A qualitative approach – delineates changes on pubertal body image after menarche

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ABSTRACT
The present study explored young adolescent’s (female at birth) experiences with their bodies following pubertal changes. Twenty-seven participants selected from a parent-daughter workshop at school who had experienced 1 to 6 menstrual cycles were interviewed. Data were collected and analysed using interpretative phenomenological analysis. Four current themes emerged from the analysis: (i) perception of body changes in puberty; (ii) intense emotions; (iii) managing body changes and secondary sexual characteristics; (iv) a new way of experiencing the body. Results support an integrative approach to the prevention of body negative image. Based on these findings, it is important to considered body image in the complexity of its emotional, cognitive and behavioural manifestations in order to promote psycho-educational programmes related to secondary sexual characteristics, consistent with the needs of today’s pubertal female at birth.

Introduction
Puberty is broadly defined as the time when a child develops secondary sexual characteristics and reproductive functions (Zhu, 2021). This life stage results from a complex sequence of biological events mediated by genetic (Arain et al., 2013), hormonal and environmental factors, and is characterized by the maturation of gametogenesis and the secretion of gonadal hormones. ‘Adolescence’ is often used interchangeably with puberty, and encompasses physical, cognitive, psychological, and social changes (Wolf & Long, 2016).

Female typically start puberty between the ages of 8 and 13, when the increase in the production of adrenal androgens, leads to the development of pubic hair (pubarche), axillary hair, sebaceous glands (acne), and apocrine glands (sweating, body odour). Menarche, the first menstrual bleeding, usually occurs 2 to 2.5 years after the onset of puberty. The timing of menarche has not been shown to advance as rapidly as other pubertal changes, with an average age of menarche ranging from 12 to 12.5 years (Bordini & Rosenfield, 2011; Wolf & Long, 2016).

Literature and theoretical overview
Puberty is a milestone in the individual’s bio-psycho-social development, marking the transition between childhood and adolescence. The onset of puberty can be immensely challenging for young girls, especially for those who develop prematurely, which can make them feel different from, or out of sync with, their unmatured peers (Compian et al., 2009; Doswell et al., 1998). The way in which
a pre-adolescent girl perceives her transition has implications for her ‘new’ self-image. Negative self-assessment is a widespread phenomenon among young adolescents (Mohnke & Warschburger, 2011), whether it relates to the body as a whole (e.g. weight, shape, muscularity) or specific body parts (e.g. stomach, chest, nose). Body dissatisfaction is part of the attitudinal dimension and refers to the negative subjective evaluation of one’s body. Body image, being a multifaceted construct, includes four main components: (1) cognitive; (2) perceptual; (3) emotional; (4) behavioural (Yamamotova et al., 2017). Body image can be divided into the distinct and higher-order constructs of positive body image and negative body image (Tylka, 2018; Tylka & Piran, 2019). (i) Negative body image encompasses many forms, including dissatisfaction with appearance, body surveillance, body shame, and the internalization of media appearance ideals (Tylka, 2018). (ii) Conversely, a positive body image refers to feelings of love and respect for the overall body, which includes an appreciation of the body and the functions it performs, acceptance of aspects of appearance that are inconsistent with social ideals – and interpreting incoming information in a protective way for the body (Tylka, 2018; Wood-Barcalow et al., 2010). While positive and negative body image indices are often negatively correlated (Tylka, 2018), the two constructs do not represent opposite ends of a spectrum. (Davis et al., 2019; Gillen, 2015; Thomas & Warren-Findlow, 2019).

