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Understanding Behavioral Regulation Towards Physical Activity Participation: Do We Need a Paradigm Shift to Close the Gender Gap?

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Abstract: Despite the well-established benefits of physical activity for both physical and psychological health, current inactivity prevalence continues to be particularly alarming among adolescents and youth. Equally of great concern is the existence of striking gender differences that represent a serious threat to reverse this problem. We aimed to analyze gender-related differences in self-reported physical activity and motivational regulations in a population-based sample of Spaniard adolescents and young adults (n = 9949). To this aim, we used an explanatory mixed-methods design by integrating quantitative and qualitative data using self-determination theory (SDT) as an analytic framework. Our results reported a gender imbalance in physical activity levels and autonomous forms of motivation to the detriment of adolescent girls and young women. An earlier and steeper age-related decline both in activity and volitional types of motivation was observed in girls. Qualitative outcomes depicted a range of key cognitive and contextual mechanisms undermining the degree to which physically active behaviors are volitionally undertaken among women. These findings highlight the importance of implementing gender-sensitive policy approaches and may have a useful application in suggesting how contextual factors and exercise settings can be addressed to foster volitional types of physical activity engagement in adolescent girls and young women.

Keywords: physical activity; gender; motivation; adolescence; young adults; self-determination theory; quantitative; qualitative

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1. Introduction

Physical inactivity is a leading risk factor for non-communicable diseases such as overweight and obesity [1], type II diabetes, cancer, cardiovascular diseases, or ischemic stroke [2,3]). World Health Organization (WHO) recognizes insufficient physical activity as a serious and growing public health problem and has set the global target of a 15% relative prevalence reduction by 2030 [4]. However, current levels of physical inactivity continue to be particularly high, and worldwide trends in recent years show no clear progress towards meeting this common challenge [5,6].

An important body of literature highlights the existence of major group disparities that represent a serious threat to reverse this trend in physical inactivity [7,8]. For example, descriptive epidemiological studies have consistently reported a gender imbalance to the detriment of women [6] as well as an age-related decline in physical activity levels [8]. The transition from adolescence to youth adulthood is a critical period in which a marked decrease in physical activity participation [9] and the highest sport attrition rate have

been evidenced in women [10,11]. Importantly, data show that, despite the prevalence of physical inactivity slightly decreased in boys in the recent years, there was no change over time in girls, leading to widening the gender gap from early adolescence [5].

Increasing physical activity levels in young women is important, not only because of the associated health benefits [12] but also because it represents a long-term sustainable strategy that would help to achieve WHO's goal by reducing gender disparities [7]. Furthermore, it is well known that physical activity behaviors established during early ages are likely to be maintained for a long time [11,13] and have an important impact on adult habits [14]. Thus, the intervention on the multiple causes that might perpetuate the low participation of adolescent girls and young women in physical activity remains an important goal of public health surveillance systems.

One promising approach is developing a tailored understanding of gender differences in motivation since it is a critical factor to help individuals initiate and maintain a physically active lifestyle [15]. According to self-determination theory (SDT) [16,17], the most widely used framework for examining the relationship between motivation and physical activity [18], different forms of motivation are conceptualized as lying along a continuum that ranges from higher to lower levels of self-determination, which refers to the degree to which behaviors are volitionally undertaken. Specifically, SDT differentiates between autonomous forms of motivation (e.g., intrinsic, integrated, and identified), controlled forms of motivation (e.g., introjected and external), and amotivation, which refers to lacking intentionality (see basic theoretical premises of SDT for greater detail [16,17]).

While a strong positive relationship between more autonomous forms of motivation and exercise adoption and maintenance has been consistently evidenced [18,19], there remain discrepancies regarding how gender may affect individual motivation to exercise. Several studies to date have found that men and women differ in the extent to which exercise regulations are expressed [20], demonstrating a higher prevalence in more self-determined forms of motivation in boys [21]. However, this literature remains unclear since meta-analysis data reported negligible effect sizes [22], and a number of studies have not revealed significant gender differences [23,24]. Furthermore, one of the main limitations in the existing literature is the heterogeneity of criteria for grouping individuals by age. Broad categories distinguishing between adolescence [25] or adulthood [26] are usually adopted. Considering the importance of this specific life transition period as a determinant of physically active behavior [27], the use of better approaches that account for dynamic changes in motivational constructs is likely to have greater value when it comes to an understanding of how behavior changes over time.

Hence, the main purpose of this study was to evaluate age and gender differences in self-reported physical activity levels and SDT's motivational regulations in a population-based sample of Spaniard adolescents and young adults between 12 and 25 years old. Since the majority of the studies thus far have utilized a quantitative approach, there is a potential gap in our knowledge regarding alternative person-centered and context-specific qualitative evidence. To fill this gap, we applied an explanatory mixed-methods design [28] by integrating quantitative and qualitative data using SDT as an analytic framework. The adoption of a mixed-method approach helps obtain more fine-grained insights into the gender-related mechanisms and processes that support more volitional types of physical activity engagement.

