpha$  values for the three sub-scales evaluating Basic Psychological Needs (perceived autonomy, perceived competence and social relations) were: 0.797, 0.860 and 0.906, respectively. The reliability, according to Cronbach's alpha for each of the subscales of Gender Stereotypes in sports were between 0.675 and 0.805 for all the sub-scales with the exception of 'Beliefs', which scored 0.310.

### Quantitative analysis

Participants in the program showed significant improvement in all variables of the study: responsibility in PhysEd, satisfaction of Basic Psychological Needs, Prosocial Behaviour and Gender Stereotypes ( $p < 0.05$ ). No significant differences were found in the sub-scales  $n^\circ 2$ , sport and gender,  $n^\circ 4$ , beliefs, and  $n^\circ 5$ , PhysEd classes referring to "Gender Stereotypes" (Table 2).

### Qualitative analysis

A total of 513 text fragments were extracted, the majority positive comments (486 versus 27) Figure 1, firstly referring to Personal Responsibility (139 positive fragments and 18 negatives; for example: 'hit them'). The second most common theme was related to prosocial

behaviour (153 positive fragments and 18 negatives; for example: 'I only know I do not know anything'). The third most common referred to Basic Psychological Needs (BPN) (100 positive fragments and 32 negative fragments; for example: 'buy a piñata) and finally, the fourth most common theme was in relation with Gender Stereotypes (76 positive fragments and 4 negative fragments; for example: 'a good slap is always a win but a little talking can also work'). The distribution of the responses is shown in Figures 2, 3.

### Responsibility (146 fragments)

The Wooclap tool was used to extract the opinions of the participants regarding social skills such as empathy, solidarity or assertiveness. These comments also highlighted the need for players to feel supported by their coaches and trainers.

The female students does not feel supported by their coach, since they don't offer opportunities to play and also don't help them in training. They feel excluded from the team (A 11 male).

The person feels that they aren't given the chance that everybody deserves, and so they feel sad and excluded (A 14 male).

We can help her by showing support/empathizing with her. Being assertive (A 8 male).

### Prosocial behavior (171 fragments)

The most frequent comments extracted from the final document (portfolio) refer to prosocial behavior, arguing about the importance of incorporating into sports behavior such as: helping an injured player, respect towards the losing team, being cordial at the start of the match and respecting the referee.

When a player is injured during a game. The game stops until the player is helped off the pitch/Because there are a lot of followers and that may serve as an example in daily life. What happens in sports is a reflection of reality (A 19 male)

For the good of all and for the sport to be enjoyable/Because it helps you to develop essential values for life (A 20 male)

Shake hands with the rial after losing a match (A 3 male)

Set goals, both for sports and in social life so everyone can see the positive values for society (fellowship, effort and dedication) (A 7 male)

Because sports should be a source of positive values and beliefs for everyone and especially for kids beginning to practice sports (A 10 male)

When the referee calls a penalty that is totally unfair and the player complains because it wasn't really a penalty (A 10 male)

