RESEARCH ARTICLE

Exploring the pubertal challenges of female adolescents with blindness

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Abstract

Objective: To explore the unique pubertal challenges and the experiences faced by female adolescents with blindness.

Method: The qualitative study was conducted from October 2023 to August 2024 at the Department of Psychology, University of Central Punjab, Lahore, Pakistan, and comprised female adolescents with blindness aged 16-19 years. Data was collected using a semi-structured interview protocol. Data was subjected to interpretative phenomenological analysis through which emergent and subordinate themes were generated.

Results: Of the 8 females with age ranging 17-19 years, 7(87.5%) lived in a nuclear family system, while 1(12.5%) lived in a joint family system. Superordinate themes included pubertal knowledge and body transformation, spontaneous metamorphosis, challenges in menstrual management, puberty-related health concerns, self-reliance and independence, and spiritual journey and navigating challenges.

Conclusion: A need was noted for tailored support systems and accessible resources to better assist female adolescents with blindness during puberty in Pakistan.

Key Words: Pubertal challenges, Blindness, Lived experiences.

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Introduction

According to the World Health Organisation[1], approximately 285 million people worldwide are visually impaired, including 39 million who are blind and 246 million who have low vision. When uncorrected refractive errors and other forms of vision loss are included, the number exceeds 1 billion globally.[2] It is estimated that around 1.4 million blind children aged <16 live in developing countries, with a further 17.5 million at the risk of low vision. Visual impairment disproportionately affects women, and its consequences often include social marginalisation and reduced quality of life[2,3]

Blindness is defined by the International Classification of Diseases (ICD-10) as a visual acuity <3/60 and/or a visual field restricted to 10 degrees or less. The WHO further describes blindness as the partial or complete loss of visual perception that significantly limits an individual's ability to perform essential daily activities over an extended period.[1] Adolescence is a critical developmental period characterised by rapid physical, psychological and social changes. Puberty, a central feature of this stage, involves hormonal shifts that drive sexual maturation, growth spurts and the development of secondary sex characteristics.[4] Higher rates of blindness among women are attributed to a combination of biological, social and economic factors. Hormonal differences increase susceptibility to conditions, such as cataracts, glaucoma and age-related muscular degeneration, while social and cultural barriers — particularly in low-income regions — limit women's access to eye-care services and healthcare decision-making.[5,6] In girls, puberty typically begins between ages 8.5 and 13 years, and progresses through Tanner stages that include thelarche, pubarche and menarche. Hormonal changes involving oestrogen, follicle-stimulating hormone (FSH) and luteinizing hormone (LH) regulate reproductive development, but may also contribute to menstrual disorders, such as dysmenorrhoea, amenorrhoea and menorrhagia. Conditions like polycystic ovary syndrome (PCOS) are also common during adolescence, and can affect physical health and self-esteem. Heavy menstrual bleeding combined with inadequate dietary iron intake can increase the risk of iron-deficiency anaemia during this period.[7]

Adolescents with visual impairment face additional challenges across physical, psychological, social and educational domains.[8] A study indicated that blind adolescents were more likely to experience loneliness, reduced peer relationships, and social isolation compared to sighted peers, and they are also at increased risk of anxiety, depression and low self-esteem.[9] These difficulties are often intensified during adolescence when emotional sensitivity and social awareness are

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heightened. Blind adolescents may struggle with identity formation, independence and stigma, increasing vulnerability to psychological distress and reduced wellbeing.[10,11]

The current study was planned to explore the unique pubertal challenges and the experiences faced by female adolescents with blindness.

Subjects and Methods

The qualitative study was conducted from October 2023 to August 2024 at the Department of Psychology, University of Central Punjab, Lahore, Pakistan. A phenomenological approach was used to explore the lived experiences of blind female adolescents, and comprised female adolescents with blindness aged 16-19 years.. Data saturation was reached by the sixth interview in the current study, but two more interviews were conducted to confirm that no new insights were being generated.

The sample was raised using non-probability, purposive sampling technique. Those included were female adolescents aged 16-19 years, who were blind since birth, were residing in Lahore, and were enrolled in formal education at Aziz Jahan Begum Trust and the Government Sunrise Institute for the Blind, Lahore. Permission was obtained from the respective principals. Those excluded were individuals with additional sensory impairments, intellectual disabilities, or neurodevelopmental and neurocognitive disorders.