In light of previous evidence, we hypothesized the existence of a gender imbalance in levels of physical activity and autonomous forms of motivation to the detriment of adolescent girls and young women. Furthermore, physical activity levels and autonomous forms of motivation would decline with age over the transition from adolescence to young adulthood, although a different gender level modulation would be expected.

2. Materials and Methods

2.1. Research Design

The present study combined both quantitative and qualitative data using a sequential explanatory mixed-methods design [28]. The study was conducted in two phases, where a questionnaire-based quantitative data collection in Phase 1 informed the design of the qualitative focus groups studied in Phase 2. The qualitative data obtained from focus groups were used to clarify, explain, and enhance the findings from the quantitative data collected through questionnaires [29,30]. Thus, both approaches complemented each other and carried equal weight in the resulting discussion. Figure 1 shows the stages followed in the study design. Details about participants, methods, data collection, and data analysis of each phase can be found in subsequent subsections.

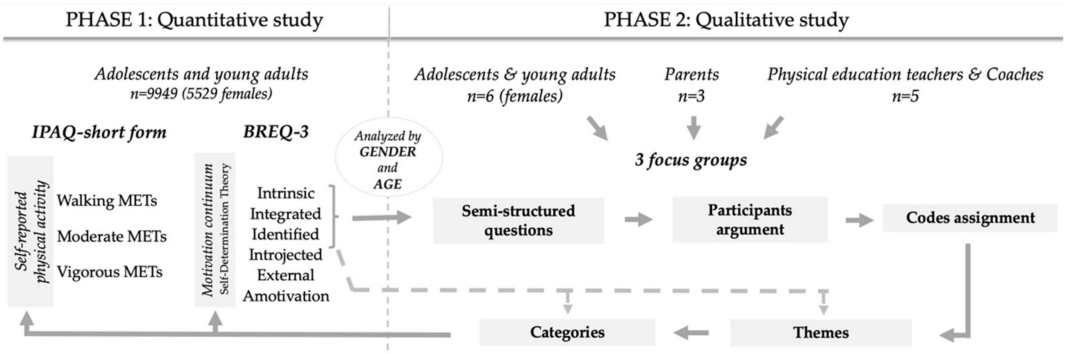

Figure 1. Stages of the sequential explanatory mixed-method design.

This study was conducted in full compliance with the Declaration of Helsinki 1964 (updated in Fortaleza, 2013) and approved by the Local Ethics Committee of the "Rey Juan Carlos" University. Written informed consent was obtained for all adult participants, and written parental consent was obtained for children in both Phase 1 and 2 of this study. All participants' data were collected, analyzed, and reported anonymously.

Phase 1 (Quantitative Study)

2.2. Participants

A sample of 10,511 (5816 women) Spaniard adolescents and young adults between 12 and 25 years were surveyed within September and December 2018 in different representative regions of the country (Community of Madrid, Galicia, Aragon, Valencian Community, and Extremadura).

We used a simple random sampling by quota system (95% confidence intervals and maximum variability (P = Q = 0.5)) in which age, gender, socio-economic status, and geographic distribution based on population size and density were proportionally considered. All questionnaires were conducted face-to-face with the help of a computer in their secondary school, university, technical college, sociocultural and youth centers, as well as centers of work or training for unemployed youngsters. After excluding respondents with missing data or incorrect completion on the different instruments used, 9949 (5529 women) participants remained for the analyses (94.7% of the total sample).

2.3. Research Variables and Instruments

2.3.1. Self-Reported Physical Activity

We used the short form of the International Physical Activity Questionnaire (IPAQ-SF) [31]. The IPAQ estimates intensity, frequency, and duration of the physical activity performed recalling the last seven days. This information was obtained inquiring about the time (hours or minutes/day and number of days/week) spent performing activities of vigorous and moderate intensity and time spent walking and sitting.

Data obtained from the IPAQ-SF were converted into metabolic equivalent (MET) scores. According to the IPAQ guidelines [32], vigorous intensity, moderate intensity, and walking were assumed to represent 8.0, 4.0, and 3.3 METs, respectively. The MET scores were calculated by multiplying the number of minutes per day by the number of days per week by the MET value for walking, moderate or vigorous activity, making three distinct intensity categories. Thus, total physical activity per week (MET-minutes/week) was calculated by summarizing the MET scores from the three intensity categories.

All the calculations and the data cleaning were performed according to the IPAQ scoring protocol and guidelines [32]. Only individuals aged ≥15 and responding to one valid intensity and duration of a particular intensity (i.e., both variables with a different answer than "don't know") were considered for further analysis and total MET-minutes/week calculation [33].

