Pubertal Experience and Relationship Quality among Adolescent Girls in Sri Lanka

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Abstract

The first aim of this study was to examine Sri Lankan girls’ experience of puberty using a mixed-method approach. Study 1 consisted of in-depth interviews with eight participants. Four main themes were generated: (1) menarche as a highly significant life event, (2) normative bodily changes as taboo, (3) the silent subjective experience, and (4) significant changes in social life. Based on the fourth theme, we developed a second aim which was to investigate the relationship quality with parents and peers before and after menarche. Study 2 consisted of a questionnaire completed by 86 participants. Results showed that relationship quality with mothers decreased while relationship quality with fathers did not change. Relationship quality with peers increased. Relationship quality with mothers was superior to relationship quality with fathers at pre-menarche, but not at post-menarche. No difference was apparent in relationship quality between mothers and friends, or fathers and friends, at pre-menarche. It was however an apparent difference at post-menarche, favoring the friends in both cases. Further research is required to confirm the results from the present study.

Keywords: Sri Lanka, puberty, menarche, experience, social relationships, IPPA-R.

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Sammanfattning


Nyckelord. Sri Lanka, pubertet, menarke, upplevelse, sociala relationer, IPPA-R.
Pubertal Experience and Relationship Quality among Adolescent Girls in Sri Lanka

Every healthy girl around the world goes through puberty. Much Western research has been conducted to examine girls’ experience of puberty and what implications puberty has for their lives. However, it is not established whether the findings also apply to girls living in more unresearched parts of the world.

The pubertal changes

Puberty is a process consisting of biological changes, driven by hormones, making children reproductively mature (Arnett, 2012; Stattin & Skoog, in press). The changes associated with sexual maturation are divided into primary and secondary sexual characteristics. For girls, the most important primary sexual characteristics include the growth of ovaries and uterus. The secondary sexual characteristics include breast development, growth of body hair, and a rapid growth spurt leading to an increase in height and weight. Girls also develop the typical hourglass body shape. Menarche, girls’ first menstruation, usually occurs two years after the first appearance of other visible changes. The mean age of menarche is 12.6 years in White samples and 12.0 years in Black samples (Biro et al., 2006). Shortly after menarche it is possible to become pregnant (Arnett, 2012).

Puberty occurs in early adolescence. Adolescence is a period starting with the onset of puberty and ending when adult status is approached (Arnett, 2012). Thus, adolescence is seen as a transitional period between childhood and adulthood. In adolescence, several additional changes occur. Cognitive and psychological maturation takes place (Steinberg, 2005). Adolescents develop a better understanding of the social world, more responsible behaviors, and takes, to a greater extent, part in cultural and civic institutions (Skoog & Stattin, in press).

Adolescents’ social relationships also tend to change during puberty (Steinberg & Morris, 2001). Time spent with friends increases. The nature of peer groups change to consist of mixed sexes instead of only one sex. Friendships become more intimate, supportive, and
communicative. At the same time, adolescents become more autonomous and spend less time with parents. The incidence of conflicts with parents, especially with mothers, escalates in the early stage of puberty. However, pubertal maturation tends to lead to a more egalitarian relationship between adolescents and parents, and despite increasing conflicts during the early pubertal years, emotional closeness and positive affect usually remain the same. In sum, the time of pubertal development comprises several parallel key processes.

**Girls’ experience of puberty**

How do girls experience puberty? Puberty may be experienced as troublesome for some individuals. For girls, the prevalence of internalizing symptoms such as depression and eating disorders increases (Hayward & Sanborn, 2002; Herpertz-Dahlmann, Bühren, & Remschmidt, 2013). The bodily growth may be unwanted and girls can become increasingly dissatisfied with their bodies (Bearman, Presnell, Martinez, & Stice, 2006). As girls grow and gain more fat-tissue due to puberty they develop further away from the Western slenderness ideal (Striegel-Moore, Silberstein, & Rodin, 1986) which can result in negative body esteem (Bearman et al., 2006). It is not unusual for girls to worry and get social concerns along with pubertal development. They also tend to become more self-conscious, embarrassed, and shy (Oldehinkel, Verhulst, & Ormel, 2011). Girls may consider menstruation as shameful and embarrassing (Burrows & Johnson, 2005; Chang, Hayter, & Wu, 2010; Uskul, 2004), and private (Chang et al., 2010; Garg, Sharma, & Sahay, 2001). Early developing girls are at greater risk of developing depression and behavioral problems (Graber, 2013; Lee & Styne, 2013; Kaltiala-Hinc, Marttunen, Rantanen, & Rimpelä, 2003; Negriff & Susman, 2011). Pubertal stage, compared to chronological age, is found to be a stronger predictor of panic attack occurrence, eating disorders symptoms (Hayward, Killen, & Hammer, 1992 in Hayward & Sandborn, 2002), and depression (Angold, Costello, & Worthman, 1998). Thus, puberty seems to have important implications for adolescent girls’ wellbeing.
A cultural perspective on girls’ experience of puberty

Most research on girls’ experience of puberty has been conducted in Western countries and it is not established whether these findings apply for girls in other parts of the world. However, research has shown that the context can play an important role in links between puberty and adjustment (Skoog, Stattin, Ruiselova, & Özdemir, 2013), and the experience of menarche (Chrisler & Zitter, 1998; Joan & Zittel, 1998). One can imagine that girls living in more collectivistic and traditional societies, where the role of the family is emphasized and autonomy is not, experience puberty differently than girls living in Western parts of the world. It may be that these girls have a closer relationship with parents in comparison with friends, during adolescence. Girls in Western societies also live in a culture of slenderness (Stice, 1994). However, this norm is not evident in all cultures around the globe and girls living in cultures with other norms might experience bodily changes differently. Thus, there are important cultural differences in norms and values which may influence girls’ experience of puberty.

Girls’ knowledge of puberty differs around the world (Chrisler & Zitter, 1998; Golchin, Hamzehgardeshi, Fakhri, & Hamzehgardeshi, 2012). It is more common for girls in Western countries to receive sexual and reproductive health education compared with girls living in other parts of the world (Uskul, 2004). Without adequate knowledge, girls may not understand why their bodies change during puberty (Garg et al., 2001; Hemachandra & Manderson, 2009; Khanna, Goyal, & Bhawsar, 2005). Thus, they may experience menarche as frightening and as a sign of a serious illness (Hemachandra & Manderson, 2009; Khanna et al., 2005), and it is common for girls to attribute negative reactions to the lack of prior knowledge (Chang et al., 2010). On the other hand, girls with adequate knowledge prior the onset of menarche do not experience negative reactions to the same extent (Brooks-Gunn &
Ruble, 1982). Hence, the experience of puberty is influenced by girls’ prior knowledge which is known to differ across cultures.

In about half of the world’s cultures, menarche is emphasized as an important event comprising several kinds of traditions (Paige & Paige, 1981). In these cultures, girls are often left alone during menarche and can only consume certain prescribed foods (Hemachandra & Manderson, 2009), and menarche is often celebrated with a party (Kim, 2010). Menstruation can be associated with restrictions on work, sex, food, bathing, and religious practices (Garg et al., 2001; Khanna et al., 2005). However, in other cultures, menarche and menstruation are not emphasized to the same extent and not surrounded by these kinds of traditions and customs (Chrisler & Zittel, 1998; Uskul, 2004). In sum, some cultures emphasize the event of menarche to a greater extent in comparison with others.

As evident in the previous sections, both individual and cultural factors seem to influence how girls’ experience puberty. This pinpoints the importance to embrace a broader cultural perspective when examining adolescents’ experience of puberty. If we assume that the results from research carried out in the West are applicable to unstudied societies, we hold an ethnocentric approach. In that case, we live with the belief that the Western societies have the correct answers. Thus, it is paramount to begin conducting research in the more unresearched parts of the world.

The case of Sri Lanka. We chose to carry out our study in Sri Lanka. Sri Lanka is an island nation located in the northern Indian Ocean off the southern coast of the Indian subcontinent in South Asia. It is a developing country (The World Bank, 2014) recovering from a 26 year long civil war ending in 2009. Sri Lanka is experiencing an economic growth spurt since the end of the civil war. Nonetheless, Sri Lanka suffers from high poverty with a BNP per capita of 6 500 US dollars and with about 9% of the population being under the poverty limit (Central Intelligence Agency, 2013). Despite this, Sri Lanka is relatively far
along in the development of gender equality in comparison with other developing countries. Women have been allowed to vote since 1931, they are allowed to attend school, and the literacy is high among the female population (United Nations Sweden, 2006). Today, Sri Lanka is in a position where the country is able to improve the economic situation and to achieve equitable and sustainable human development. Thus, now is an appropriate time for conducting the present study.