Weight problems, body-related beliefs, and behaviours aimed at improving physical appearance often begin in pre-adolescence (Neves et al., 2017). Experiencing negative body image in childhood and/or pre-adolescence can be a risk factor for the development of psychopathologists at later ages (Neves et al., 2017). Related but different terms are often used interchangeably in the literature regarding the state of consciousness in which there is an altered perception of the body image, including negative body image, body disturbance, and body dissatisfaction (Hosseini & Padhy, 2020). Negative body image typically demonstrates dissatisfaction with the body or parts of the body, concern with appearance, and engagement in behaviours such as frequent mirror checking, self-reliance, or avoidance of public situations (Hosseini & Padhy, 2020). Negative body image is often measured as body dissatisfaction (Spreckelsen et al., 2018). Body dissatisfaction is attributable to a discrepancy between the body image’s perception and its idealized image (Silva et al., 2019). Body dissatisfaction is influenced by personal, interpersonal, and socio-cultural variables (Austin et al., 2009) and is a harbinger of body image disorder (Griffen et al., 2018). Body image disorder is also related to negative emotions such as shame, disgust, anxiety, and experiential avoidance behaviours (Vocks et al., 2007).

Within the body image domain, a central focus for many women from pre-adolescence onwards in contemporary Western society is the desire to achieve or maintain a thinness level (Schaefer et al., 2019; Thompson & Stice, 2001). It is well documented that preoccupation with weight/shape can lead to disturbed eating behaviours through restrained or dysregulated eating and is considered a significant risk factor for eating disorders (Stice, 2002; Stice & Shaw, 2002). Negative body image in preteens does not necessarily lead to a psychopathological outcome. For example, female who exhibit body image problems may not exhibit pathological eating behaviours, while others may change their behaviours to achieve their ideal body (Hoffmann & Warschburger, 2018). Nevertheless, negative body image in adolescence is associated with several psychopathological outcomes, such as anxiety (Vannucci & Ohannessian, 2018) and depressive disorders (Bornioli et al., 2020; Murray et al., 2018). As such, body dissatisfaction is a serious mental health problem that affects not only adult women, but also young adolescents (Bucchianeri & Neumark-Sztainer, 2014).

While the thin ideal persists in Western culture, there seems to be a greater emphasis on respecting different body shapes to combat body dissatisfaction experienced by many women, demonstrated by the growing prominence of plus size models in mainstream media (Clayton et al., 2017; Convertino et al., 2019). The menstrual cycle has also found prominence through high-profile media campaigns, reducing the level of shame connected to it (Bee, 2018). Nevertheless, many females experience a stigma attached to menstruation, which can lead to negative implications and diminish well-being (Holland et al., 2020). A large body of quantitative studies have investigated the
link between body dissatisfaction and psychopathological outcomes (especially with regard to eating disorders), yet qualitative research is limited. Therefore, the research question of the study is: What are the effects of body changes on body image after menarche?

The purpose of the present study is to gain the understanding of imbalance by exploring the impact of pubertal development on female in the context of current body ideals and related stigmas, using qualitative methods. Specifically, it investigates the subjective experience of the pubertal transition of Italian adolescents (female assigned at birth – FaB) who had experienced 1 to 6 menstrual cycles through semi-structured interviews. Given the importance of the topic in terms of mental health consequences, understanding the perception of feminine body changes from the perspective of FaBs is critical.

The rational of the study is to understand how an individual subjectively perceives and gives meaning to their transition body after menarche.

There is no provision on selecting the participants; however, the working assumption is based on participant’s honesty regarding individual’s personal experience of 1 to 6 menstrual cycles. Moreover, the study is dependent on the integrity of participants who are able to prominently share their behavioural effects of experiencing puberty in adolescence.

Research methodology

The interpretative phenomenological analysis (IPA) used to provide detail insights of personal lived experience. The present study qualitatively analyse the psychological experiences of FaB’s who had experienced 1 to 6 menstrual cycle. The reason for adopting IPA research methodology is because it allows the researcher to examine topic which are complex, ambiguous and emotionally laden. IPA allows us to obtain a deep understanding of the participants perspectives within an idiographic approach, where commonalities and divergences are considered (Smith, 2015; Smith et al., 2009; Tuffour, 2017).

The sample size of 27 FaB selected during a parent-daughter workshop at school focusing on the topic of mental health in puberty. The research project objective was presented, informed consent forms was given to interested attendants during the recruitment procedure, and it was made clear that all parents and participants could withdraw consent at any time.

The inclusion criteria were: (1) sex assigned at birth female, (2) had experienced 1 to 6 menstrual cycles, (3) normal weight, (4) Italian speaker.