2.3.2. Motivation for Physical Activity

We used the Behavioral Regulation in Exercise Questionnaire (BREQ-3). The BREQ-3 consisted of 23 items with a five-point Likert scale, which ranged from 0 ("Strongly disagree") to 4 ("Strongly agree"), following the stem "Why do you exercise?" [34–36]. The items were subsequently grouped into six factors, which reflected the motivational continuum of self-determination theory [17]: intrinsic regulation (4-items; e.g., "I exercise because it's fun"), integrated regulation (4-items; e.g., "I consider exercise a fundamental part of who I am"), identified regulation (3-items; e.g., "I value the benefits of exercise"), introjected regulation (4-items; "I feel guilty when I don't exercise"), external regulation (4-items; e.g., "I exercise because other people say I should"), and amotivation (4-items; e.g., "I don't see why I should have to exercise"). Previous research has confirmed the reliability of this instrument [34,35]. Cronbach's α coefficient for the motivational regulation factors ranged from 0.70 to 0.93 in the present study.

2.4. Statistical Analysis

All statistical analyses were performed using SPSS software v25 (SPSS, Chicago, IL). The normal distribution of data was evaluated utilizing the Kolmogorov–Smirnov test and the quantile–quantile (Q–Q) plot inspection on all variables of interest. The U Mann–Whitney and Kruskal–Wallis with Dunn Bonferroni post-hoc non-parametric tests were used to analyze the MET-min/week variable when appropriate. A two-way multivariate analysis of variance (MANOVA) was carried out to examine differences in types of motivational regulation (intrinsic, integrated, identified, introjected, external, or amotivation) across Gender (man, woman) and Age Group (12–15, 16–18, 19–21, 22–25 years). We used the Wilks' Lambda test for multivariate analysis based on the characteristics of our statistical design [37]. Further univariate analysis of variance (ANOVA) and post-hoc tests using Bonferroni correction were applied to individual dependent variables when significant main or interaction effects were found in multivariate analysis. The effect sizes were reported by *r*, epsilon-squared ($\varepsilon^2{}_R$), or partial eta-squared ($\eta^2 p$) when appropriate.

Phase 2 (Qualitative Study)

Phase 2 followed up findings of the Phase 1 by conducting focus group discussions in order to provide an extra dimension of comprehension of gender-based differences in exercise facilitators. Focus groups have proven to be a helpful instrument to generate critical perspectives of personal experiences, perceptions, attitudes, and beliefs in exploring quantitative data [38]. The present study followed the consolidated criteria for reporting qualitative research (COREQ) checklist [39], ensuring transparent reporting of key study components.

2.5. Participants

We carried out three discussion groups recruiting the main social agents linked to physical activity participation during adolescence and youth, i.e., adolescent and young women, families, and Physical Education teachers and sport coaches. We used a face-

to-face purposive sampling method to recruit participants representative of the study population from a socioeconomically balanced cluster of secondary schools, parent-teacher associations, universities, and sport clubs located in Madrid (Spain).

The adolescent and young adult women group was composed of six participants proportionally represented by age (three adolescents aged 12–17 and three young adults aged 18–25) and current sport participation (three athletes and three non-athletes). The family group consisted of three mothers whose daughters are currently athletes, were athletes but dropped out, or have never been athletes. Finally, the third discussion group consisted of five participants, three Physical Education teachers (two women) from secondary school and two coaches (one woman) from sports initiation and high-performance. Importantly, the level of professional experience was balanced by including professionals with both a high degree of experience (>30 years) and novices (<10 years).

2.6. Qualitative Research Instrument—Focus Groups

Focus groups lasted between 54 and 72 min (average of 61.7 min) and were carried out at the facilities of the King Juan Carlos University (Alcorcón, Madrid). Two trained researchers were present during all the focus groups. The moderator (F.d.V.) was responsible for managing the time and the dynamics of discussion among the participants. At the same time, the assistant (A.M.L-P.) was responsible for the audio recording (Philips DVT8010/00 professional), summarizing the main opinions and making notes of possible non-verbal actions for the later transcription.

In order to guarantee the correct method of triangulation [40], focus groups were semi-structured on the same thematic blocks according to the obtained quantitative results (see Figure 1). Thus, there were four main sections based on the specific gender-level quantitative differences and age-related modulation in motivational regulation to physical activity participation. Iterative questioning was used to rephrase main ideas and conclusions [41].

2.7. Data Analysis

Focus group audio records were transcribed verbatim, and each transcript read several times by one of the authors (A.M.L-P.) to have a global perspective of the different arguments. Transcripts were imported into NVivo10 software, and a direct content analysis was applied by a deductive use of the qualitative results and the theory [42]. To create the coding phrase, the principal terms contemplated in the questions and not pre-established related topics were registered in a back-and-forth procedure. The identified codes went through an inter-rater reliability process with all the researchers involved to generate the themes and the categories following the Phase 1 findings [43] and the SDT framework [16]. Once the different themes and categories were obtained, the transcription was re-analyzed by incorporating the arguments coded inside each classification. This step also helped to rename and revisit the former process promoting its confirmability [41].