After obtaining approval from the institutional ethics review committee and informed consent from the participants, data was collected using a semi-structured interview guide that was developed in Urdu, informed by a literature review as theoretical model of Integrated Change Model by de Vries et al.[12] Interview guide was reviewed by two experts/professionals. The data-collection tool was pilot-tested with two participants, leading to minor adjustments in the interview process. The data was audio-recorded and transcribed verbatim. It was subjected to IPA, which emphasises understanding participants' lived experiences through both phenomenological insight and researcher interpretation. Guided by the double hermeneutic principle.[13] IPA involves interpreting how participants make sense of their experiences while acknowledging the influence of the researcher's own perspective. Reflexivity was maintained throughout, enhancing analytical depth and credibility.[14]

The analysis followed a structured process. Step 1 involved transcription and repeated reading for familiarity. In Step 2, initial coding was completed and reviewed by supervisors and qualitative experts. Step 3 focused on identifying and refining emerging themes, which were grouped into subordinate and superordinate categories. Step 4 involved interpreting themes within a theoretical framework, adhering to IPA's interpretative stance. The thematic structure was then reviewed, and consensus was reached following expert feedback.[15] Peer review, rich descriptions, and clarification of researcher bias were used to ensure the credibility and trustworthiness of the findings.[16] Coding was done by the primary researcher, with any disagreement being reviewed and resolved through discussion with the supervisor. To enhance the credibility of the findings, member checking was conducted during the interview, allowing the participants to confirm or clarify that the results accurately reflected their experiences. The final sample was consistent with interpretative phenomenological analysis (IPA) guidelines recommending small, homogeneous samples of 6-10 participants for in-depth analysis.[17]

Results

Of the 8 females with age ranging 17-19 years, 7(87.5%) lived in a nuclear family system, while 1(12.5%) lived in a joint family system (Table 1).

Table-1: Demographic characteristics of the participants.

Participant	Gender	Age	Year in institution	Family system
1	Female	17	6	Nuclear
2	Female	16	6	Nuclear
3	Female	18	2	Nuclear
4	Female	16	7	Joint
5	Female	16	1	Nuclear
6	Female	18	3	Nuclear
7	Female	19	3	Nuclear
8	Female	19	1	Nuclear

Superordinate themes included pubertal knowledge and body transformation, spontaneous metamorphosis, challenges in menstrual management, puberty-related health concerns, self-reliance and independence, and spiritual journey and navigating challenges (Table 2).

"Knowledge related to puberty" highlighted the lack of pre-pubertal education and limited understanding of menarche among the subjects. The participants emphasised the need for education, including physical descriptions, practical menstrual hygiene training, and awareness of emotional and social changes. For example, Participant 3 expressed confusion about the significance of puberty and menstruation.

Table-2: Superordinate and subordinate themes.