We determined the interview outline by consulting relevant literature and selecting 5 adolescents for a pre-interview. The one-to-one semi-structured interviews were conducted in a private room and they took 35–50 minutes per person.

Demographic: Participants’ age, and information regarding age of menarche, number of menstrual cycles, height and weight (BMI), were obtained before the interview.

Pubertal Development Scale (PDS) were administered before the interview. PDS is a self-report questionnaire designed to report development on pubertal growth indices differentiated by gender of the adolescent respondent (Carskadon & Acebo, 1993). The questions for participants regards growth, body hair, skin changes, breast development, and menarche. Response options are 5: I don’t know (0), not yet started (1), barely started (2), definitely started (3), seems complete (4). The scoring permits categorization of participants as pre-pubertal, early pubertal, mid-pubertal, late-pubertal, and post-pubertal. The girls with menarche can only be categorized as mid-pubertal or late-pubertal.

The questionnaire reflects adequate gonadal and adrenal developed, and correlated with Tanner pubertal stage (Marshall & Tanner, 1969; Pompéia et al., 2019).

Semi-structured interview. The participants provided information about their emotions towards, and experiences of, body changes in in-depth interviews, where active listening and unconditional acceptance were used by the researcher (G.R.). Open ended questions were used, and examples of the key questions are ‘Is there any part of your body that is particularly changed?’, ‘What do you think about your body?’, ‘How do you experience body changes?’, ‘Do you talk with your parent(s)/siblings/friends about your body changes?’. 
Ethics approval was obtained in accordance with the ethical standards of the Declaration of Helsinki. Informed consent was obtained from each participant at the beginning of the survey.

**Data analysis**

Descriptive analysis were performed for the demographical data. The interviews were recorded, transcribed, and made anonymous by numbering participants and removing identifying sentences or words. Each transcript was analysed individually indepth using IPA’s idiographic from three researchers, who listened and re-read the interview carefully (Smith et al., 2009). Firstly, a researcher read the content and wrote preliminary interpretations, identifying conceptual units of meanings of individual interview. Specific themes that emerged from the first interpretation of researchers were noted and divided into clusters corresponding to the main classes of meaning by participants, and labels were apply to each cluster, organized in an index according to the meaningfulness of the statement and connection were founded, headed by psychological concepts as keys through which interpret the data. Derived clusters constitute the superordinate themes, used to structure the findings of the present study. Next, the authors re-read the transcriptions individually and produced a thematic framework. Finally, a supervisor researcher read the themes and analyses carried out by colleagues to ensure that they had captured the most significant narratives. Themes that emerged in at least half of the interviews conducted were selected as current, and collected as major thematic headings, so as to promote an ideographic perspective. Conflicting point of view on the themes were discussed by the whole research team, expressing also critical reflections, biases and personal beliefs and assumptions guided by the supervisor, enhancing transparency.

**Results**

Demographic information and PDS results are shown in Table 1. The interviewer invited the 27 participants (mean age 12,11 standard deviation 0,81) to talk about their experience of pubertal body changes. All participants reported experiences of body changes as a result of development. Four major current themes emerged from the data analysis, organized according to the body image domain related to body changes: (i) perception of body changes in puberty; (ii) intense emotions and their behavioural consequences; (iii) managing body changes and secondary sexual characteristics; (iv) a new way of experiencing the body. The current themes are described in the next section and some quotes (translated from Italian to English) from participants’ interviews will be used as representative material.

**Theme 1. Perception of body changes in puberty: timing and thoughts**

**Subtheme: information about body changes**

Participants reported being informed about menstruation and their ability to reproduce following menarche, but none reported being informed about other category of bodily changes their body would undergo (e.g. breast development, hip development, body hair growth). ‘I knew about menstruation because I have an older sister and I always saw her changing her tampon, but ... Also, I had no practical information on how to put the pads on.’ (Participant 4). Another participant said ‘I remember seeing my aunt in the bathroom changing her tampon ... Then at school we did a sex education course and they explained well that the period would come, but they did not tell us about any other changes such as breast and hair growth’ (Participant 15).