Few psychological studies have been conducted in Sri Lanka. However, some studies have investigated the traditions surrounding puberty (Kim, 2010), factors influencing the age of menarche (Godawatta & Wikramanayake, 1988), and menstrual problems and health seeking (Hemachandra & Manderson, 2009) in Sri Lanka. The present study is the first study, to our knowledge, to examine girls’ own experience of puberty. It is essential to conduct this type of research, not only to gain culturally informed basic knowledge, but also to enable implementation of evidence-based interventions, aimed to improve girls’ situations, if necessary.

The present study

We used a mixed-method approach to examine Sri Lankan girls’ experience of puberty, which was the overall objective of the present study. A mixed-methods approach involves combining and utilizing both qualitative and quantitative methods in studying a single phenomenon (Skoog, 2013). Study 1 comprised a qualitative approach in which female adolescents were interviewed in-depth about their experience of puberty. Study 2 was developed against the backdrop of Study 1. It consisted of a quantitative approach in which a larger number of girls were asked to complete a questionnaire examining their puberty and social relationships.
Study 1

The first aim of Study 1 was to broadly examine Sri Lankan adolescent girls’ own experience of puberty using a qualitative method with an exploratory approach. According to Kazdin (2010, p. 332): “qualitative research is an approach to the subject matter of human experience and focuses on narrative accounts, description, interpretation, context, and meaning”. Exploration involves studying areas where no or very little research has been conducted to find relevant and interesting issues in the field (Langemar, 2008). A second aim was to develop hypotheses to investigate further with a quantitative approach in Study 2. This study was conducted with semi-structured, in-depth interviews with eight participants. Our research questions were: What is Sri Lankan girls’ own experience of going through puberty? and What implications might puberty have for their lives?

Method

Participants and procedure

We conducted Study 1 in a Sri Lankan community of about 25,000 inhabitants. We used a convenience sample which consisted of eight girls including one pilot interview participant. Girls were recruited via a non-profit organization. The organization provides financial support for girls to enable them to go to school. All girls went to public schools.

Girls aged 16 years or older were included in the study. Participants’ ages ranged from 16 to 19 years (Median age = 17 years). The participants came from different religious backgrounds and considered themselves as Christians, Muslims or Hindus. Buddhists were not represented in the sample even though it is the main religion in Sri Lanka. Both Tamil and Sinhalese were represented in the sample.¹ Demographical information is reported in Table 1.

One of the organization’s personnel phoned girls in sponsoring groups and asked them whether they wanted to take part in the current study. The caller informed about the topic of

¹ Sinhalese and Tamil are the two predominant ethnic groups in Sri Lanka. The Sinhalese is the major ethnic group containing of 74.9 percent of the Sri Lankan population and the Tamil contains of 15.4 percent (Central Bank of Sri Lanka, 2013).
the interview and about its voluntary nature. We conducted the interviews at the organization’s own school, either in the principal's office or in one of the classrooms. One of the two authors of this study conducted each interview at a time. This was done in an effort to minimize the asymmetry of power between the interviewer and interviewee (Kvale, 2008). We started the interview by introducing ourselves and to inform the participant about the purpose of the study. We informed about voluntariness, confidentiality, and the ability to terminate the interview at any time. We also explained how we were going to use the data in the final report. We gave our contact details to each participant. The participant signed a written informed consent. We later removed the written consent procedure and replaced it with a verbal consent procedure with the same content. The school’s principal or one of the school’s teachers translated during the interviews. The participants spoke either Tamil or Sinhalese and the interviewer spoke English. We used a semi-structured interview guide with different themes and suggested questions (see Appendix A). The interviews lasted for about 40-70 minutes. We recorded and transcribed each interview verbatim and listened to the recordings a second time for correction of errors. We destroyed the recordings when the transcriptions were completed. We gave participants pseudonyms for the sake of this report (see Table 1).

The pilot interview. We conducted a pilot interview to test the feasibility of the study and the usability of the interview guide. Both interviewers participated in the pilot interview. We gave the interviewee the same introduction and information as explained above. The participant gave her verbal informed consent. The pilot interview lasted about 40 minutes. We considered the feasibility to be good and that it would be possible to conduct the planned interviews. We modified the interview guide and developed a written informed consent.
Table 1

*Demographical information of the participants*

<table>
<thead>
<tr>
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<th>Shanthi</th>
<th>Dayani</th>
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<th>Athula</th>
<th>Nireka</th>
<th>Rushani</th>
<th>Pedi</th>
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Analysis

We analyzed our data with thematic analysis (Braun & Clarke, 2006; Langemar, 2008). We started the analysis by familiarizing ourselves with the data. We independently read and re-read the data and made notes to record patterns and ideas for codes. We discussed our separate findings and agreed upon the final codes. We analyzed the codes and created broader candidate themes. We reviewed the themes by checking them against all codes and against the whole dataset. Finally, we refined and named each theme and selected appropriate quotes for them.

Ethical considerations

There are no ethical guidelines for psychological research in Sri Lanka. We therefore followed the international, ethical guidelines put forward by the American Psychological Association (APA, 2003 with 2010 amendments). These are in line with the ethical guidelines used by committees reviewing biomedical research proposals in Sri Lanka (Forum of Ethics Review Committees, Sri Lanka, 2007).

It is not comme-il-faut to talk openly about puberty in Sri Lanka, especially when it comes to the female sex (S. Dias, personal communication, March 12, 2014). We considered it important that the study was conducted with high ethical standards. We took several measures to ensure this.

First, we included girls who were 16 years or older who by themselves could decide about participation in the study. This was done in an effort to minimize the number of people who needed to know about the participation. We also hypothesized older girls to be more comfortable talking about the sensitive subject of puberty. Older adolescents have more developed cognitions in comparison to younger adolescents (Arnett, 2012). It would therefore be reasonable to think that older adolescents would be able to give a more comprehensive and detailed narrative of their experience of puberty.
Second, we carried out a pilot interview to examine the study’s feasibility and to test whether the interview guide generated information relevant to the research questions. Another purpose was to ensure not doing harm with the study.

Third, we informed the interviewees about voluntariness and confidentiality at different stages of the study and we actively asked for their approval whether it was done with a written or verbal consent.

Fourth, we limited the number of adults in the room during the interviews.

Finally, we emphasized the importance of conducting the interviews in a sensitive and respectful manner. We considered us especially suitable for the task because of our clinical psychologist training.

Results

Four main themes were extracted from the interviews: (1) menarche as a highly significant life event, (2) normative bodily changes as taboo, (3) the silent subjective experience, and (4) significant changes in social life. The first main theme was further categorized into one sub theme: (1) customs and traditions. This subtheme, in turn, consisted of another three sub themes: (1) seclusion from the social (male) world, (2) celebration party for womanhood, and (3) symbolic bath to clean off the filth of menstrual bleeding.

Theme 1: Menarche as a highly significant life event

When we asked about pubertal experience menarche was the first aspect brought up by all participants. They termed it “to attend age”. Menarche was described as a highly significant event for every Sri Lankan girl that goes through puberty. They felt it was a surprising and sudden event, with a dramatic demarcation, which resulted in major changes in life. Two of the participants were able to indicate the exact date of when they got their first menstruation. Other pubertal changes were not as prominent in the participants’ narratives.

Below is an excerpt from the narrative of Dayani:
Interpreter for Dayani: "That’s the first change as a girl, the first instance that changes took place."

Nireka described how her life became different after menarche.

Interpreter for Nireka: “... when you are a child the freedom what she had, she haven’t it, like totally, it lost on that day ... is totally different and like no freedom, all your freedom is lost, totally different.”

Three out of the girls felt they were too young when they got their first menstruation.

Interpreter for Vidu: “... when she attended age, she was only twelve years. Now when she thinks, if she was like fifteen or sixteen years when she attended age, it would have been better, cause then she can understand everything. Cause when she was twelve she cannot understand, so what she thinks is better than attending age when small, when we are big if it happens, it’s better.”