Superordinate themes	Subordinate themes	Quotes	Translation of quotes
Knowledge related puberty	• Pre-pubertal education • Importance of menarche & Lack of education • Importance of Menstrual Education • Maturation onset	11, 12 سال کی لڑکیوں کے ساتھ پرابلم ہوتا ہے وہی ماہانہ مابواری اور پیریڈز وغیرہ نہیں بس کے بارے میں خیال آتے ہیں کہ یہ ایک نیا مسئلہ شروع ہو گیا۔	At the ages of 11–12, girls experience issues related to the onset of menstruation and monthly periods. It is often perceived as though a new problem has begun.
Pubertal transformation & Body consciousness	• Body Evolution • Physical development i.e. Body transformation, Growth spurt, pubic hair development & physical development • Appearance change, Bodily fluctuations • Somatosensory awareness • Physical Growth & Self-Perception • Body awareness and need for assistance for self-hygiene • Gradual comprehension of girl's reproductive development	بہت سی مشکلات ہوتی ہیں جیسے نابینا لڑکیوں کو آپ کو خود سے کر کے بتانا پڑتا ہے۔ اپنے جسم کو سمجھنے میں مشکلاتی ہے حواس کا استعمال کرتے ہونے، ہم نابینا اپنے جسم کے پاسٹس کی شناخت کی	There are many challenges; for example, with visually impaired girls, you have to demonstrate things by doing them yourself. They face difficulties in understanding their own bodies. By using their senses, we help visually impaired individuals identify and recognize different parts of their bodies.
Spontaneous Metamorphosis	• Transitioning from Confusion to Clarity • Acceptance of divine will • Imperceptible transition to adulthood • Natural Progression (Puberty: a part of life)	یہ سوچ لیا تھا کہ (مابواری) مینسز یہ ایک زندگی کا حصہ ہے۔	It was understood that menstruation (menses) is a natural part of life.
Difficulties in Menstrual management	• Menstrual/ Sanitary Challenges • Menstrual hurdles for blind adolescents • Lack of knowledge regarding puberty • Clueless about puberty • Misinformation & Stigma • Straining to complete daily life responsibilities • Avoid Premature discussion (Discretion)	مشکلات تو بہت ساری ہوتی ہیں، اگر وہ نابینا ہے تو اس کو پڑھائی کیسے کرنی ہے پڑھائی کا مسئلہ ہوتا ہے، سفر کا مسئلہ ہوتا ہے، اس کے بعد ماہانہ مابواری کے مسائل ہوتے ہیں مینج کرنے میں مسئلہ ہوتا ہے" شروع میں مشکل ہوتی تھی کہ کیری کیسے کرنا ہے(پیریڈز پیڈ) اور چیزوں کو فکس کیسے کرنا ہے اور سیٹ کیسے کرنا ہے۔	There are many challenges. If she is visually impaired, there are difficulties related to education—how to teach her—there are issues with mobility and travel, and after that, there are monthly menstruation-related issues, which are difficult to manage. In the beginning, it was difficult to understand how to carry menstrual pads, how to secure them properly, and how to position them correctly.
Social Support regarding Puberty	• Education, awareness and Support regarding puberty • Social Support services regarding periods • Assistance from educational institute regarding puberty • Menstrual mentorship from a sister & Mother during puberty • Aunt's & hostel warden's guidance during menarche	جب مجھے پہلی بار مینسز ہونے تو میں نے ممانی کو بتایا کہ مجھے اس طرح مسئلہ ہوا ہے تو انہوں نے مجھے اس کے بارے میں گائیڈ کیا۔	When I got my periods for the first time, I told my mother that I was experiencing this issue, and she guided me about it.
Menstruation: A Taboo	• Breaking the Silence around Menstruation • Shatter the taboo on menstruation • Menstruation being treated as Taboo, stigma & shame	والدین تو میرے خیال سے نہیں کرتے ہوں گے اور بہن بھائی آپس میں کرتے ہوں گے اس بارے میں بات۔	In my opinion, parents usually do not talk about this, and it is mostly siblings who discuss such matters among themselves.
Emotional turmoil	• Menstrual emotional sensitivity • Feeling of sadness & lethargy • Mood swings during menstrual discharge • Emotional turbulence, menstrual discomfort &	ویسے تو میں مثبت سوچنے والی لڑکی ہوں لیکن مینسز کے دوران پتہ نہیں کیوں منفی خیالات بہت زیادہ آتے ہیں – "میں تھوڑی سی چڑچڑی ہو جاتی ہوں، مجھے غصہ آنے لگ جاتا ہے، کسی سے بات نہیں کرنے کا دل نہیں چاہتا , غصہ بھی کافی ہوتا تھا اور کافی رونا بھی آتا ہے کبھی کبھی۔ کچھ نہ کرو، دل میں	Generally, I am a positive-minded girl, but during menstruation, I don't know why negative thoughts increase a lot. "I become a little irritable; I start feeling angry and don't feel like talking to anyone. The anger can be quite intense, and sometimes I feel like crying a lot. I don't feel like doing anything—there is sadness