**Subtheme: sudden awareness of change**

The adolescents reported noticing several body changes due to pubertal development, specifying the sudden temporal nature with which they became aware of these changes. In participant’s 8 words ‘My shape has become accentuated and feminine, as a child I was skinny and now, trying on
clothes from when I was a child, I realise that I am beginning to be curvy on my breasts and hips because my trousers struggle to close and even my jumper is very tight, but it doesn’t seem to be a question of weight.’ The perception of participant 16 was ‘With the arrival of my period a few months ago, I started to gain weight, my breasts have grown, and hair has grown on my legs, underarms and groin’.

**Subtheme: body dissatisfaction – thoughts content**

Body dissatisfaction emerged as a recurring theme with regard to secondary sexual characteristics. According to participant 14, ‘I despise my breasts, in particular I find my nipples very ugly, their shape and the colour of the circle which is very dark and I wish they were small and clear as they were when I was a child.’

Menstruation was another bodily experience reported by the majority as generating body dissatisfaction and distress. ‘Having my period is disgusting, it makes me feel dirty and uncomfortable.’ (Participant 1) On the other hand, only four participants reported weight gain in their accounts of body dissatisfaction. This is summarized by participant 18: ‘I’d like a thin body, like the models on social media . . . I dislike my shapes, . . . I understand that I have to grow, but I would only like to grow in height, without all these other changes that I can’t stand. I envy thin girls.’

**Subtheme: repetitive thinking style**

Not only the contents of the thoughts emerged as a recurring theme, but also the thinking strategies themselves. The participants showed ruminative thinking strategies related to body changes. For instance, participant 16 said ‘I find it unpleasant to menstruate and the smell of menstruation. When they end, I am the happiest person in the world . . . I think about what I have done wrong to deserve this, and when it ends I keep thinking about the fact that it is not over . . . Then I think about when I want to do sport, go to the beach and put on my swimming costume and dress how I want, or go on a trip and I can’t because of my period and I don’t know who to blame.’
Theme 2. Intense emotions: shame and pride

Subtheme: shame and unpleasant emotions towards body changes
In light of their dissatisfaction towards their bodies, the majority of participants experienced shame. Other recurring dysfunctional emotions towards body image include ‘embarrassment’, ‘anxiety’, ‘worry’, ‘anger’, ‘sadness’, ‘distress’, ‘loneliness’, and a feeling of being ‘misunderstood’. Participant 24 described her feelings in these terms: ‘The shame I feel for my body is indescribable. Since my body has changed, I am sad. Everything seems different and facing life and its activities has become complex’.

Subtheme: the benefits of peer support
Despite the shame and discomfort experienced, some adolescents showed how supportive their peers were: ‘I was in the gym during PE and I got dirty. I was menstruating for the first time. So, I asked two of my classmates and they gave me a tampon and explained how to put it on, helping me.’ (Participant 2).

Subtheme: pride towards body changes
Although most participants reported emotions mainly related to shame and anxiety, eleven participants also reported experiencing a positive emotion of pride and satisfaction, linked to having developed and entered womanhood. ‘Being recognised as a woman makes me happy, it makes me feel grown up and no longer a child.’ (Participant 23). Another stated that ‘I am proud to have entered the adult female world. To be able to start dressing like a woman. Then my family members will start to consider me differently and so will others. Just as they currently do with my older cousins.’ (Participant 9)

Theme 3. Managing body changes and secondary sexual characteristics: new behaviours in the adolescent universe

Subtheme: body shame and its consequences on pleasure activities
These emotions, in particular anxiety and shame, also affected the desire to engage in activities that were previously considered enjoyable or neutral (i.e. spending time with peers, going on holiday or on a trip with friends, going to school all day, and playing sports). ‘I’ve always been embarrassed to change in the changing room, but now it’s become so difficult. I can’t change in front of other people, so I always put my tracksuit on under my trousers, so when I have to do gymnastics I don’t have to take my clothes off.’ (Participant 11) Participant 10 explained in depth, ‘I try never to change when I’m out and about. I put several pads together so that I cover as many hours as possible . . . and then if there are people outside the bathroom I can’t, they’ll hear the sounds of the tampon . . . and I’ll die just thinking about seeing the face of the person who comes in after me, especially if I know them. So when I’m menstruating it’s hard to go to school, and do a lot of activities that involve having to change. I can only do activities that last a maximum of two hours and don’t involve a lot of movement.’