**Customs and traditions: Seclusion from the social (male) world.** When girls had their first menstruation they were secluded in their family’s house for a certain time. The girls’ seclusion periods ranged from six to 30 days. They were either placed in a separate room in the house or in a private place inside another room. According to girls’ narratives, the purpose of the seclusion was for them not to see or be seen by men. Girls were therefore not allowed to leave the room, unless they were covered, if there was a man in the house. Athula gave her narrative:

Interpreter for Athula: “Normally the Sri Lankan custom, they keep you alone, alone in the sense that they don’t allow any men to approach you ... they was not allowed to come to her room, only the ladies was allowed to come to her room.”

It was important that the girls were secluded as soon as possible after the onset of menarche. The girls were, therefore, brought home immediately if they were at school at the
time of menarche. They were not allowed to go to school at all during this period. Nanda explained it like this:

Interpreter for Nanda: “She told the mother and said “I will go to school and then come and stay inside the room, because all my schoolwork will be neglected.””

Interviewer: “But you were not allowed to?”

... 

Interpreter for Nanda: “No.”

**Customs and traditions: Celebration party for womanhood.** When the seclusion was terminated the participants’ families held a party to celebrate the girls’ new stage in life: womanhood. Relatives, neighbors, and friends were invited. During the party, religious and cultural practices took place. The girls received gifts and saris (i.e. a traditional female garment). They were allowed to meet men again. Shanthi explained:

Interpreter for Shanthi: “So she was very happy to come out because, at the party everybody was there, and the whole family was there so she was happy, but also she felt happy to see them, after all these one week and two three days, so it was the first time she saw the father and all that, so she was happy to see them and that’s the first time they have had such a party at home.”

**Customs and traditions: Symbolic bath to clean off the filth of menstrual bleeding.** The girls had to take part in a symbolic bath during the time of menarche. Other women, such as the mother, sisters, aunts, and grandmothers were often the ones bathing the girls. Special cans and products were used. This rite was believed to remove pollution and restore girls’ purity.

Interpreter for Nanda: “… when she had a bath, they have this small pot kind of thing, it was her mother’s brother’s wife … auntie was the one who bathed her … and then the others come and help bathe her, and then they put this… sandalwood powder, they
put on her face, that’s Asian people, Sri Lankan and Indians, they use sandalwood to, they think that when you put it like you become beautiful, fair, it helps when you have patches like black patches and pimples, marks and all, it helps, so they put that on her face.”

The girls received clean clothes to wear. Clothing’s worn during menstruation were thrown or given to somebody else for usage. Vidu’s clothes were given to the community’s laundry woman:

Interpreter for Vidu: “Only the dress, not underlinen, only the dress, they give it to her.”

Interviewer: “... why is this done? Why do you do this?”

Interpreter for Vidu: “Whatever sin, all the sin has to go, that’s the reason they do it.”

Theme 2: Normative bodily changes as taboo

The participants described that their bodies started to change during puberty. It was however unclear in what ways their bodies changed. This was a highly sensitive subject to talk about and several girls refused to talk about it at all. In spite of this, they appreciated the changes. Nanda gave her perspective:

Interpreter for Nanda: “… when she notices those changes, she felt that it was beautiful, it’s nice, she was happy about it.”

Interviewer: “So did you want your body to change?”

Interpreter for Nanda: “Yes.”

Interviewer: “Can you tell me a little about these changes, what happened?”

Nanda: (Giggles)
Interviewer: “You don’t have to answer if you don’t want.”

... 

Interpreter for Nanda: “She doesn’t want to.”

**Theme 3: The silent subjective experience**

Few of the participants expressed feelings or thoughts when they told us about their experience. Some of the participants were able to give some descriptions of their subjective experience, while others only gave insinuations. In the end of the interview Nanda said:

Interpreter for Nanda: “The way we suffer, your culture is better actually.”

Many of the participants used the word “difficult” when describing how they felt or what they thought about a specific topic. They described their experience of being secluded as the most difficult thing.

Interpreter for Shanti: “... the most difficult thing is staying in the room for many, many days ... and then you are not allowed to see your father or a man whatsoever.

*She had heard it, but until it happened she didn’t really realize the gravity of it.*”

Several girls described menarche as scary as they did not know why they suddenly began to bleed.

Interpreter for Pedi: “Because it happened so suddenly she got scared ... she felt like ... since she was alone and it had happened suddenly, she felt afraid ... she thought it was some other sickness.”

Two of the participants described the customs and traditions as they did not have any choice. Shanthi said that every girl has to go through it and adapt to all the following changes in life.

Interpreter for Shanthi: “Earlier she didn’t feel like it was something she could do, she thought it was impossible to do but then again, she felt like there’s no way she can go out of the system. So even difficulty she adapted herself, to what the parents were
expecting her to be, what the society expected her to be, even with difficulty she adjusted herself.”

Some of the girls expressed positive feelings as well. They liked having a party and to receive gifts, even though they often preferred their menarche not to be a public matter. Dayani elaborated this further:

Interpreter for Dayani: “So those times of staying alone and drinking these egg and all that, though she hated it, now to think back it’s like fun and how she did it even if she didn’t like it, she did it and those are not very bad memories, or they are positive like, a part of growing up.”

Theme 4: Significant changes in social life

Menarche marked the beginning of the girls’ new stage of life. They became “big girls” when they reached menarche. The girls’ first menstruation was not merely an individual matter. It was also a communal one in which they affirmed their new status and roles as women. They were now obligated to behave as “big girls” and to meet the new demands that were placed upon them. This took some of the girls by surprise. Nanda described it like this:

Interpreter for Nanda: “She was like thinking of what is going on, because there is restriction after restriction, “Don’t do this, don’t do this, don’t do this”, she was like “What is going on? Why?””

The girls’ new stage in life was embossed by a lot of new rules and restrictions. It was highly important that the girls interacted in a way that was considered appropriate for a “big girl”. It was often the mothers who told them about these rules and regulations. How they interacted with other individuals, especially individuals of the opposite sex, was crucial for their own future life and for their families’ reputation. Suddenly, their right to make own decisions and to be free were drastically limited. Below are two excerpts from the narratives of Dayani and Rushani:
Interpreter for Dayani: “... if you just look at everybody, smile at everybody, then people will misunderstand you. That will be attributed to your character and that will be a problem on your wedding day because husband, according to the really traditions of families, they look for a girl who is like perfect. Somebody who is more open and talking ... that will not help you get a good husband or a good marriage.”

Interpreter for Rushani: “When you go out with boys, some parents will get to know and there be trouble at home ... the others will blame the parents saying they have not raised their children properly ... and to get bad name for the parents ...”

Girls were expected to behave more modest in interaction with female friends. Instead of being playmates they became study friends spending less time together. Some of the girls were forced to terminate their friendships with boys when they reached menarche. The girls’ relationships with their fathers were also altered to become less emotionally attached.

Interpreter for Rushani: “Restrictions in dealing with the opposite sex, even with her own father, she had to limit being playful and talking was limited, even with dealing with boys, talking with boys was limited.”

Interpreter for Nireka: “She had got an told her friend like this: “My grandmother scolded me so we better think and do whatever we have to do very carefully”, so because of that the friendship, the relationship between two friends, had got less, so later she stopped going to the friend’s house and they came to her house.”

Nanda explained how her parents placed new and unfamiliar restrictions upon her which made her react with frustration:

Interpreter for Nanda: “Earlier if there was something she needs to pick up from friends’ house they wouldn’t make a big fuss, but now, after that, if she wanted something to go and pick from places, they would say no don’t ... she felt like pain ... pain in the sense like troublesome, like she was annoyed by it ... so she used to fight...
with the mother, saying: “Whatever I want it, I have to go and get it”... so her mother said: “Right now you would feel that way, but as time passes you will get used to it, you will understand.”