	vulnerability • Frequent fights during Menstruation • Complexities of Emotional Regulation • Cognitive Fluctuations during puberty • Wish for less visual dependence	اداسی، پریشانی ہوتی ہے۔کہ کوئی کام نہ کیا جائے اور اداسی بھی ہوتی ہے درد بھی ہوتی ہے پیریڈز کے پہلے دو دن. کوئی بھی بات ہو رہی ہوتی تھی تو میں بہت جلدی جذباتی ہو جاتی تھی ".	and anxiety in my heart. I don't want to do any work, I feel low, and there is also pain during the first two days of my periods. Whatever the situation, I would become emotional very quickly."
Puberty-related health concerns	• Bodily complaints during menstruation • Hormonal fluctuations	جسم میں درد ہوتا ہے تھوڑاسا لڑکی تھوڑا سا درد محسوس کرتی ہے جسم میں درد تھکاوٹ ہو تی ہے۔ انسان تھک جاتا ہے اور آرام محسوس نہیں کرتا.	There is body pain; the girl feels some discomfort and aches in her body, along with fatigue. A person becomes tired and does not feel rested.
Self-Reliance & Independence	• Gratitude & Resilience • The ability to cope with and adapt to the challenges during menstruation • Psychological Maturity & Impartiality • Negotiating self-care & balancing interpersonal relationships • Divergence • Empowerment through experience	بس لوگوں کی باتوں کی وجہ سے کہ یہ کیسے خود کو مینج کرے گی تو مجھے پتہ تھا کہ میری کوئی ہیلپ کرے گا نہ کوئی مجھے گائیڈ کرے گا، کہ میں نے خود کرنا ہے تو میں نے کوشش کی۔	"Just because of what people said about how she would manage herself, I knew that no one would help me or guide me, so I had to do it myself, and I made the effort."
Social Challenges	• Changing social dynamics • Initial fear & Importance of Communication • Set boundaries toward opposite sex • Challenges of Initiating conversation • Social interactions & Reactions (Sensitivity to external comments) • Social Exclusion • Post-puberty limits social interaction • Challenges in Forming Friendships	ہم لوگ اپنے جیسوں کے ساتھ ہی دوستی کرتے ہیں، سب سے دوستی نہیں کر پاتے۔ کمی بہت آتی ہے ملنے جلنے میں ، پیریڈز کے دوران ، اس دوران تو میں کسی کال بھی پک نہیں کر سکتی	"We tend to make friends with people like ourselves; we cannot be friends with everyone." "There is a significant lack of social interaction during periods; during this time, I am not even able to answer any calls."
Spiritual journey & Navigating challenges	• Religious Perspectives on Physical desire • Menstrual knowledge gap & Abstinence from Quran recitation during menses • Navigating adolescent desires	کچھ ریکارڈ ناولز میں نے سنے جن کے مطابق جسمانی خواہشات پر قابو پانا ہی ایک جہاد ہے۔ اس سے پہلے اس کے بارے میں کچھ نہیں جانتی تھی۔ جو میرے ساتھ قرآن پڑھنے جاتی تھی تو وہ جب چھٹی کر لیتی تو میں ان سے پوچھتی تھی کہ آپ کیوں نہیں جا رہے تو وہ مجھے کہتی تھی کہ میں نے نہیں پڑھنا تو میں پوچھتی تھی کہ کیوں نہیں پڑھنا کہ آپ نے چھوڑ دیا ہے تو اس بارے میں میں نہیں جانتی تھی اس سے پہلے۔	"I have heard in some recordings and novels that controlling physical desires is considered a form of struggle (jihad)." "Before this, I didn't know anything about it. The one who used to go with me to read the Quran, when she took a break, I would ask her why she wasn't going, and she would say that she didn't want to read. I would then ask why she didn't want to read, since she had stopped, but I didn't know anything about this before."

"Pubertal transformation" and "body consciousness" reflected the challenges female adolescents with blindness faced in understanding bodily changes without visual cues. Participant 1 noted difficulty in recognising physical changes, while Participant 2 described relying on other senses and personal experiences.

"Spontaneous metamorphosis" captured the perception of puberty as a natural, divinely ordained process. Participant 2 accepted menstruation as a normal part of life, reflecting spiritual understanding and emotional maturity.

"Difficulties of menstrual management" highlighted the unique challenges female adolescents with blindness faced in handling hygiene and mobility during menstruation. Participants 1 and 8 discussed difficulties with sanitary pad use and broader challenges related to education and independence.

"Social support regarding puberty" underscored the importance of guidance from mothers, sisters and peers. Participant 6 shared how her aunt helped her during her first menstrual experience, illustrating the value of familial support.