Subtheme: body image avoidance
In addition to the behaviours presented above, several new behavioural patterns emerged, experienced by the adolescents as ‘new’. The participants reported attempts to hide, control and modify their bodies: ‘I started choosing clothes to buy, strictly clothes loose enough to hide the changes, to avoid comments from others.’ (Participant 7). Or, ‘I am very careful about what others see of me. And if I have a pimple on my left cheek on the bus, I always sit with my left cheek close to the window, so that I can show my right cheek without any blemishes.’
Subtheme: emotions towards behaviours related to the development of secondary sexual characteristics

New behaviours emerged as a direct result of body modifications (e.g. buying or wearing a bra, visiting the beautician to remove hair). Most of the accounts highlight the unpleasantness of these new behaviours and the associated feeling of alienation. ‘I have never purchased a bra, I have been supplied with a bra from my older sister. I only have that and use it occasionally, I wouldn't know what bra to buy and I definitely don’t want to go and get it. I wouldn’t want to have to wear it . . . I still don’t want to have to buy one and I would never want to buy a visible one. I’d rather have none noticed I was wearing one.’ (Participant 27). Participant 21 reported that, ‘The first time I got waxed I cried from the pain. And I felt different from how I was before, like I wasn’t me anymore.’

Theme 4. A new way of experiencing the body: acted and observed body

Subtheme: memories of the child body

Among the participants, there were no differences in variation in body perception. They experienced a change in their own and others’ perceptions of their bodies, highlighting a transition from the body as a subject of action to the body as an object of observation. Before puberty, the body was experienced as a tool for performing various actions, including playing, sleeping, eating, and talking. ‘The body was only used for running, catching the ball, moving the legs on the swing to go higher, or to draw and to hold the pen while doing homework’ (Participant 17). Another participant reported, ‘The body was only for living, for example, for walking, carrying my school bag on my shoulders and playing with my classmates at recess or playing with my sister.’ (Participant 3).

Subtheme: the pubertal body is observed by me and others

At puberty, however, a different way of being with one’s body emerged. The participants refer to a body that they experience as being observed, first and foremost by themselves. ‘What used to be an active body, I now experience as an object that I spend time observing and decorating. I feel like a doll of myself.’ (Participant 23). A recurring theme was the perception of one’s body as an object of observation for others. Most participants felt that others judged them based on their bodies. In the words of participant 11, ‘I think others look at my body. As I walk down the street, or in the mall, I wonder, for example, if my hair is out of place, because I feel that others are watching me and this has never happened to me before’.

Discussion

Through a qualitative analysis, we discovered the recurrent themes regarding body issues that affect young adolescents. These findings are discussed here in relation to previous body image research.

The findings revealed that adolescent girls receive information about the existence of menstruation from their families, especially parents, older sisters, and aunts. All participants reported having studied puberty at school in science or in special sex education courses, which is consistent with previous results about sex education courses in schools (Kundisova et al., 2019).

Yet none of the participants reported knowing how to manage menstruation. Some were aware of external tampons and how they could be attached to briefs, but none of them knew, prior to menstruation, about the existence of different types of tampons and other menstrual devices, nor were they aware that menstruation involved pain. Faced with this misinformation, they initially felt lonely in discovering how to apply tampons. Many also reported confusion in knowing when a tampon should be changed.

Furthermore, participants reported that they were not at all ready for other body changes. Though they were scientifically informed about menstruation and its role in human reproduction, the extent of misinformation relating to pubertal development was such that many were not prepared for more visible changes, such as breast development and body hair.
The fact that they lived with mature, developed women at home does not seem to have factored into the participants realization that sooner or later it would happen to them.

With respect to nonawareness of changes, there was a rational knowledge of certain processes, which did not seem to reflect a bodily awareness. The moment of body transition, or awareness of changes in one’s body, was reported by most as being sudden, leaving them bewildered.