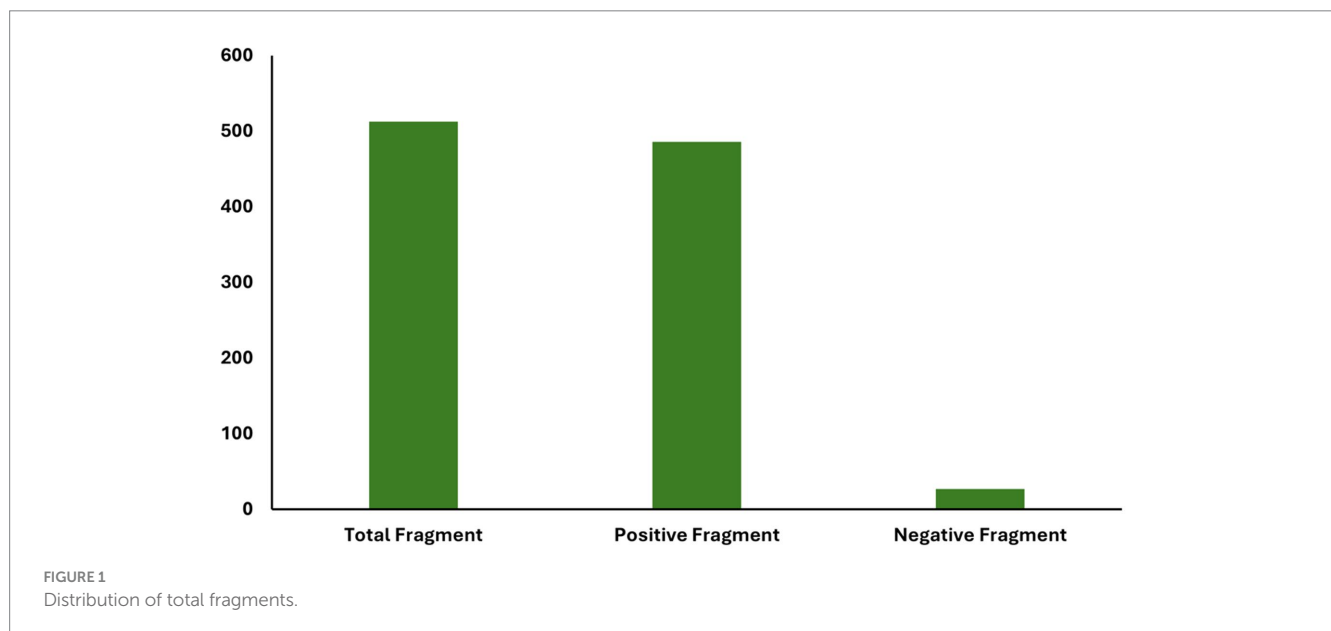
### Gender equality (132 fragments)

Many participants believe that the abandonment of sports and physical activity by girls is due to the limited motivation provided by

TABLE 2 Responsibility, pro-sociability, BPN and gender stereotypes before and after the it grows program [Mean (standard deviation)].

	Pre-test	Post-test	Diff	z	d	p
<b>Responsibility in PhysEd</b>						
1. R. Social	2.67 (1.05)	4.21 (0.39)	1.54 (1.04)	-11.625	1.4	<0.001
2. R. Personal	2.77 (0.82)	3.76 (0.50)	0.99 (0.88)	-8.814	1.1	<0.001
<b>Prosocial behavior</b>						
1. Empathy	2.86 (0.66)	3.84 (0.30)	0.98 (0.70)	-11.007	1.4	<0.001
2. Respect	2.93 (0.58)	3.67 (0.23)	0.74 (0.63)	-9.172	1.2	<0.001
3. Sociability	2.94 (0.70)	3.90 (0.26)	0.95 (0.68)	-11.017	1.4	<0.001
4. Leadership	3.00 (0.74)	3.85 (0.32)	0.85 (0.76)	-8.749	1.1	<0.001
<b>BPN satisfaction</b>						
1. Autonomy	2.95 (0.99)	3.81 (0.76)	0.85 (1.19)	-5.634	0.7	<0.001
2. Competence	2.93 (1.13)	4.03 (0.59)	1.09 (1.14)	-7.494	0.9	<0.001
3. Relation	2.87 (1.20)	4.07 (0.53)	1.19 (1.29)	-7.344	1.0	<0.001
<b>Gender stereotypes</b>						
1. Diff. associated with gender	3.28 (0.55)	2.41 (0.92)	-0.87 (1.06)	6.439	0.8	<0.001
2. Sport and gender	2.99 (0.73)	2.82 (1.00)	-0.17 (1.25)	1.060	0.1	0.293
3. Stereotypes	3.22 (0.65)	2.50 (0.85)	-0.72 (1.07)	5.298	0.6	<0.001
4. Beliefs	2.93 (0.80)	3.04 (0.79)	0.10 (1.17)	-0.730	0.9	0.468
5. PhysEd Class	2.97 (0.83)	2.81 (0.90)	-0.15 (1.16)	1.402	0.1	0.164