3. Results

Phase 1 (Quantitative Study)

3.1. Self-Reported Physical Activity (METs-Min/Week)

A Mann–Whitney test indicated that total METs (min/week) was significantly lower in women compared to men, $U = 5346105$, $z = -24.60$, $p = 0.000$, $r = -0.28$. In addition, the evolution of MET scores across the different age ranges evidenced a significant decrease both in women ($H = 70.87$, $p = 0.000$, ${\varepsilon^2}_R = 0.02$) and in men ($H = 78.43$, $p = 0.000$, ${\varepsilon^2}_R = 0.02$). Further, Dunn post-hoc comparison reported a differential pattern in this decline in men and women. All comparisons between different age groups, except between 19–21 vs. 22–25 y ($p = 0.42$), reported statistical significance in women (all $ps \leq 0.029$). On the contrary, although men also showed a significant decrease across age groups (all $ps = 0.000$), neither the comparison between groups 12–15 vs. 16–18 y nor between 19–21 vs. 22–25 y reached statistical significance (both $ps \geq 0.54$) (see Table 1).

Table 1. Total metabolic equivalent (MET) minutes/week and types of motivational regulation as a function of Gender and Age Groups.

Outcome		Gender	Age Groups			
			12–15 y[#]	**16–18 y**	**19–21 y**	**22–25 y**
Total METs min/week	W	1746.0 (2390.0) *	2370.0 (3145.5) **a,b,c**	1875.0 (2587.0) **b,c**	1524.0 (2332.0)	1674.0 (2288.5)
	M	3116.0 (3422.5)	3624.0 (3818.3) **b,c**	3548.0 (3415.8) **b,c**	2639.0 (3049.0)	2872.0 (3148.5)
Intrinsic	W	2.38 (1.24) *	2.58 (1.17) ***,a,b,c**	2.28 (1.26) ***,c**	2.28 (1.26) ***,c**	2.43 (1.26) *
	M	2.85 (1.15)	2.93 (1.07) **b**	2.85 (1.15) [b]	2.72 (1.22)	2.82 (1.21)
	Avg.	-	2.76 (1.14)	2.56 (1.24)	2.43 (1.26)	2.59 (1.25)
Integrated	W	1.93 (1.31) *	2.16 (1.25) ***,a,b,c**	1.81 (1.30) ***,c**	1.79 (1.33) ***,c**	2.02 (1.32) *
	M	2.52 (1.27)	2.60 (1.17) **b**	2.52 (1.28) [b]	2.37 (1.32) **c**	2.57 (1.32)
	Avg.	-	2.38 (1.23)	2.16 (1.34)	1.99 (1.35)	2.25 (1.35)
Identified	W	2.69 (1.09) *	2.81 (1.04)	2.58 (1.12)	2.62 (1.10)	2.77 (1.11)
	M	2.90 (1.09)	2.95 (1.04)	2.87 (1.11)	2.82 (1.14)	2.95 (1.10)
	Avg.	-	2.88 (1.04) [a,b]	2.72 (1.13) [c]	2.69 (1.12) [c]	2.84 (1.11)
Introjected	W	0.99 (0.86)	0.93 (0.85)	1.00 (0.87)	1.01 (0.85)	1.04 (0.89)
	M	1.00 (0.90)	0.93 (0.91)	0.99 (0.90)	1.08 (0.91)	1.05 (0.89)
	Avg.	-	0.93 (0.88) [a,b,c]	1.00 (0.88)	1.03 (0.87)	1.05 (0.89)
External	W	0.45 (0.69)	0.57 (0.75) **a,b,c**	0.48 (0.70) ***,b,c**	0.37 (0.64) *	0.38 (0.67)
	M	0.45 (0.72)	0.62 (0.85) **a,b,c**	0.42 (0.65) **b,c**	0.32 (0.60)	0.33 (0.63)
	Avg.	-	0.59 (0.80)	0.45 (0.68)	0.35 (0.62)	0.36 (0.65)
Amotivation	W	0.40 (0.72)	0.45 (0.75)	0.45 (0.77)	0.37 (0.68)	0.35 (0.68)
	M	0.39 (0.70)	0.47 (0.78)	0.39 (0.67)	0.33 (0.65)	0.33 (0.64)
	Avg.	-	0.46 (0.77) [b,c]	0.42 (0.72) [b,c]	0.36 (0.67)	0.34 (0.66)

W: woman; M: man; Avg.: average. Total metabolic equivalent (MET-min/week) data are presented as median and interquartile range (IQR). Motivational regulation data are presented as mean and standard deviation (SD). Scores for the different types of motivational regulation can range between 0 and 4 as an average of the items evaluated in the Behavioral Regulation in Exercise Questionnaire (BREQ-3) questionnaire. [#] Following the International Physical Activity Questionnaire (IPAQ) criteria [32], only participants aged ≥15 years old were included and, consequently, the 12–15 y group is represented only by 15-year-old participants in the case of the Total METs min/week variable. * Indicates statistically significant differences by Gender. Superscript letters denote statistically significant differences by Age Group as follows: [a] (differences compared to 16–18 group); [b] (differences compared to 19–21 group); [c] (differences compared to 22–25 group).