This result is consistent with previous studies, where body representations appear to be momentarily blocked during the pubertal growth spurt (Gardner et al., 1999; De Haan et al., 2018). All participants second their thoughts with weight problems, body-related beliefs, and behaviours aimed at improving physical appearance often begin in pre-adolescence (Neves et al., 2017). However, participants also reported dissatisfaction with different parts of their bodies, in particular with the parts that had changed: shape and size of breasts and nipples, acne and oily skin, body and facial hair, shape of the hips, legs, and body odour.

Dissatisfaction with breast shape is confirmed in several quantitative studies, where it correlates with general body dissatisfaction and increased psychological distress in adult and adolescent women (Forbes & Frederick, 2008; Xue et al., 2013). Another study reported on how breast size can affect mental health and self-esteem, showing that girls with smaller breasts experience more depressive symptoms (Yuan, 2012). In contrast, the participants in the present study reported greater dissatisfaction with large breasts. This may be explained by the difficulty of processing rapid growth, feeling different from peers, the change in body functionality, and the social objectification of the developed body that women experience. Moreover, only four participants reported dissatisfaction with body weight, judging their bodies as too fat. This confirms a finding that is widely present in the literature (Tiggemann & Slater, 2017; Izydorczyk & Sitnik-Warchulska, 2018; Zarychta et al., 2019), but at the same time it shows how little this concern was present in the selected normal-weight sample, which focused on parts of the body more consistent with secondary sexual characteristics.

The results also revealed a reliance on repetitive thinking strategies to manage emotions, often anxious in nature, related to body dissatisfaction and management. These findings appear consistent with previous literature, in which rumination has been identified as a potential factor in developing and maintaining bodily dissatisfaction (Etu & Gray, 2010; Holm-Denoma & Hankin, 2010). Rumination is a mental process characterized by repetitive, prolonged, and recurring thoughts on their concerns and experiences (Watkins, 2008). Since bodily dissatisfaction results from an unfavourable comparison between the real body image and the ideal body image, it could be expected that body dissatisfaction triggers rumination, which maintains body dissatisfaction (Dalley et al., 2019). The anxiety experienced when faced with the thought of exposure to potentially shameful situations leads adolescents to consider possible strategies for handling worrisome situations, producing yet further anxiety (Osmanağaoğlu et al., 2018; Rabner et al., 2017).

Most participants reported strong feelings of shame relating to their new body and how to manage it, mostly social settings. To control and modify their bodies, the respondents implemented various actions, whether cognitive, such as concern and recurring thought about body image, or behavioural, such as changing eating habits, sports participation, body checks, and greater attention to physical appearance in general (Dalley et al., 2019). These actions can be defined as self-regulatory, i.e. the processes through which individuals pursue and achieve their goals. A goal is a cognitive representation of a desired future state that a person wants to achieve (Moskowitz & Grant, 2009). Thus, body shame often leads adolescents to modify their behaviours and habits in order to achieve their desired body, or leads them to avoid situations that may cause anxiety (Vannucci et al., 2018; Radix et al., 2019). After puberty, a decline in sports activity is reported in different studies (Farooq et al., 2018; Finne et al., 2011), and this is borne out in the present study. Daily activities that were previously enjoyable became such a source of discomfort that some participants reported abandoning them an due to the menstrual cycle, even though menstruation occurs over a small portion of the month. Distress resulting from body changes was
relieved when shared with peers, which made participants feel less alone. Their own difficulties thus emerged as similar to those of their peers, reducing shame and encouraging bonding. Gonzaga et al. (2019) have found that social support is related to a lower body dissatisfaction and body anxiety.

Eleven adolescents reported that they were proud of their new bodies, but it was also among these 11 that emotions of shame relating to their bodies emerged. Pride in a new, more womanly figure does not seem to protect against experiencing anxiety about the body, but rather seems related to a desire to transition into a different role, i.e. becoming a woman. Participants referred to the social recognition that comes from having a different, more mature body than they had as children. Even activities related to a more mature body (e.g. buying a bra, going to the beautician, and so on) became a source of pride. But these same activities were, for most participants, a source of shame, pain, and a sense of disorientation with respect to their identity. Again, the sudden change of the body and the novelties that such changes bring seemed to destabilize the adolescents who feel they have to discover everything all over again, and that they must do so in secret.