"Menstruation: a taboo" addressed cultural silence and stigma. Participants 3 and 8 noted that parents often avoided the topic, leaving siblings to fill the information gap.

"Emotional turmoil" explored the psychological impact of puberty. Participant 5 described irritability, sadness and physical pain during menstruation, which disrupted her daily life.

"Puberty-related health concerns" included cramps, fatigue and body aches. Participants 2 and 5 reported significant discomfort affecting their wellbeing and routine.

"Self-reliance and independence" highlighted how female adolescents with blindness gradually learnt to manage menstruation independently. Participant 6 demonstrated determination despite external doubts, while Participant 5 expressed gratitude for divine support in overcoming challenges.

"Social challenges" reflected limited social interactions during menstruation. Participant 8 noted reliance on familiar social circles and the difficulty of engaging in routine activities during her period.

Finally, "spiritual journey and navigating challenges" explored the intersection of faith and puberty. Participant 3 viewed controlling physical desires as spiritual discipline, while Participant 6 recognised religious practices, such as pausing Quran recitation during menstruation.

Together, these themes illustrated the complex interplay of physical, emotional, social, and spiritual challenges faced by blind adolescent girls during puberty (Table 2).

Discussion

The findings of the current study reveal that blind female adolescents experience puberty as a multidimensional challenge, where biological, emotional, social and spiritual factors intersect. The lack of structured pubertal education underscores systemic neglect, leaving girls dependent on familial guidance, which may be inconsistent or incomplete.[18] This gap not only affects menstrual management, but also contributes to low self-esteem and confusion, highlighting the urgent need for disability-inclusive reproductive health programmes.

Emotional turmoil during puberty, driven by hormonal fluctuations, demonstrates that blind adolescents may be particularly vulnerable to anxiety, depression and mood disturbances.[19] Coupled with insufficient health knowledge, menstrual pain and related body aches exacerbate functional limitations, indicating a critical deficit in accessible health education and support.[20,21]

Despite these challenges, the themes of self-reliance and independence suggest the development of resilience and psychological maturity, reflecting adaptive coping rather than the adequacy of existing support systems. Social withdrawal and isolation highlight the compounded effect of stigma and limited peer interaction, impeding identity formation and emotional development. Finally, the spiritual dimension illustrates that religious practices provide structure and moral guidance, but may also amplify uncertainty due to lack of accessible information about menstruation and bodily changes.[22]

Overall, the findings indicate that blind adolescent girls navigate puberty at the intersection of biological vulnerability, educational gaps, social marginalisation, and cultural expectations. The findings emphasise the necessity of culturally sensitive, accessible interventions that address both the physical and psychosocial dimensions of puberty for visually impaired adolescents.

The current study has limitations of a small sample size limited to one city, which may have affected the generalizability of the findings. Also, sensitivity of the topic may have limited the depth of information gathered.

Despite the limitations, the current study has its strengths. It provides a critical understanding of the distinct challenges associated with a particular community, taking into account both the psychological and physical aspects of their experiences. By concentrating on a population that is marginalised, the study offers insightful information about the puberty-disability intersection, which is frequently cast aside in larger studies. The application of qualitative research techniques, like in-depth interviews, enables a nuanced understanding of individual experiences and the influence of blindness on puberty.

The study emphasises the need for targetted research and interventions to support blind adolescents during puberty. Future efforts should focus on developing accessible educational resources on menstruation and puberty, exploring the role of social support networks, and providing training to caregivers, educators and healthcare professionals. Policymakers should integrate disability-inclusive curricula and specialised health services into the existing programmes. Practical strategies may include multisensory pubertal education, workshops on menstrual management and emotional wellbeing, peer-support networks, and technology, such as audio

apps and braille materials, to reduce stigma, foster autonomy and build resilience within culturally sensitive frameworks.

Conclusion

Female adolescents with blindness experienced a wide range of puberty-related challenges, many of which were made worse by their visual impairments. The difficulties ranged from a greater reliance on caregivers for menstrual management to restricted access to relevant educational materials on physiological changes and its impact on psychological wellbeing. They experienced heightened emotional sensitivity during menstrual bleeding. Social stigmas and false beliefs about blindness exacerbated their difficulties and heightened the feelings of anxiety and loneliness.

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