An analysis of pre-intervention correlations shows a positive and significant relation between scores for Personal Responsibility and Basic Psychological Needs ( $p < 0.001$ ;  $r = 0.700$ ), and between Responsibility and Prosocial Behavior ( $p < 0.001$ ;  $r = 0.504$ ). The correlations after the intervention reveal a positive relation between scores for Personal Responsibility and Basic Psychological Needs ( $p < 0.001$ ;  $r = 0.839$ ), and between Personal Responsibility and Prosocial Behavior ( $p < 0.001$ ;  $r = 0.624$ ). Furthermore, after the intervention a negative relation was observed between scores for Personal Responsibility and Gender Stereotypes ( $p < 0.001$ ;  $r = -0.281$ ). Among the results of the subscale of Gender Stereotypes in Sport, there was a significant improvement in the variables of Differences Associated with Gender and, Stereotypes ( $p < 0.000$ ). No significant differences were found in the variables Beliefs ( $p = 0.372$ ) and Physical Education Class ( $p = 0.204$ ) after the intervention.



Physical Education classes. Others confirmed that girls often provide excuses for not doing more sport. For example:

Honestly, from my point of view, and with all due respect, I think a lot of excuses are given that may lead women to avoid sports in many cases. I understand that it may be unusual to see a young

girl kicking the ball around and maybe some little boy makes some stupid comment but, you have to be strong, and with practice anyone can learn to kick a ball one way or another. Things have changed and are much more controlled now, and that's good, since everyone has the same rights, men, women, tall, short, etc. (A10 male)