3.2. Motivation for Physical Activity

The results of the MANOVA showed a significant multivariate effect for Gender (Wilks' Lambda = 0.94, $F = 107.27$, $p = 0.000$, $\eta^2p = 0.06$), Age Group (Wilks' Lambda = 0.94, $F = 33.31$, $p = 0.000$, $\eta^2p = 0.02$), and the interaction Gender*Age Group (Wilks' Lambda = 0.99, $F = 1.94$, $p = 0.01$, $\eta^2p = 0.001$).

Follow-up univariate analyses for Gender denoted statistically significant differences for intrinsic regulation ($F = 312.60$, $p = 0.000$, $\eta^2p = 0.03$), integrated regulation ($F = 456.77$, $p = 0.000$, $\eta^2p = 0.04$), and identified regulation ($F = 81.66$, $p = 0.000$, $\eta^2p = 0.01$), with women reporting lower values than men in all cases (see Table 1). There were no statistically significant differences for introjected regulation, external regulation, or amotivation (all $ps \geq 0.07$).

Univariate analysis for Age Group effects indicated significant differences in all the forms of regulation: intrinsic ($F = 20.78$, $p = 0.000$, $\eta^2p = 0.01$), integrated ($F = 26.80$, $p = 0.000$, $\eta^2p = 0.01$), identified ($F = 14.78$, $p = 0.000$, $\eta^2p = 0.004$), introjected ($F = 9.30$, $p = 0.000$, $\eta^2p = 0.003$), external ($F = 66.31$, $p = 0.000$, $\eta^2p = 0.02$), and amotivation ($F = 14.74$, $p = 0.000$, $\eta^2p = 0.004$). Post-hoc comparisons demonstrated a significant decrease in identified regulation scores as a function of age up to 19–21 years (12–15 vs. 16–18 ($p = 0.000$), 12–15 vs. 19–21 ($p = 0.000$)), accompanied by a significant rise in these scores in the age range 22–25 years (16–18 vs. 22–25 ($p = 0.001$), 19–21 vs. 22–25 ($p = 0.000$)). By contrast, introjected

regulation evidenced a progressive increase in scores across age groups, showing lower values in the 12–15 group compared to 16–18 (p = 0.028), 19–21 (p = 0.000), and 22–25 (p = 0.000) groups. In the case of amotivation, a gradual decline across age groups was observed, reporting higher scores in the 12–15 group compared to 19–21 (p = 0.000) and 22–25 (p = 0.000) as well as in the group 16–18 compared to 19–21 (p = 0.011) and 22–25 (p = 0.002). None of the remaining post-hoc comparisons for these types of motivational regulation reached statistical significance (all $ps > 0.19$).

Importantly, the main effects of Age Group for the remaining types of motivational regulation were better qualified by the significant interaction Gender*Age Group: intrinsic regulation (F = 4.54, p = 0.004, η^2p = 0.001), integrated regulation (F = 5.26, p = 0.001, η^2p = 0.002), and external regulation (F = 3.45, p = 0.016, η^2p = 0.001). Further post-hoc comparisons for intrinsic and integrated regulation in women showed a gradual decrease in scores across age groups with respect to 12–15 years (all $ps \leq 0.036$). However, the scores in the 22–25 group were significantly higher with respect to 16–18 and 19–21 groups (all $ps \leq 0.016$). In contrast, the significant decrease in intrinsic and integrated regulation in men appeared only in the 19–21 age group (19–21 vs. 12–15 (both ps = 0.000) and 19–21 vs. 16–18 (both $ps \leq 0.036$)). In a similar vein, the scores shown in the 22–25 group were also significantly higher compared to the 19–21 group (p = 0.008), but only in the case of integrated regulation. In any case, women showed lower scores than men across all age groups (all ps = 0.000). Finally, post-hoc tests for external regulation in both men and women showed a gradual decrease in scores across all age groups (all $ps \leq 0.043$) except in 19–21 vs. 22–25 (both $ps > 0.50$). Crucially, this decrease was proportionally smaller for women, which was depicted by their higher scores (vs. men) within age groups 16–18 (p = 0.026) and 19–21 (p = 0.047) (see Table 1 for details).

Phase 2 (Qualitative Study)

Qualitative data obtained from the focus groups depicted four major themes and 13 categories (see Table 2), which provided an extra dimension of description and understanding on how the motivational regulation towards physical activity participation is distinctively experienced by women (vs. men) across adolescence and youth.

Table 2. Themes and categories on gender-level differences in motivational regulation to physical activity participation across adolescence and youth.

Theme	Category
Interest, satisfaction, enjoyment or fun towards PA in women	Utility component in PA participation Social interaction among peers Perceived self-efficacy New technologies and social networks Opportunities, social and media impact of women's sport
Sportswoman identity and integration of a physically active lifestyle	Social acceptance Stereotype of womanliness Characteristics of sports activity
Value the importance and benefits of being physically active	Link to health Transversal transfer of values and skills Importance of the nearby social environment
Age-related physical activity concept	Early maturity Dynamic integration of PA across age

PA: physical activity.