Conclusions

In the present study, we found that menarche was a highly significant life event for girls in Sri Lanka, with a lot of customs and traditions related to it. This is in line with previous research conducted in south Asian countries which shows that it is customary to emphasize girls’ menarche (Kim, 2010; Uskul, 2004). Many of the girls hesitated to talk about bodily changes probably mainly due to the surrounding taboos. It was however clear that these bodily changes were a big part of their experience and was welcomed by the girls. Although some of the girls recognized it as a positive experience, menarche was often described as a negative experience using words like “scary” and “difficult”. However, the most striking finding was the significant changes of the girls’ social worlds due to menarche. It seems to be important to publicly making the fact that girls have gotten their first menstruation. Menarche was not just an individual matter but also a communal one. Girls affirmed their new status and roles as “big girls” within the community. This had major implications for girls’ social relationships. Girls’ parents started to behave differently placing completely new and unfamiliar expectations upon them. Some of the girls were supposed to terminate their relationships with male peers and to change the character of their relationships to female friends. Girls’ whole lives appeared to have changed overnight.

Based on the findings concerning changes in social structure and social relationships, we wanted to take our study a step further. We wanted to examine whether girls’ social relationships differ after menarche in comparison with before. To do this we used a quantitative approach. This allows for comparisons of conclusions in which the results from Study 2 can be used to verify or reject the results from Study 1, using a larger sample.
Study 2

The first purpose of Study 2 was to investigate the generalizability of the qualitative results from Study 1. The second purpose was to examine whether or not there was a significant difference in relationship quality with parents and friends before and after menarche. As pointed out in the introduction, Western studies have shown that adolescents’ social relationships change during puberty (Steinberg & Morris, 2001). The results from Study 1 indicated that this also is the case for Sri Lankan girls, however, in a different way. It seemed that the girls did not spend increasingly amount of time with friends, as Western adolescents usually do (Steinberg & Morris, 2001). On the contrary, the girls got more restrictions placed upon them when they reached menarche, which seemed to affect their relationships. We wanted to examine if there was a difference in relationship quality with mothers, fathers and peers before compared with after menarche.

Research questions

1. Do the results from study 1 apply to a larger sample of Sri Lankan adolescent girls?
2. Are there significant differences in relationship quality within relationship types (mother, father, and friends) between time points (pre- versus post-menarcheal)?
3. Are there significant differences in relationship quality between relationship types within time points (pre- and post-menarcheal)?

Method

Participants

The final sample consisted of 86 girls after removing two questionnaires due to two participants not living up to the criteria of being 16 years old. We conducted a pilot with one girl living in the same town as the majority of participants. The girl did not go to an international school but was considered to be equivalent in the English language as the rest of the participants. She was included in the final sample. All participants, except the pilot
participant, were recruited from six international schools. Three of the schools were located in a city with about 25 000 inhabitants in the middle parts of Sri Lanka (the same city as in Study 1). We asked four schools in this city to participate in the study, whereof three accepted. The remaining three participating schools were located in a city on the south coast with about 100 000 inhabitants. We asked two more school on the south coast to take part in the study but they declined. We only asked international schools to participate as the questionnaire was in English. The sample can therefore be viewed as a sample of convenience. The age of the participants varied from 16-24 years ($M_{age} = 18.1$ years, $S.D. = 2.08$). Forty-two per cent spoke Sinhalese, 4% spoke both Tamil and Sinhalese, and 16% spoke only Tamil. We used information regarding building material of homes to determine the socioeconomic status of the participants (Miles, 2000; R. Herath, personal communication, March 25, 2014). Fifty-two per cent lived in a cement house with roofing sheets, 42% lived in a cement house with asbestos/tiles roof, 2% lived in a wooden house with roofing sheets and 1% lived in a mud house. Girls living in a cement house with asbestos/tiles roof were considered to come from families with the highest socioeconomic status, followed by girls living in a cement house with roofing sheets. Girls living in a mud house were considered to come from families with the lowest socioeconomic status. Forty-one per cent of the participants were Buddhists, 24% Muslims, 22% Hindus, and 13% Christians. This distribution is not entirely comparable to the general distribution in Sri Lanka$^2$. All religions were, however, represented in the sample with Buddhism being the major religion.

**Measures**

**Menarcheal experience.** We constructed an instrument with items generated from the results of Study 1 (see Appendix B). The instrument consisted of 49 questions or statements. We constructed the questionnaire according to the Conflict tactics scale principles, which says

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$^2$ The general distribution of religion in Sri Lanka is: Buddhists, 70.2%, Hindus, 12.6%, Muslims, 9.7%, Christians, 7.4% and others, 0.1% (Central Bank of Sri Lanka, 2013).
that you should start with less threatening or sensitive questions before asking questions about more sensitive matters, to facilitate disclosure (Straus, 1979). On some of the questions, participants responded on four-point Likert scale ranging from (1) “don’t agree at all” to (4) “agree completely”.

**Inventory of Parent and Peer Assessment.** We used the revised version of Inventory of Parent and Peer Assessment (IPPA-R) to measure the quality of relationships (Armsden & Greenberg, 1989). IPPA-R measures adolescents’ perceived attachment to mother, father, and peers. It is a reliable measurement for attachment with a strong internal reliability documented in prior studies (Armsden & Greenberg, 1989). Participants responded to each item by indicating the degree of agreement on a five-point Likert scale ranging from (1) “almost never or never true” to (5) “almost always or always true”. We used IPPA-R for measurements of the quality of relationships before menarche (pre-menarcheal) and for the current quality of the relationships (post-menarcheal).

**Attachment to mother/father.** The measurement of attachment to mother/father consists of 25 items for each parent. For example, “my mother (father) accepts me as I am”, “my mother (father) can tell when I’m upset about something”, “I don’t get much attention from my mother (father)” (reversed). In the current study the Cronbach alpha coefficients were .82 (pre-menarcheal) and .90 (post-menarcheal) for mother and .84 (pre-menarcheal) and .84 (post-menarcheal) for father. This indicates that the measures were reliable in the current study (Pallant, 2001).

**Attachment to friends.** The measurement of attachment to friends consists of 25 items. For example, “my friends understand me”, “I feel my friends are good friends”, “when we discuss things, my friends care about my point of view”, “my friends don’t understand what I’m going through these days” (reversed). In the current study the Cronbach alpha coefficients
were .88 (pre-menarcheal) and .88 (post-menarcheal). This indicates high internal reliability (Pallant, 2001).

**Procedure**

We administered the questionnaire to one pilot participant to test the feasibility of the questionnaire, the individual measures, and the instructions. The measure regarding menarcheal experience was thereafter modified. We found IPPA-R to have a high feasibility and chose to use it for the rest of the administrations.

We handed out the questionnaires to participants at each school once, and they completed the questionnaires in the classrooms. We followed the ethical guidelines put forward by APA when we informed participants about voluntariness and confidentiality (APA, 2003 with 2010 amendments). We did not reveal the full purpose of the study as it might have influenced the participant’s responses. However, we informed about the study topic, the themes of the questionnaire and the estimated time to fill it in. We handed out contact details to enable participants to contact us later on. We informed participants about the age limit and girls younger than 16 years were asked to leave the classroom. There were no other exclusion criteria. We administered the questionnaire before or after school hours to avoid taking time away from the participants' education. We handed out the questionnaire as one part in the first three schools. We later divided the questionnaire and handed it out in three separate parts. The first part consisted of the measure of menarcheal experience. The second part was the retrospectively measured (pre-menarcheal) IPPA-R and the third part consisted of IPPA-R (post-menarcheal). We separated the questionnaires to clarify the importance for the participants to think retrospectively when filling out the second part of the questionnaire.
Analysis

We did all statistical analyses using SPSS, version 20.0. We included all participants who had responded to a minimum of 20 of the 25 items for every IPPA-R measure when calculating the variables used in the analyses. We examined the normal distribution using the tests of Kolmogorov-Smirnov, visual analysis, and skewness and kurtosis for the different measures. Three of the eight variables were not normally distributed. We checked for outlier in our data. We found that four of the variables had one outlier each. The scores of each outlier seemed to be genuine and because they did not seem to affect the original means, we decided to include these scores in our analysis.

We used bivariate correlations analysis to analyze the correlation between all variables used. The relationships between the variables were investigated using Pearson product-moment correlation coefficient.\(^3\)

We used paired samples t-tests for comparisons between measures. Some of the variables were not normally distributed. However, due to the large enough sample size \((N > 30)\), we did not use a non-parametric alternative (Pallant, 2001). The level of significance was set at \(p < .05\).