In line with self-objectification theory (Fredrickson & Roberts, 1997), the participants observed themselves based on how they believed others perceived them. It has emerged from the data that this phenomena could start from puberty. Participants appeared surprised about their sudden shift in body perception from childhood to puberty, describing themselves as a viewed body. A constant feeling of being watched also emerged from the interviews, which fuelled negative emotions, particularly when bodies were not perceived to meet the social ideal of beauty (Daniels et al., 2020). Shame and anxiety relating to menstrual blood and body hair caused many participants to hide areas of their body or alter the activities they engaged in. The abrupt transition from a child’s body to an adolescent body seems to have generated an experience of mourning, and to a feeling of being cut off from previous positive sensations and freedoms connected to childhood.

**Limitation**

Firstly, the participate in the study chosen on a voluntary basis, which may have affected the results. In that girls who chose not to share their experiences may exhibit different cognitive and behavioural patterns than those that emerged in this study. Secondly, the findings could be influenced by the authors’ personal point of view, and the findings could be just one interpretation in a wider range of possibilities. Finally, the sample did not include large socioeconomic differences, as the participants were all from the same region and attended the same school.

**Future implications**

The present study opens new perspectives for drafting programmes to support adolescents in their sexual development, and these programs can be tested in future studies. Evidently, current sex education programs and the information that families share with children related to sexual development do not adequately prepare adolescent girls to deal with body modifications. There is an urgent need to create psychoeducation programs dedicated to young FaB to explain inherent growth and body morphing that takes into consideration:

(i) Sharing scientific information about the reproductive system: It is important to provide explicit information about all the bodily changes that will occur (including, for example, hair and breast growth) and the bodily consequences of these changes (e.g. that discomfort or pain may be experienced during menstruation; Cousineau et al., 2010). It will also be important to supply information regarding the various sanitary devices available for menstruation, and provide exercises on their application. This should be supplemented with information about bras, hair removal, and the use and choice of deodorant.
(ii) Given the frequency of repetitive thoughts related to body modification and its management, it will be important to create programs that include exercises with easy-to-apply metacognitive techniques that adolescents can adopt when faced with repetitive concerns that, according to the literature, only feed their negative emotions and discomfort (McEvoy, 2019; McEvoy et al., 2015).

(iii) The clear advantages of peer support in terms of reducing loneliness and other negative emotions makes it imperative that social skills training aimed at open communication and support is a key element of educating adolescents on how to cope with body changes. Anti-shame exercises will also help adolescents to overcome body shame, enabling them to face their development more positively (Holland et al., 2020).

(iv) Since obstacles relating to sexual development were cited as common causes for giving up sports and other pleasurable activities, programs of support should include pragmatic solutions to this type of avoidance, encouraging a spirit of support and sharing.

(v) With regard to self-objectification, it is possible to integrate existing programs that focus on counteracting the body surveillance that emerges from media content and is internalized by adolescents (Alleva et al., 2015) with a focus on reducing stigma around body shape, genitals, and menstruation (Holland, 2020).

Future studies on body dissatisfaction during puberty and adolescence may benefit from focusing more on secondary sexual characteristics, and moving beyond the thin-fat dichotomy, which is not the only reason for body dissatisfaction. As this study suggests, some behavioural manifestations related to weight (e.g. resorting to diets or gaining weight) can be motivated by a desire to hide one’s secondary sexual characteristics (e.g. breasts, hips).

Conclusion

The present study increases our knowledge about the perceptual, affective, cognitive, and behavioural body image of pubertal girls who have recently sexually developed. It reflects the intense emotions that are attached to the body changes in puberty and managing body changes and secondary sexual characteristics and show a new way of experiencing the body, all appeared in form of main themes in the research.

Author contributions

G.R. data collection, data analysis, writing; R.B. data analysis and review; G.C. data analysis, and supervision.

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