For clarity of presentation, a narrative summary of these integrated concepts is presented below with extracts of representative quotes from the main social agents related to the object of study (i.e., adolescent and young girls (AY), physical education teachers and coaches (TC), and parents (P)).

A. Interest, satisfaction, enjoyment, or fun towards physical activity in women.

I. Utility component in physical activity participation.

TC and P reported the ingrained playful sense in boys since they tend to link physical activity/sport to competition, play, fun, or enjoyment. Conversely, girls demand a functional or utilitarian component in the activity beyond the inherent sense of play and preferably away from competitiveness.

> *"Girls mature before boys . . . they do not see sport as a game (. . .). In the initial stages they like to play, but when they reach 12–13 years old, there is a clear difference in their priorities (. . .). Girls need to see the activity as something worthwhile or productive in the long term (. . .)".* (Expert Coach 1)

II. Social interaction among peers.

AY, TC, and P unanimously highlighted the importance of the social component in adolescent girls and young women. The need to strengthen the role of the social component within the sports activities offer is generally assumed. Adolescent girls and young women give considerable importance to interactive group dynamics with their peers as a fundamental part of the activity.

> *"For my daughter, the presence of her friends in the activity is very important. She dropped out of gymnastics because her group of friends abandoned this activity. In fact, she is now practicing volleyball in high school following these friends (. . .)".* (Mother 1)

III. Perceived self-efficacy.

AY, TC, and P pointed out the special relevance that adolescent girls and young women give to self-perception of their motor ability to face challenges competently, succeed in specific situations, or accomplish any task. Low self-perceived motor competence within the sports context is predominant among adolescent girls and young women, which could lead to a reduction in levels of satisfaction or enjoyment of the activity.

> *"When you have no experience in a sport, you feel that you are clumsy and incompetent. Consequently, this generates rejection for starting to play, both inside and outside the school context (. . .)".* (Adolescent 4)

IV. New technologies and social networks.

There was a consensus (AY, TC, and P) highlighting the notable increase in time spent on the use of mobile phones, social networks, etc., which is directly detrimental to physically active forms of leisure.

> *"We (parents) were amazed when we saw that our daughter spends more than 6 hours on social networks in a routine day . . . this surprised even herself (. . .). I believe that, in part, it is a matter of a greater need for communication inherent in women (. . .)".* (Mother 3)

V. Opportunities, social, and media impact of women's sport.

The lower social and media impact of women's sports may be diminishing the interest of the woman social group in the practice of sports activities (AY and P).

> *"What athletes can our daughters use as a reference to encourage themselves to play sports? (. . .) What dissemination and publicity are given to sportswoman as a reference? It does not reach the business level of men's sports and, consequently, all the athletes as a reference are men (. . .)".* (Mother 2)

Gender differences in reference to the prospects of continuity both in amateur and professional sports could act in developing a loss of interest and a premature drop-out from sport (AY and TC).

> *"The problem is how they see the future in sports (. . .). In my Athletics Club, I had two siblings (boy and girl). When they reached the university stage, the parents' support for*

the boy's continuity was total (. . .). Unfortunately, women's professional sports are not so rewarding". (Expert Coach 2)

B. Sportswoman identity and integration of a physically active lifestyle.

I. Social acceptance

AY, TC, and P reported that there is currently good social acceptance among peers. However, AY and P highlighted that sportswoman still show less social and media acceptance at both micro and macro levels of society. Women's sport is not yet sufficiently valued, which could be acting as a limiting factor for greater participation.

"(. . .) There is not the same consideration for men's and women's sports. In many women's soccer matches you can see even a better level than in men's matches, but they are not taken into account. I am a high-level footballer. In our matches, there are far fewer supporters". (Young 2)

In the family context, girls perceive a different acceptance of sports practice based on gender, level of performance, and future opportunities within the sport. Specifically, girls perceive greater support for their male peers when the family is made up of siblings of both sexes (AY).

"We (brother and sister) play the same sport (contact sports), but more importance is given at home when he is competing or training. For example, household chores are in the background for him when he is training or competing, but sometimes I don't have time to go because I have to finish the household chores first (. . .)". (Adolescent 2)

II. The stereotype of womanliness.

The perception of the stereotype of womanliness as a limiting factor in sports practice has been overcome (TC and P). The participation in physical activities (or sports) is well valued and widely accepted from the perspective of woman body aesthetics. However, the current beauty canon is the fitness body but is still far from a hypertrophied musculature, which is still more linked to men (TC and P).

"I think my daughter has a very beautiful body thanks to sports, with slight muscles, but . . . that's fashionable now, isn't it? The slightly muscular woman is trendy, although it depends on the type of sport. (. . .) Muscle hypertrophy is not the woman stereotype body that we have in mind". (Mother 2)

III. Characteristics of sports activity

AY and P reported that adherence to physical activity could have a certain link with the age of initiation and the appropriate choice of the type of sports activity that best fits the girls' priorities.