Results

Menarcheal experience

Descriptives. Ninety-six percent of the sample agreed with the statement of being secluded at the time of menarche. Ninety-three percent were not allowed to go to school during the seclusion and 93\% were not allowed to meet men. The experience of being secluded varied among the participants (see Table 2). Eighty-five percent had a party after the seclusion and 96\% agreed that the party was held to celebrate menarche. Ninety-five percent reported that they had one or several ceremony baths at the time of menarche. Sixty percent

\(^3\) We also ran analyses not based on the assumption of normal distribution. However, the results did not differ from the results generated by the standard tests presented in the text.
reported that they were considered dirty when they got their first menstruation and 89% of the
tested that they became beautiful when they had the bath/s. Table 3 shows the participants’
experience of life after menarche which varied between participants.
Table 2

**Experience of Seclusion ("When I was in the room I felt...") as a Percentage of the Sample**

<table>
<thead>
<tr>
<th></th>
<th>Don’t agree at all</th>
<th>Don’t agree particularly</th>
<th>Agree pretty well</th>
<th>Agree completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>It was like a prison</td>
<td>27.5</td>
<td>20.0</td>
<td>35.0</td>
<td>17.5</td>
</tr>
<tr>
<td>Lonely</td>
<td>23.2</td>
<td>22.0</td>
<td>35.4</td>
<td>19.5</td>
</tr>
<tr>
<td>Happy</td>
<td>22.5</td>
<td>20.0</td>
<td>36.3</td>
<td>21.3</td>
</tr>
<tr>
<td>Scared</td>
<td>47.4</td>
<td>17.9</td>
<td>19.2</td>
<td>15.4</td>
</tr>
<tr>
<td>Embarrassed</td>
<td>30.3</td>
<td>11.8</td>
<td>35.5</td>
<td>22.4</td>
</tr>
<tr>
<td>Special (in a good way)</td>
<td>10.1</td>
<td>13.9</td>
<td>32.9</td>
<td>43.0</td>
</tr>
<tr>
<td>It was meaningful</td>
<td>7.6</td>
<td>12.7</td>
<td>35.4</td>
<td>44.3</td>
</tr>
<tr>
<td>Sad</td>
<td>36.7</td>
<td>27.8</td>
<td>24.1</td>
<td>11.4</td>
</tr>
</tbody>
</table>

Table 3

**Life after menarche ("After I attended age...") as Percentage of the Sample**

<table>
<thead>
<tr>
<th></th>
<th>Don’t agree at all</th>
<th>Don’t agree particularly</th>
<th>Agree pretty well</th>
<th>Agree completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>My life changed</td>
<td>10.6</td>
<td>12.9</td>
<td>38.8</td>
<td>37.6</td>
</tr>
<tr>
<td>I started to focus on studies</td>
<td>4.7</td>
<td>7.1</td>
<td>28.2</td>
<td>60.0</td>
</tr>
<tr>
<td>I was no longer carefree</td>
<td>20.7</td>
<td>20.7</td>
<td>34.1</td>
<td>24.4</td>
</tr>
<tr>
<td>I wanted to be a child for a</td>
<td>16.9</td>
<td>22.9</td>
<td>33.7</td>
<td>33.7</td>
</tr>
<tr>
<td>longer time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I started to behave differently</td>
<td>21.7</td>
<td>18.1</td>
<td>31.3</td>
<td>28.9</td>
</tr>
<tr>
<td>I became a different person</td>
<td>25.0</td>
<td>15.5</td>
<td>28.6</td>
<td>31.0</td>
</tr>
</tbody>
</table>
Quality of social relationships

**Bivariate correlations.** The upper part of Table 4 shows a summary of intercorrelations between each of the variables concerning relationship quality. There were statistically significant positive relations among all of the study variables. This indicates that girls who had positive relationships with mother, father, or friends were likely to also have positive relationships with others, and vice versa. The strengths of the correlations ranged from small (.29) to large (.84) (Pallant, 2001). The strongest correlations reflected stability in relationship quality from before to after menarche. The weakest correlations were found between relationship types.

**Paired-samples t-test.** Paired-samples t-tests were conducted to evaluate whether or not the girls’ scores on IPPA-R differed between pre- and post-menarche and between relationships (e.g., between mothers and friends). The lower part of Table 4 shows the means and standard deviations for these measures and Figure 1 illustrates the differences and changes in means.

First, we compared relationship quality within relationship types between time points (i.e., pre- to post-menarche). There was a statistically significant decrease in IPPA-R scores on the part asking about the girls’ relationship with mothers from pre- to post-menarche, \( t(79) = 3.20, p < .01 \). The eta squared statistic indicated a large effect size (.11) according to Pallant (2001). However, there was no statistically significant difference in IPPA-R scores on the part asking about girls’ relationships with fathers, \( t(78)=1.06, p > .05 \). In contrast, there was a statistically increase in IPPA-R scores on the part asking about the adolescents’ relationship with friends from pre- to post-menarche, \( t(78)=-2.58, p < .05 \). The eta squared statistic indicated a moderate effect size (.08) (Pallant, 2001). Thus, whereas the relationship quality with mothers decreased, the relationships quality with fathers was seemingly unaffected by menarche. The relationship quality with peers increased after menarche.
Second, we compared relationship quality between relationship types within time points. The analyses revealed that there was a statistically significant difference in IPPA-R scores between girls’ relationships with mothers and with fathers, $t(83) = 3.74, p < .001$. The eta squared statistic indicated a large effect size (.14) (Pallant, 2001). This difference disappeared when conducting a $t$-test of the same groups at post-menarche, $t(77) = 1.72, p > .05$. There was no statistically significant difference in IPPA-R scores between girls’ relationships with mothers and with friends at pre-menarche, $t(81) = 1.61, p > .05$. There was however a statistically significant difference in IPPA-R scores between the same groups at post-menarche, $t(78) = -2.36, p < .05$. The eta squared statistic indicated a moderate effect size (.07) (Pallant, 2001). There was no statistically significant difference in IPPA-R scores between girls’ relationships with fathers and with friends at pre-menarche, $t(81) = -1.84, p > .05$. There was however a statistically significant difference in IPPA-R scores between the same groups at post-menarche, $t(78) = -4.30, p < .001$. The eta squared statistic indicated a large effect size (.19) (Pallant, 2001). Thus, the relationship quality with mothers was superior to the relationships with fathers at pre-menarche, this difference was not apparent at post-menarche. In contrast, there was no apparent difference in relationship quality between both mothers and friends, or fathers and friends, at pre-menarche. It was, however, an apparent difference at post-menarche, favoring the friends in both cases.
Table 4

*Summary of Intercorrelations, Means, Standard Deviations and Reliability Estimates of the Quality of Social Relationships*

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rel. with mother, pre-menarcheal</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Rel. with mother, post-menarcheal</td>
<td>0.70**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Rel. with father, pre-menarcheal</td>
<td>0.49**</td>
<td>0.42**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Rel. with father, post-menarcheal</td>
<td>0.50**</td>
<td>0.62**</td>
<td>0.84**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Rel. with friends, pre-menarcheal</td>
<td>0.45**</td>
<td>0.39**</td>
<td>0.32**</td>
<td>0.30**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6. Rel. with friends, post-menarcheal</td>
<td>0.48**</td>
<td>0.29*</td>
<td>0.41**</td>
<td>0.40**</td>
<td>0.67**</td>
<td>1</td>
</tr>
<tr>
<td>(M)</td>
<td>3.94</td>
<td>3.78</td>
<td>3.71</td>
<td>3.67</td>
<td>3.84</td>
<td>3.97</td>
</tr>
<tr>
<td>(SD)</td>
<td>0.53</td>
<td>0.67</td>
<td>0.56</td>
<td>0.58</td>
<td>0.57</td>
<td>0.52</td>
</tr>
<tr>
<td>Cronbach’s Alpha</td>
<td>0.82</td>
<td>0.90</td>
<td>0.84</td>
<td>0.84</td>
<td>0.88</td>
<td>0.88</td>
</tr>
</tbody>
</table>

Note. * \(p < .05\); ** \(p < .01\)
Conclusions

We found that the results from Study 1 seem to apply to a larger sample of Sri Lankan girls as well. Our analysis also indicated that the experience of seclusion and life after menarche varies between participants. This variation indicated that some of the girls experienced seclusion as positive while other experienced it as negative. The second aim of Study 2 was to examine the girls’ social relationships, both within relationship types between time points and between relationship types within time points. The results indicated that girls’ relationship quality with fathers was stable between time points, the relationship quality with mothers decreased and the relationship quality with friends increased between time points. The relationship quality with fathers seemed to be inferior to the relationship quality with both friends and mothers at both pre- and post-menarche (according to the means), despite the decrease in the relationship quality with mothers (from pre- to post-menarche). The
relationship quality with fathers seemed, however, to be more stable over time without any significant changes in any direction. This also became apparent in the analysis between relationship types within time points where the significant difference in relationship quality between fathers and mothers at pre-menarche was no longer apparent at post-menarche. A difference in relationship quality between mothers and friends, and fathers was apparent at post-menarche but not at pre-menarche.