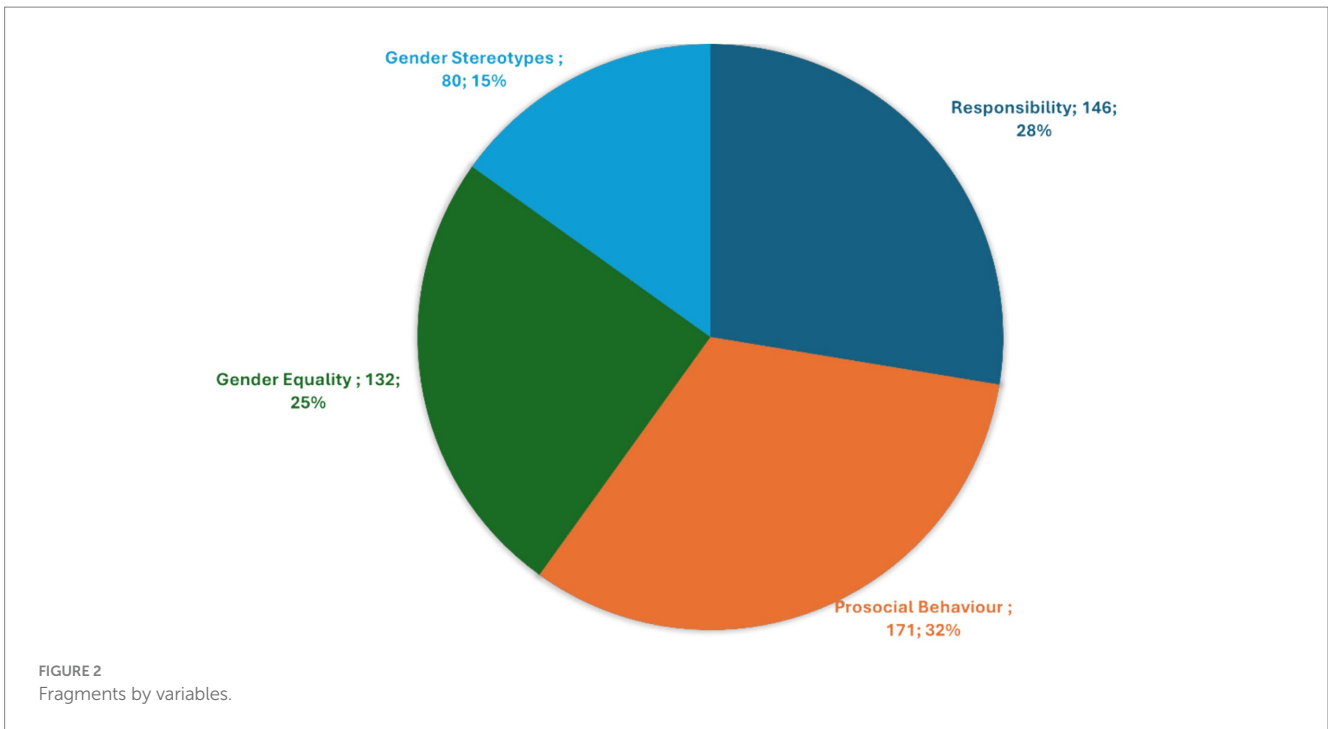


FIGURE 2  
Fragments by variables.

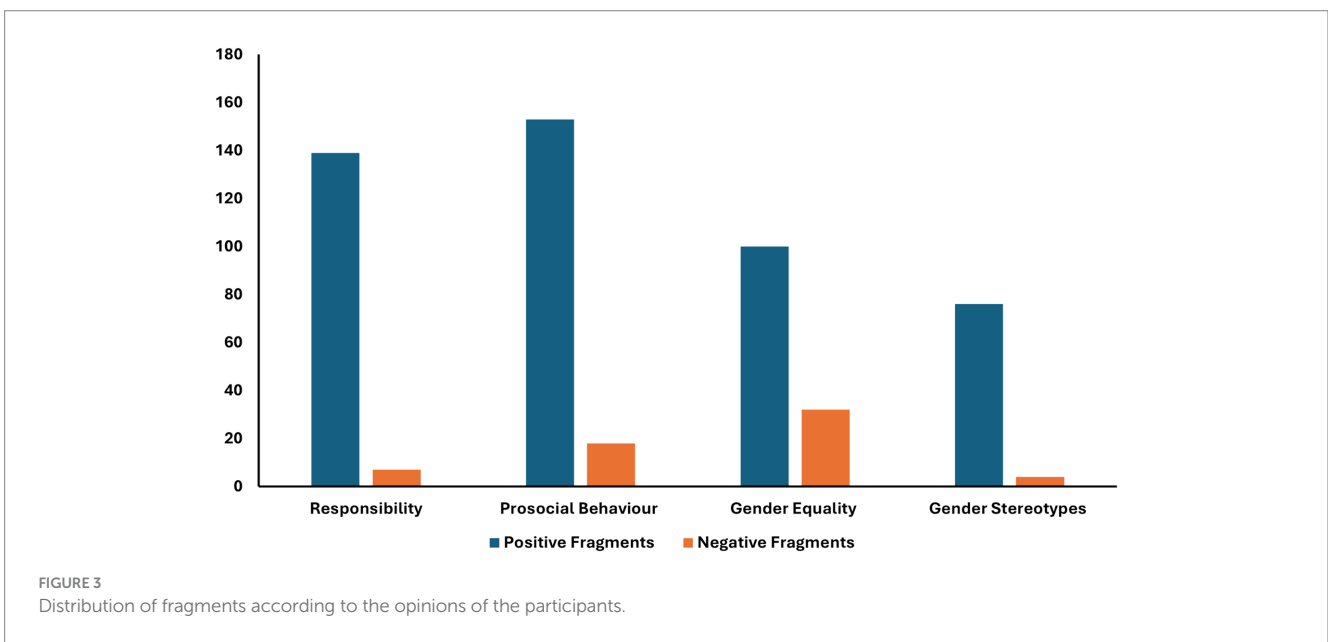


FIGURE 3  
Distribution of fragments according to the opinions of the participants.