"I think it is essential that they start doing the sport from an early age, which will make it easier for them to 'get hooked' on the practice and enjoy the activity also in adulthood. (. . .) It is essential that they try different activities to find the appropriate one (. . .)". (Mother 3)

AY, TC, and P agreed to point out that the sports activities offer should emphasize and give greater importance to social communication and interaction among peers, which could be an essential condition for initiation and adherence to physical activity.

"Practicing sport and competition is already a sufficient incentive for boys, it does not matter so much if it is on a group, individually, or combat sport . . . By contrast, I think girls are much more selective in that social variable (. . .)". (Expert Teacher 1)

As a consequence of the observed behavior in women as a function of the objectives proposed for the activities, TC highlighted the girls' priority in positively evaluating the process over the result as well as exercise paradigms that imply the progressive overcoming of challenges.

> *"In the age range of my students (12–18 years old), I am perceiving that when I propose different achievable challenges, the girls are more stimulated by overcoming. There is a certain reluctance at the beginning, but when they have already achieved it, they enjoy . . . they are motivated by self-improvement (. . .)".* (Beginner Teacher 1)

C. Value the importance and benefits of being physically active

I. Link to health.

AY, TC, and P supported that the health component is among the main facilitating factors for being physically active in women. TC also added an outstanding link to body aesthetics, mainly in the more advanced age ranges.

> *"I liked sports because it made me feel good, I felt healthy. Health is what mattered most to me (. . .)".* (Young 2)

II. Transversal transfer of values and skills.

Physical activity reports not only observable benefits on physical or mental health but also reports transversal habits and values of direct transfer to personal development (learning of values, self-improvement, self-knowledge, disconnection from routine, etc.). AY, TC, and P agreed that this transversal transfer of values and skills is also an enabling aspect to consider.

> *"I believe that sport is a form of leisure that makes you learn and grow at a personal level. Sport transmits diversity of values, better knowledge, and self-improvement, respect towards the opponent, highlights the value of effort, sacrifice, achievements, (. . .)".* (Young 1)

The link of sport with discipline, organization, sense of belonging, and responsibility towards the group and, to a large extent, the active occupation of leisure is especially valued by the group of parents.

> *"I like it because it is a healthy leisure way, and it serves to keep them away from bad habits in adolescence. (. . .) Furthermore, this implies that her close friends are also likely to have healthy habits".* (Mother 1)

III. Importance of the nearby social environment

The first-person experience of the benefits derived from a physically active lifestyle is essential for spreading a positive message among peers. TC noted that a feasible contingency plan to enhance the value of physical activity among women would again imply empowering the social component of sports activity. This should be the cornerstone in the strategy for the attraction of peers towards experimentation and appreciation of the health-related benefits of physical activity participation.

> *"They especially need social support: a friend, a colleague . . . someone to accompany them at that beginning. When they have an example or close reference, they feel reinforced".* (Expert Coach 2)

D. Age-related physical activity concept

I. Early maturity

AY, TC, and P commonly affirmed the early maturity and the search for new interests in the case of girls.

> *"The earliest biological maturity of the girls is also reflected at the behavioral level and represents a turning point for them (. . .). The practice of physical activity becomes something much more conscious and goal-oriented. Aspects such as social relations, body aesthetics, etc. gain prominence over the enjoyment associated with playing (. . .).* (Expert Coach 1)

TC and P indicated that women normally give up the playful sense of sport earlier in search of a communication and social interaction orientation. The enjoyment of physical activity in women is usually conditioned on the existence of social support among peers.

> *"I think that girls tend to think of sport more as a way of relating to others (. . .). They use sports as a means of relating to friends (. . .)".* (Expert Teacher 2)

II. Dynamic integration of physical activity across age

TC highlighted the existence of temporal evolution in the way that women integrate physical activity within their lifestyle. Although playful and social components are the main facilitators for physical activity participation at early ages, this could be represented by body aesthetics and/or health at later ages.

> *"The physical activity concept changes depending on age. It is interpreted as something playful at an early age. Around the second stage of secondary school (14–15 years old), there is more aesthetic-oriented thinking for girls (. . .), and perhaps around the beginning of the university stage, the health-related concept takes on greater prominence".* (Expert Coach 1)

4. Discussion

In the present study, we integrated quantitative and qualitative data to explore gender-related trends in physical activity levels and SDT's motivational regulations in a population-based sample of Spaniard adolescents and young adults. Our results agree with recent global data that have consistently reported lower levels of physical activity in women compared to their men counterparts, confirming the existence of a significant gender gap [5,6]. Crucially, the autonomous forms of motivation, i.e., those strongly linked to exercise adoption and maintenance [19], mimicked the gender imbalance pattern observed in physical activity levels. This reveals deficiencies regarding the degree to which physically active behaviors are volitionally undertaken among women, which potentially appears to underlie gender differences in physical activity participation [21].