General discussion

Every healthy girl around the world goes through puberty. Puberty is a time of biological, social, and psychological changes (Arnett, 2012). Previous research has established that puberty has important implications for adolescents’ lives (Bearman et al., 2006; Hayward & Sanborn, 2001; Herpertz-Dahlmann et al., 2013). However, there is an important knowledge gap concerning the meaning and experience of puberty in more unresearched, non-Western parts of the world. In the present study, we wanted to help close this gap and examine the Sri Lankan girls’ experience of puberty which was the overall objective of the study.

The results indicated that menarche is a significant life event. This was evident in both studies and is in line with previous findings (Burrows & Johnson, 2005; Kim, 2010). According to previous research, limited pubertal knowledge before reaching menarche can affect the experience in a negative way (Brooks-Gunn & Ruble, 1982; Chang et al., 2010) which was also indicated in Study 1. Girls often lacked knowledge about menstruation and thought they had suffered an illness, and became scared and worried at the time of menarche. They often used the word "difficult" to describe their experiences. Some girls regarded, however, their menarcheal experiences as positive. The results from Study 1 were to a high extent supported by Study 2. The majority of participants were secluded from men at the time of menarche. A celebration party was held and girls took part in one or several symbolic
baths. The subjective experience of the seclusion and of life after menarche varied between participants. Despite girls’ hesitations against talking about bodily changes in Study 1, the majority of girls welcomed these changes. This contradicts Western studies stating that girls’ deviation from the slenderness norm may create negative self-concepts and feelings (Bearman et al., 2006). One can assume that this norm is not as widespread in Sri Lanka which can be an explanation for these contradictory findings.

The most striking finding from Study 1 was the significant changes of the girls’ social worlds due to menarche. When girls reached menarche, parents and the community started to place new and unfamiliar expectations upon them. This is comparable with Western studies showing that new expectations are commonly placed upon girls due to their more adult like appearance (Mendle, Harden, Brooks-Gunn, & Graber, 2010; Skoog & Stattin, in press). Paradoxically though, pubertal maturation does not necessarily imply that adolescents’ cognitive, behavioral, and emotional abilities are developed to the same extent (Varlinskaya, Vetter-O’Hagen, & Spear, 2013). While these expectations develop simultaneously with progressing puberty in Western societies, in Sri Lanka, these expectations evolve over night in conjunction with the discrete event of menarche. Thus, Sri Lankan girls do not have the time to gradually acclimate to these new demands. Instead, they have to adapt from one moment to the next. According to the maturation compression hypothesis (Mendle et al., 2010) or stage termination hypothesis (Skoog & Stattin, in press) a rapid developmental tempo might be problematic. A quickly progression through puberty may not provide adolescents with sufficient time to handle and complete important developmental tasks of childhood or to understand and adapt to the arising biological and social challenges (Mendle et al., 2010). This may be problematic for adolescents. The developmental readiness hypothesis states that individuals are at greatest risk of developing psychological problems when they are not emotionally or cognitively ready for the major changes of puberty (Marceau, Ram, Houts,
Grimm, & Susman, 2011). With this in mind, it would be desirable to examine whether this is true for adolescent girls in Sri Lanka.

The second part of Study 2, examining relationship quality, also indicated intriguing results. According to previous research, peer groups become increasingly important during the adolescence years. Adolescents experience more closeness in their relationships and have more gratifying relationships with their peers. They turn to friends for support in times of worry and concerns (Steinberg & Morris, 2001). This is in line with results from the present study indicating an increase in relationship quality with peers from pre- to post-menarche. Prior to menarche, there was no apparent difference between relationship quality with peers and with mothers. A significant difference was however evident at post-menarche, favoring the peers. The relationship quality with mothers decreased from pre- to post-menarche. According to previous findings there is an increase in conflict with parents during early and middle adolescence (Steinberg & Morris, 2001). This may apply for Sri Lankan adolescents as well. When Sri Lankan girls reach menarche they experience new demands accompanied with more stringent rules and regulations, often conveyed by their mothers. One can imagine that this creates an increase in conflict which in turn might result in a decrease in the relationship quality with mothers. However, Western studies have shown that in spite of an increase in conflicts between adolescents and their parents, emotional closeness and positive affect usually remains the same (Steinberg & Morris, 2001). Therefore, it may not be an increase in conflict that was the reason for the indicated decline in the girls’ relationship quality with mothers. The relationship quality with fathers was stable between the two time points. It was also lower than for mothers at both pre- and post-menarche, despite the decline for mothers. This suggests that girls are closer with their mothers at both pre- and post-menarche. How can we explain this? Westerns studies have shown that the mother-daughter relationship is often more intimate than the father-daughter relationship (Arnett, 2012). It is
more likely that daughters turn to their mother for emotional support and for conversations of personal issues. Mothers also tend to be more directly involved with the adolescent and take greater responsibility in parenting. Maybe this explains why mother and daughter experience more conflicts in their relationship during adolescence (Steinberg & Morris, 2001) and why girls’ negative feelings toward their mothers increase (Arnett, 2012). However, it is unclear whether these findings apply for Sri Lankan adolescents.

**Strengths and weaknesses**

This study has some limitations. One of the organization's personnel translated the interviews in Study 1. The interpreter was however not trained. Therefore, we carefully explained the importance of translating statements verbatim. Despite our efforts the interpreter translated in third person (“she is”) instead of first person (“I am”). Sometimes the interpreter and the interviewee talked without including the interviewer. This influenced the study’s validity in a negative way (Kazdin, 2010). The questionnaire used in Study 2 was in English and we therefore included only participants from international schools. We used expressions used by the interviewees, when we constructed the questionnaire, to maximize the understandability. We also discussed the questionnaire with one of the interpreters (R. Herath, personal communication, March 25, 2014) and conducted a pilot. We cannot, in spite of this, be sure that all participants understood the questions in the questionnaire.

There was an imbalance of power in Study 1. Participants depended on the organization for financial support and the organization's main financial support came from Swedish donors. This may have created a feeling that they owe a debt of gratitude and a feeling of obligation to take part in the study, both for participants and interpreters. We emphasized, for participants, the voluntary nature of the study using a written informed consent. The written consent was not, however, fulfilling its purpose but instead making
participants nervous and unsure. We therefore removed and replaced it with a verbal consent with the same content, which had been proven working well during the pilot interview.

Study 2 relied on self-reports measures. Self-reports measures have several limitations including self-distortions, subjectivity, and influence of others. The measures were also not normed in Sri Lanka. The questionnaire measuring menarcheal experience had not previously been used and the validity and reliability are therefore unknown. No questionnaire regarding menarcheal experience, designed to fit the Sri Lankan population, exists in the literature. We therefore considered it legitimate to use our own designed questionnaire. Self-report measures were also the most appropriate alternative given the study’s objective.

The present study included only post-menarcheal participants. Therefore, some of the responses are of a retrospective nature and are susceptible to potential problems in recall.

It would have been preferable with a larger sample in Study 2 which would have facilitated the generalizability (Kazdin, 2010). The sample was however large enough for detecting differences with paired-samples t-tests. The participants in Study 2 also represent a convenience sample and the result can be affected by volunteer bias. Furthermore, this study was not an experimental design. As a result, no causal inferences can be drawn.

The teachers were often present when we administered the questionnaire. This could have influenced the participants’ answers. To limit the teachers’ influence of adolescents’ answers we gave the information and instructions ourselves. We therefore had greater control over the execution of the survey collection.