The growth of women’s sports has been so spectacular in recent years that you could think that it barely existed before. It is surprising to learn about how famous some women athletes were in the early XX century. (Individual work. male)

It’s interesting to know that, internationally, the biggest change happened in 1912 when the Swedish Olympic Committee included water sports in the official program, and so swimming become the first female Olympic sport. This caused a backlash by the founders of the modern Olympic Games. In response, the French athlete Alice Milliat founded the Female Sports Federation of France in 1917. (A2 male).

### Gender stereotypes (80 fragments)

The contributions were aimed at empathising with the situation experienced by the female student and the proposals of dynamics that empowered the female players, promoted group cohesion and the search for solutions in the face of conflicts. The responses largely rejected the abandonment of sports. An example of a negative comment: “*Buy her a piñata*”; an example of a positive comment: “*Tell the coach to speak to my teammates*.”

“I would tell them not to put up with any abuse, to be brave, and to tell their teammates what they think and if things don’t change then speak to the coach to deal with the situation or else kick the problematic

ones off the team to avoid uncomfortable situations in the club with very firm values against abuse. Stop violence” (A2 male)

A number of proposals were made for initiatives such as dynamics for conflict resolution in response to the situation of the player. These dynamics focused on role changes, changing the rules of the game and analyzing the problems.

“I’d give them good boost (motivational) to encourage them to continue with sports” (A23 male)

Some participants believed, in this case, it was essential to work on motivation and self-esteem to continue practicing sports.

“Talk to my parents and with the coaches to reach a solution / face up to my teammates and make my feelings clear” (A2 male)

One group of participants supported the idea of a family intervention in these cases, not limited only to the sports club or the team of the player.

“Talk to my teammates to reach a solution because I can improve, and they can also change their behavior” (A3 male)

“Speak with her and with the rest of the team so they know how Alicia feels and so get over the situation with the help of teammates” (A2 male)

“Speak to her in a constructive way, not a destructive way, support her and help her to improve and to see that its not true its her fault the team lost. We are a team and we are all responsible for what happens in the match” (A18 female)

## Discussion

The aim of this study was to analyze the effects of a program to promote equality in university education, focusing on the variables of Personal Responsibility, Prosocial Behavior, Gender Stereotypes and Basic Psychological Needs. The results after the implementation of the intervention program indicate significant changes in the majority of the variables and a positive correlation between Personal Responsibility and Prosocial Behavior and Basic Psychological Needs as well as a negative correlation between Personal Responsibility and Gender Stereotypes.

Regarding Personal Responsibility, the study found a 43% increase in this variable after the intervention, which may be related to the exposition of criteria and analysis between equals guided by researchers. This hypothesis is in line with the previous findings; participants of a study evaluating the effects of an intervention program based on a hybrid model (Sport Education - Personal and Social Responsibility) showed significant improvement in their levels of Personal Responsibility (Menéndez-Santurio and Fernández-Río, 2016). This suggests the effectiveness of novel approaches in improving behavior and attitudes. Another study aimed at furthering the development of Personal Responsibility, confirmed that improvements in this area also enhance general quality of life (Sánchez-Alcaraz et al., 2012). A number of authors, including Sánchez-Alcaraz et al. (2014), have noted that satisfactory levels of

Personal Responsibility also correspond to greater sportsmanship and lower levels of aggression. Thus, this research identifies three directions of opinion of the students. Firstly, opinions on the need to improve relation between equals. For example, the vulnerability of the protagonist in the case opened a debate between students and an analysis of the best means of intervention. Secondly, opinions on the need to enhance the teacher-student relation, especially in terms of the teacher listening and creating a feeling of group belonging. This notion of belonging is very important given its effective transference to other areas of life, family, school and society. Finally, another line of opinion focused on the work to develop positive values using educational tools combined with athletic activities for social learning. These results are in line with those of other studies (Wright et al., 2018; Carreres-Ponsoda et al., 2021) which found notable improvements in the scores for Personal Responsibility after the implementation of an education intervention program in this area.