Implementation of targeted interventions to foster and retain girls' participation in physical activity should consider multiple person-centered and context-specific factors in light of our qualitative findings. It is imperative to make physical activity relevant to girls' lives by meeting their needs and interests [44]. Activities should emphasize social components by promoting interaction among peers, which could be an essential condition for the initiation and the adherence to physical activity [45]. Exercise paradigms preferably away from pervasive competition [46] and promoting cooperative dynamics oriented to common goals and group rewards [47] should be positioned at the heart of physical activity proposals. Besides, specific motivation strategies to ensure a skill-appropriate enhancement of perceived competence may also contribute to improving physical activity levels in girls [48]. Perceived competence is one of the main determinants of participation in physical activity [49] and has been shown to be positively associated with being persistently active during the transition from adolescence to adulthood in girls [50]. In fact, according to previous evidence [51], our results reported that women value exercise for the opportunity it provides to set and achieve personally meaningful challenges, prioritizing the process over the result and facilitating a sense of competence and achievement. In this regard, the involvement of girls in the design and the delivery of physical activities triggering greater capacity of personal choice is a potential factor promoting participation [52].

The prioritization of the above-mentioned key points of the exercise paradigm supporting the individual's experience of autonomy, competence, and relatedness would be useful to further volitional types of physical activity engagement [16,17]. Importantly, it should not be overlooked that the degree to which any of these three psychological needs is unsupported within a social context will negatively impact on people's sense of volition and initiative [16,17].

Our data confirmed the largest gender-related difference in autonomous motivation on the construct of identity and the integration of a physically active lifestyle. A number of social and cultural factors appear to be undermining the internalization of active behavior in sportswomen. Girls sometimes express displeasure by certain physical activities over concerns about stereotypes, appearance and body image, or feeling constrained by cultural

acceptability [53], which in turn shape attitudes to active behavior into adulthood [54,55]. In addition, the scarce priority given to physical activity within the school context and parental attitudes stand out among the main factors limiting support and opportunities of being physically active [56,57]. Following previous evidence [58], girls reported perceiving an underestimation bias of the acceptance of sports practice in women within social and family environments. Traditional gender boundaries when playing sport [54], failures to adapt the types of sports offered [59], lower impact and media influence of women's sports [60], or limited future opportunities within amateur or professional sport [61] seem to underlie this issue.

Maintenance of physical activity is positively associated with supportive social environments [62]. Thus, the visibility and the creation of more active woman role models among the media [62], friends, and family [52] can positively influence girls' decisions and participation. Specifically, friendship based groups should be strategically emphasized to foster participation during adolescence by using girls as positive influencers and advocates with their peer group [63]. This is especially important considering that our data identified an early and steeper decline in volitional types of physical activity engagement in girls relative to boys. In agreement with previous studies [27], specific life transition periods such as the change from secondary studies (15–16 years old) to the last two years of high school (in Spain, first and second courses of *bachillerato*) seem to limit physical activity, especially among girls (For the clarity of the reader and contextualization of the data in the different school contexts between countries, note that the ages of schooling in Spain are as follows: Preschool education (<6 years old), Primary Education (6–11 years old), Secondary Education (12–15 years old), Post-16 Education—Baccalaureate or '*Bachillerato*' (16–17 years old) and University ($\geq$18 years old)). Therefore, this is a critical life period to address gender-specific differences.

A proactive alternative should be aimed at guaranteeing a sufficient variety and quantity of opportunities for participation from school [64]. This would promote the gain of positive experiences from an early age [54], facilitating long-term adherence and avoiding the drop-out later in adulthood [10,11]. Furthermore, interventions to increase active behavior across the lifespan should not overlook the age-related dynamic of the physical activity concept in girls depicted by our data. Girls gain interest in being physically active for their health as a result of growing up, although this facilitator appears to be only partially internalized during adolescence [51]. Thus, it seems evident that health-related behavior should be promoted for maintenance of a physically active lifestyle, although not to start the activity at an early age where other exercise setting factors such as social interaction would prevail.

5. Conclusions

The present study evidenced a gender imbalance in self-reported physical activity levels and autonomous forms of motivation to the detriment of adolescent girls and young women in a sample of the Spanish population. An earlier and steeper age-related decline both in physical activity and volitional types of motivation was observed in girls, revealing deficiencies regarding the degree to which physically active behaviors are volitionally undertaken. Qualitative outcomes within SDT analytic framework depicted a range of key person-centered (e.g., perceived self-efficacy, early maturity, prioritization of the utility or the social component in exercise settings), and contextual mechanisms (e.g., social acceptance, stereotype of womanliness, or characteristics of sports activity) that may explain inter- and intra-individual variation in active behavior. These findings highlight the importance of implementing gender-sensitive policy approaches and may have a useful application in suggesting how contextual factors and exercise settings can be addressed to foster volitional types of physical activity engagement in adolescent girls and young women. Specific proposals in this regard were suggested based on our qualitative results. Future longitudinal and intervention studies are warranted to explore better the direct link (beyond mere cross-sectional association) of these findings.

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