The questionnaire took about 40 minutes to complete which increased the risk of the fatigue effect. There was, however, no apparent sign of the presence of this effect when running the analysis. The pilot also proved high feasibility despite the length of the questionnaire. Before participants agreed to take part in the study we also explained how long it would take to complete the questionnaire.
Despite these limitations, the study has several strengths. First, the instrument used in Study 2 (IPPA-R), has high reliability and is a widely used instrument in Western studies. The Cronbach’s alpha, calculated in Study 2, affirmed this.

Second, our own measure of menarcheal experience seemed to have high usability. The participants’ seemed to understand the questions and how to answer the questionnaire.

Third, the use of a mixed-method design is another important strength. The application and combination of different methods facilitated both the internal and external validity. Study 1 provided a deeper understanding of participants’ experience of puberty. Study 2, on the other hand, gave a broader narrative. The mixed-method design, therefore, allowed for a more comprehensive description of the investigated phenomenon. The different parts of the study were able to verify each other, and the conclusions from Study 1 were strengthened by Study 2 and vice versa (Skoog, 2013). This would not have been possible using another design.

Finally, this is, to our knowledge, the first study conducted to examine Sri Lankan girls’ experience of puberty with a focus on social relationships. Previous studies have only examined girls’ pubertal knowledge (Chrisler & Zitter, 1998; Golchin et al., 2012), the traditions and customs surrounding menarche (Gary et al., 2001; Hemachandra & Wanderson, 2009; Khanna et al., 2005; Kim, 2010; Paige & Paige, 1981), and health practices during menarche (Ali, Ali, Waheed & Memon, 2006; Khanna et al., 2005). Thus, the present study extends the understanding of how girls’ experience might differ across countries and cultures, and what implications menarche may have for their social relationships.

Future research

There are several directions in which future research should proceed. The present study demonstrated variations in participants’ experiences of seclusion and life after menarche. Many questions remain: Why do some girls’ experience seclusion as positive and others as negative? In what ways do these groups differ? We also found important changes in
girls’ social relationships between time points. We cannot, however, apply these changes to the significance of menarche. Research should investigate this further. In Asian countries, it is common for young people not only to live with their parents and siblings, but also together with grandparents and other relatives (Arnett, 2012). Future research should examine differences within the whole family, and the dyads within it, in order to fully understand the effects of puberty and menarche on relationship quality. As noted earlier, the developmental readiness hypothesis states that individuals are at greatest risk of developing psychological problems when they are not emotionally or cognitively ready for the major changes of puberty (Marceau et al., 2011). The lives of Sri Lankan girls’ are altered overnight and they have limited time to adapt to the new and unfamiliar demands. Future research should therefore examine what implications menarche has for girls’ psychological well-being and identify factors and vulnerabilities that make some girls more predisposed to react to these changes with difficulties. Future studies should also consider using pre-menarcheal participants to allow for comparisons between girls awaiting menarche and those who have already experienced it. It would also be preferable to include girls with different socioeconomic status.

Implications

As evident in the present study, reaching menarche can be experienced as daunting. This pinpoints the importance of providing adolescents’ with an accurate understanding and a healthy outlook on menstruation before the onset of menarche. This would likely prevent some negative emotions associated with menarche while promoting higher levels of well-being. This also applies to bodily changes and sexual maturation associated with puberty. Girls are not allowed to go to school during seclusion. Their educational performance can therefore get adversely affected. It is paramount that girls have the same educational opportunities as their male peers. It must therefore be ensured that the event of menarche do
not have negative consequences for girls’ education. The traditions associated with menarche should be practiced in ways that ensures girls’ well-being. It is important to give the girls opportunities to express their own views on puberty. According to the UN convention on the rights of the child, also ratified by Sri Lanka, the child has the right to be heard in all matters affecting him or her (UNICEF, 1989).

**Conclusions**

The present study suggests that the cultural context matter for how adolescents experience puberty and the associated issues. It also indicates that relationship quality with parents and peers might change during puberty. Thus, this study advances our understanding of the significance of puberty for Sri Lankan girls. The present study also gives guidance for further research and pinpoints the importance of pursuing both domestic and international research in more unexplored parts of the world.
Acknowledgement

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References


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doi: 10.1016/0272-7358(94)90002-7


Appendix A

Interview guide

Information regarding the study

- Presentation of the interviewer, student from a university in Sweden
- Me and my classmate are writing an essay about girls experience of puberty
- It is important that we understand each other and, therefore, an interpreter is going to be present during the whole interview

Informed consent and confidentiality

- The essay will be public but the persons in the study will not be identified
- Active consent: we are happy if you are willing to talk with us but if you do not want to its OK.
- Frames of the interview;
  - I have some questions about puberty and we are going to talk about that for a little while. I will ask you about different kind of aspects of puberty like your first period, bodily changes and other things that are related to puberty. And I would especially like to know what feelings and thoughts you had when you were going through puberty.
  - The interview will go on for about one and a half hour
  - If there is any question during the interview that you do not want to answer, it's okay. Just let me know and I will skip over it.
  - If you don’t want to continue you have the right to end the interview whenever you want.
  - Just ask me if there are something you don´t understand or if you want me to clarify what I mean.
  - Do you have any questions before we start?
Questions of background

- Age
- Religion
- Tamil/Sinhalese
- Family
- Education

Question 1
- Can you tell us how it was for you going through puberty?

First period

Experience
- Can you tell us how it was for you getting your first period?
- What feelings did you have in that situation?
- What thoughts did you have?
- What was your reaction to this?

Possible changes in life
- Did something in your life change after you got your first period or did it stay the same as before?
- Can you tell me about these changes?
- What did these changes mean to you?

Knowledge
- What did you know about menstruation before your first period?
- Did someone tell you what it was when it happened?
- Did you talk with someone about it afterwards?
- Did you learn more about it afterwards? How?

Pubertal timing
- Did you know if you were early, on time or late in comparison with your friends?
- Did it matter in some way? In what way did it matter?

Today
- Would you have liked something to be different when you got your first period?
- If you look back at this event today, what are your thoughts about it?
- What do you feel when you look back at this event today?
Bodily changes

Experience
- Did you notice anything different with your body before you got your first period? After?
- When did you starting noticing these bodily changes?
- Can you tell me about how your body changes?
- What were your thoughts about that?
- What did you feel?
- How was your reaction to these bodily changes?

Possible changes in life
- Did something in your life change after your body started to change?
- Can you tell me about these changes?
- What did these bodily changes mean for you?

Knowledge
- Did you understand what happened when your body started to change?
- Did you talk to someone about it?
- Did someone explain it for you?

Pubertal timing
- Did you and your friends talk about what happened to your bodies?
- Did your own body change before, at the same time or after your friend’s body’s changes?
- Did that matter to you in any way? Why is that?

Today
- Would you have liked something to be different regarding your bodily changes?
- If you look back at what happened when your body changed, what are your thoughts about it?
- What do you feel when you look back at your development today?

Other changes
- Was there something else that happened before or after your first period that you would like to share with me?
Ending

- Do you have any questions for me?
- Turn off the recorder
- How was it for you talking about puberty with me?
- Thank you for participating!
- The interviewer’s contact details

Follow-up questions

- Can you tell me more about …
- How did you feel about …
- What thoughts did you have in that situation?
- What happened then?
- What did you think about …
- Why is that?
Some questions for you to answer!

Thank you for answering some questions about

- You and your family
- When you attended age (your first menses/menstruation)
- Your relationships with others

<table>
<thead>
<tr>
<th>About your participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is a study being conducted by two university students, Lina Axelsson and Jenny Linjamaa, from Örebro University, Sweden. Please read the information below and if you have any questions please ask us.</td>
</tr>
<tr>
<td>Your participation in the study is voluntary. You may choose not to participate. If you do choose to participate but change your mind you can hand in the questionnaire blank, without any consequences.</td>
</tr>
<tr>
<td>Your answers will be anonymous which means that no one will know what you have answered. We do not collect any identifying information such as your name or address.</td>
</tr>
<tr>
<td>The final rapport will be used for scholarly purposes only and the result from the study will be public for everyone to read (but not the individual answers).</td>
</tr>
<tr>
<td>It will take about 40 minutes to complete the questionnaire.</td>
</tr>
<tr>
<td>You can contact the students doing this study at: <a href="mailto:lina_a_3@hotmail.com">lina_a_3@hotmail.com</a> or <a href="mailto:jenny.linjamaa@gmail.com">jenny.linjamaa@gmail.com</a></td>
</tr>
<tr>
<td>Tear off this page if you want to save this information.</td>
</tr>
</tbody>
</table>
This is how you answer the questionnaire!