The study confirmed an increase of 25.9% in the values corresponding to Prosocial Behavior, which may be associated with the capacity for empathy in the situations analyzed in the classes. Similarly, studies such as that by Del Carmen Rivera-Mancebo et al. (2020), found significant improvements in Prosocial Behavior in all subscales: social withdrawal, social timidity, leadership and social relations after the implementation of a program using the Sport Education Model (SEM). These results confirm the effectiveness of educational programs in improving behavior. Furthermore, the results regarding Prosocial Behavior in another study (Calderón et al., 2016) confirm the development of shared common objectives, putting aside personal interests in favor of inclusion, participation and collaborative work. Other studies (Goudas and Magotsiou, 2009; Prieto et al., 2024) into improving Prosocial Behavior, affirm that the development of cooperative attitudes has a positive impact on social relations, reducing disruptive behavior. Among the most common opinions of students participating in this study were the importance of fair play above winning at all costs, respect for rivals and teammates. The participants analyzed the decisions of the referee and the willingness of the players to accept them without aggression or violence. These are interesting debates through which participants engage in the principles of the Sport Education Model (Siedentop, 1994). This model proposes six elements to foster Prosocial Behavior: seasons, affiliation, recording keeping, formal competitions, festivity and culminating event. Specifically, the model aims to improve student motivation by assigning roles and tasks.

Regarding Basic Psychological Needs, the results confirm a significant improvement of 33%, which may be related to the development of personal competences throughout the intervention program. Other similar studies (e.g., Mosqueda et al., 2022) showed different results, finding no significant changes in the development of Basic Psychological Needs through the motivation program. However, a study by Sánchez (2022) showed significant results in the relation between Personal Responsibility and Basic Psychological Needs, in line with the findings of our research. This variable assumes greater importance as the students improve their performance, experience feelings of greater personal and group achievement and improve relations with others.

This study also analyzed the opinions of participants regarding the abandonment of physical activity and sports by girls. Student comments in this regard were generally oriented towards the importance of motivation and the adaptation of PhysEd class content for girls. These opinions are in line with the Self-determination Theory



by Deci and Ryan (1995) which focusses on motivation, person growth and the satisfaction of Basic Psychological Needs (BPN) (competence, autonomy or novelty and relation). Regarding BPN, the majority of comments by participants referred to the areas of personal competence and autonomy. A study by Knowles et al. (2018) found improvements in all BPN and student participation after conducting a 20-session sport education program. Similarly, Wallhead et al. (2014) implemented a program that included handball, volleyball, basketball and floorball, which showed positive results for BPN and autonomous motivation. The results of the present study have been fundamentally positive, especially in terms of enhancing competence and autonomy; this may be due to the structure of the 'It Grows' program itself aimed at improving the direction, execution and corrections within the sessions. A study by Cantú-Berrueto et al. (2016) also found positive results in terms of the satisfaction of BPN among sports trainers. The results show that the perception of support for autonomy from the trainer/coach is positively correlated with the satisfaction of Basic Psychological Needs, particularly relation and autonomy.

After the intervention program, there was a significant reduction in the values of two subscales of the Gender Stereotypes in sports (Diff. Associated with gender and stereotypes), which may be related to the reflection activities incorporated into the program. Similarly, a study by Martínez-González et al. (2021) into Gender Stereotypes in sports using a sample of 1,147 participants found that an individual's actions can have a large impact on others and that the family environment is the key to eliminating Gender Stereotypes through programs aimed to eliminate this phenomenon. For Solmon (2014), educators play a decisive role in the design of educational sessions aimed at eliminating Gender Stereotypes and boosting the motivation of girls to practice sports and physical activity.