- Please read the question thoroughly before answering. There is no right or wrong answer, just be as honest as you can.

- If there is something important you would like us to know, please write and tell us on the back of the questionnaire.

- Before you hand in the questionnaire, go through the questions and make sure you didn’t forget to answer any question.

- When you have finished the questionnaire, please return it to the person who gave it to you.

This is one example of how a question can look like and how you should answer it
(Circle the answer that suits you best)

My hair color is
a. Brown
b. Black
c. Red
d. Blond

(On some of these questions you can circle several answers; if that is the case it will be specified in the question)

This is another example
(Place an X in the answer box that suits you best)

<table>
<thead>
<tr>
<th></th>
<th>Don’t agree at all</th>
<th>Don’t agree particularly</th>
<th>Agree pretty well</th>
<th>Agree completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like stringhoppers</td>
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</tbody>
</table>
Part I: Some questions about you and your family

Please circle the answer that suits you best or write your answer on the line

1. I am ____________ years old

2. I am in grade ____________

3. I speak
   a. Tamil
   b. Sinhalese
   c. Both

4. I consider myself to be
   a. Hindu
   b. Buddhist
   c. Christian
   d. Muslim
   e. Other ______________________

5. I live in a
   a. Cement house with asbestos/tiles roof
   b. Cement house with roofing sheets
   c. Wooden house with roofing sheets
   d. Mud house

6. I live together with
   a. My mother and my father
   b. My mother
   c. My father
   d. My grandmother or/and grandfather
   e. Other relatives
   f. Other ______________________

7. Circle everything that is correct below, you can circle more than one answer.
   a. I have one or more older sister/s
   b. I have one or more older brother/s
   c. I have one or more younger sister/s
   d. I have one or more younger brother/s
   e. I don’t have any brothers or sisters

Part II: Some questions about when you attended age

Please circle the answer that suits you best or write your answer on the line

8. Have you attended age (had your first menses/menstruation)?
   a. Yes
   b. No (if you put a circle around this answer please return the questionnaire to the person who gave it to you)

If it was some time ago since you attended age please take a moment to think back at this event before answering the questions.

9. I attended age when I was _______ years and _______ months old
10. When I attended age I had to stay inside a room in my family's house for
   a. 1-5 days
   b. 6-10 days
   c. 11-15 days
   d. 16-20 days
   e. 21-25 days
   f. 26-30 days
   g. 31 days or more
   h. I didn't have to stay inside a room (if you put a circle around this answer move on to question number 23)

11. The following person or persons could come inside the room that I stayed in when I attended age (circle everything that is correct below, you can circle more than one answer)
   a. Mother
   b. Father
   c. Brother/s
   d. Sister/s
   e. Other female relatives
   f. Other male relatives
   g. Female friends
   h. Male friends
   i. Everybody
   j. No one

12. When I was inside the room I could meet men
   a. Yes
   b. No

13. When I wanted to leave the room … (circle everything that is correct below, you can circle more than one answer)
   a. … I was escorted by another woman
   b. … I was covered
   c. … I was never allowed to leave the room
   d. … I was allowed to move inside the house as I liked
   e. … I could only move inside the house by myself when no men were there
   f. … Other _________________________

14. I could go to school when I was inside the room
   a. Yes
   b. No

Here are a number of statements for you to consider. Please place an X in the answer box that suits you best. There is no right or wrong answer.
(If you are unsure on how to answer the questions go back to the examples in the beginning of the questionnaire or raise your hand)

<table>
<thead>
<tr>
<th>When I stayed inside the room ...</th>
<th>Don’t agree at all</th>
<th>Don’t agree particularly</th>
<th>Agree pretty well</th>
<th>Agree completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. … it was like a prison</td>
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<tr>
<td>16. … I felt lonely</td>
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<tr>
<td>17. … I felt happy</td>
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<tr>
<td>When I stayed inside the room …</td>
<td>Don’t agree at all</td>
<td>Don’t agree particularly</td>
<td>Agree pretty well</td>
<td>Agree completely</td>
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<td>18. ... I felt scared</td>
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<tr>
<td>19. ... I felt embarrassed</td>
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<tr>
<td>20. ... I felt I was special (in a good way)</td>
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<tr>
<td>21. ... I felt it was meaningful</td>
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<tr>
<td>22. ... I felt sad</td>
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</tbody>
</table>

**Please circle the answer that suits you best or write your answer on the line**

23. After being in the room my parents held a party for me
   a. Yes
   b. No (if you put a circle around the answer “no” please move on to question number 30)

24. The party was held to celebrate that I had attended age
   a. Yes
   b. No

25. The following person or persons were invited to the party (circle **everything** that is correct below, you can circle **more than one** answer)
   a. Family
   b. Relatives
   c. Friends
   d. Neighbours
   e. Teachers
   f. Other__________________________

26. At the party it was the first time, since I attended age, that I met (circle **everything** that is correct below, you can circle **more than one** answer)
   a. Mother
   b. Father
   c. Brother/s
   d. Sister/s
   e. Other male relatives
   f. Other female relatives
   g. Friends

**Here are a number of statements for you to consider. Please place an X in the answer box that suits you best. There is no right or wrong answer.**

(If you are unsure on how to answer the questions go back to the examples in the beginning of the questionnaire or raise your hand)

<table>
<thead>
<tr>
<th>Don’t agree at all</th>
<th>Don’t agree particularly</th>
<th>Agree pretty well</th>
<th>Agree completely</th>
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</thead>
<tbody>
<tr>
<td>27. I wanted to have the party</td>
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<tr>
<td></td>
<td>Don’t agree at all</td>
<td>Don’t agree particularly</td>
<td>Agree pretty well</td>
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<tr>
<td>28. I wanted it to be a secret that I had attended age</td>
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<tr>
<td>29. I wanted everyone to know that I had attended age</td>
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</table>

**Please circle the answer that suits you best or write your answer on the line**

30. I had a special bath or several special baths when I attended age
   a. Yes
   b. No (if you put a circle around the answer “no” move on to question number 34)

31. The following person or persons bathed me (circle everything that is correct below, you can circle more than one answer.)
   a. Mother
   b. Father
   c. Uncle/s
   d. Aunt/s
   e. Sister/s
   f. Brother/s
   g. Friend/s
   h. Neighbour/s
   i. Grandmother/s
   j. Grandfather/s
   k. Other _________________________
   l. I was alone

32. When I attended age I was considered unclean or dirty
   a. Yes
   b. No

33. When I had the bath I became beautiful
   a. Yes
   b. No

---

**Here are a number of statements for you to consider. Please place an X in the answer box that suits you best. There is no right or wrong answer.**

(If you are unsure on how to answer the questions go back to the examples in the beginning of the questionnaire or raise your hand)

<table>
<thead>
<tr>
<th></th>
<th>Don’t agree at all</th>
<th>Don’t agree particularly</th>
<th>Agree pretty well</th>
<th>Agree completely</th>
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<tr>
<td><strong>AFTER I attended age …</strong></td>
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<td>34. … I was told to be careful</td>
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<tr>
<td>35. … I had to act like an adult (a woman)</td>
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<tr>
<td>36. … I could act like a child</td>
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<tr>
<td>37. … I could spend time with boys</td>
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<tr>
<td>AFTER I attended age …</td>
<td>Don’t agree at all</td>
<td>Don’t agree particularly</td>
<td>Agree pretty well</td>
<td>Agree completely</td>
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<tr>
<td>38. … I had to be silent</td>
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<td>39. … I had to walk straight and look down</td>
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<tr>
<td>40. … I could look at boys and men</td>
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<tr>
<td>41. … I could go to town by myself</td>
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<td>42. … I should know right from wrong</td>
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<tr>
<td>43. … I became more serious</td>
<td></td>
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<tr>
<td>44. … my life changed</td>
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<td>45. … I started to focus more on my studies</td>
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<tr>
<td>46. … I was no longer carefree</td>
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<tr>
<td>47. … I wanted to be a child for a longer time</td>
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<td>48. … I started to behave differently</td>
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<tr>
<td>49. … I became a different person</td>
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</table>

Please move on to the second part!