Another aim of the program is to analyze perceived gender differences. The opinions of participants confirmed the effectiveness of the program and students clearly acknowledged inequalities in treatment and opportunity due to gender. Thus, the program included dynamics to ensure equal opportunities were offered regardless of gender, diversifying roles and strategies for conflict resolution. Participants also considered debates to be an effective educational tool with direct accompaniment between students and teachers in especially critical situations. These proposals are particularly interesting as they are in line with the Theory of Moral Development by Kohlberg (1987). For this author, moral reasoning refers to judgments on the acceptance or deviation from social norms, analyzed using moral dilemmas or role playing paradigms, closely associated with morality, age and psychological development. The application of this theory and moral paradigms has led to the development of a moral reasoning scale. On the other hand, the results of this study agree with Chihuailaf-Vera et al. (2024) in the validation of an instrument to measure gender stereotypes in sport with a sample of 321 university students found more sexist beliefs in the male gender and the students seek to eliminate the binomial established by professional sport over women's sports specialties. For all of the above, it is recommended: (1) to work on the debates from the social perspective, giving space for the presentation of each of the students; (2) To exemplify through didactic material, use of images and video the involvement of women in the world of sport; (3) Show women's sports results and open debates about them; (4) To provide spaces for teacher-student mentoring, to clarify doubts; (5) Involve the family in training related to gender stereotypes in sport.

An analysis of the pre-intervention results show a positive and significant correlation between Personal Responsibility and Basic Psychological Needs and between Personal Responsibility and Personal Behavior. The results after the intervention show a positive correlation between Personal Responsibility and Basic Psychological Needs and between Personal Responsibility and Personal Behavior. Analysis also revealed a negative correlation between Personal Responsibility and Gender Stereotypes, in line with the findings of a study by Valero-Valenzuela et al. (2020) using a sample of 55 students and using an educational program based on a hybrid model of Social Responsibility and innovative gamification strategies. The results confirmed the prevalence of Personal Responsibility and the need for autonomy. This indicates that Personal Responsibility is the cornerstone of personal growth and prosocial behavior among students. The authors also found that the 8-month education program oriented towards improving motivation and physical activity led to a significant reduction in disruptive and violent behavior and anxiety and significant improvements in emotional well-being.

## Limitations

This study has certain limitations, one of which is the absence of external actors, such as family members, or the lack of individual mentoring offering the possibility for discussion with researchers. Another limitation was the use of the "It Grows" program alone and the absence of another program such as de Deportes (2010). The intervention period should be more extensive, 10 months rather than the 5 months in this study. The absence of a control group is another shortcoming.

## Future research

The aim is for this study to serve as a reference for future lines of research into gender stereotypes in physical activity in relation to the type of sports participants pursue and their recreation habits. Another future line of research may be the relation between gender stereotypes and the family experience of participants. Finally, there should be further research into the link between gender stereotypes, the classroom environment and academic results.

## Conclusion

The results of this research confirm the effectiveness of the "It Grows" program in developing attitudes of Gender Equality, Prosocial Behavior, improving Personal Responsibility and Basic Psychological Needs among university students. Furthermore, these results include a dedication to overcoming Gender Stereotypes in sports. The use of multi-dimensional methodologies such as "Self-determination Theory," the Sport Education model and socio-critical pedagogy enhance the rigor of the intervention program, particularly through group dynamics, debates, video-analysis, case resolution, role playing in sports competition, etc. The participants in the research associate a program promoting gender equality with the development of Prosocial Behavior and the elimination of Gender Stereotypes in sports.

## Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

## Ethics statement

The studies involving humans were approved by Universidad Francisco de Vitoria, registrado con el número 49/2021 y titulado: “It Grows Educación Física, Deporte y Mujer,” dirigido por D. Eulisis Smith Palacio, ha sido valorado en sus aspectos metodológicos, éticos y legales, en la sesión del CEI del día 3 de noviembre de 2021 obteniendo. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

## Author contributions

ES: Conceptualization, Funding acquisition, Writing – original draft. AB-S: Formal analysis, Software, Supervision, Writing – review & editing. GD: Investigation, Methodology, Software, Supervision, Writing – review & editing, Writing – original draft. JF: Formal analysis, Methodology, Validation, Writing – original draft, Writing – review & editing.

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## Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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## Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/feduc.2024.1402373/full#supplementary-material>

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