

Editorial Commentary

## The emotional and psychological aspects of early puberty: How much do we really know?

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Puberty is a crucial period in an individual's life, with rapid external changes affecting appearance as well as internal hormonal changes, with multifaceted consequences. Precocious puberty (PP) in girls presents a unique challenge not only due to its impact on physical growth but also because of the psychological consequences that it can have on young girls and their mothers. The current treatment guidelines on PP emphasize treatment to halt and delay puberty until an appropriate age, with two main goals – to allow the child to grow to a normal adult height and to alleviate psychosocial stress. While the effects of PP on skeletal maturation, with initial growth acceleration and subsequent short stature, have been extensively studied, the second aspect, i.e., studies of the psychological burden associated with PP, and its alleviation by the use of gonadotropin-releasing hormone analog therapy, remain a gray area. Most of the available literature on the psychological, social, and behavior problems in girls with “early puberty” defined early puberty based on patient recall of their timing of puberty rather than by assessing patients from a pediatric endocrine clinic with a diagnosis of PP. Despite this limitation, however, these are valuable studies, as they derive from large population data, often with longitudinally ongoing evaluations. Vijayakumar *et al.* studied 10254 adolescents from the Adolescent Brain Cognitive Development study.<sup>[1]</sup> Emotional and behavioral problems such as depression, withdrawal, and rule-breaking were associated with early pubertal timing. The authors also documented the association of unfavorable family, peer, and school environments coexisting with early pubertal timing with poorer outcomes. In contrast to many studies reporting a propensity for problem behaviors to occur more commonly in girls with early puberty than in boys, an Indian study from the northern city of Amritsar did not find an association with gender.<sup>[2]</sup> Studying 770 adolescents in 6–10<sup>th</sup> grade of four schools of the city, with roughly equal numbers of boys and girls, the author found a significant association between timing of puberty (in girls as well as boys) and anxiety, depression, withdrawn behavior, somatic complaints, aggression, and rule-breaking. Of note, the tool used was the “Youth Self Report,” thus avoiding the possible bias in studies using the “Child Behaviour Check List,” where there is a risk of parents projecting their own anxieties about early puberty while reporting on their child.

Moving to PP (in contrast to just early normal puberty), young girls with PP may struggle with heightened self-consciousness and social challenges due to their advanced physical development relative to peers. There may also be concerns such as peer teasing, social isolation, and body image problems. These young girls not being mature enough to deal with their emotions may develop anxiety, depression, or even behavioral problems. These issues are likely to be influenced by the sociocultural milieu of the child and family peculiar to the country they reside in. Although several authors have evaluated psychological issues in patients with clinically

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diagnosed PP as compared to controls, these have commonly been limited by small sample size, and the results have been largely conflicting.<sup>[3-7]</sup>

To the best of our knowledge, there are no formal studies published on the psychological effects of PP among Indian children and their parents. Anecdotally, parents are often worried about the possibility of abuse in cases with early breast development, as also the ability of the young individual to cope with early onset of menses. The traditional belief that vertical growth ceases with onset of menstruation often leads to consultation with the pediatric endocrinology team about final adult height. However, if offered GnRH analog therapy based on documentation of advanced bone age, our parents often express concern about the resumption of puberty if it is halted pharmacologically and sometimes even worry about the effects of puberty interrupting medication on future fertility. It is a shared perception among some of our colleagues that more often an urbanized higher educated family would persist with concerns of compromised height, and a less educated more traditional family would accept our reassurance in cases of early normal puberty, mainly due to a reluctance to tamper with processes of normal puberty.

In the accompanying article in this issue, Algedik *et al.* from Turkey also draw the readers' attention to the above-mentioned lacunae in literature.<sup>[8]</sup> Theirs is a clinic based study on families seeking help for their daughters with precocious or early normal puberty. The formal psychological assessment has been accompanied by formal endocrine work up. They suggest that literature is not sufficient as of now to support puberty blocking agents being successful in addressing any emotional or behavior problems of early puberty and that mental health assessment may be warranted in some instances. However, their small sample size of 14 investigated participants and 7 healthy controls severely limits these conclusions from their own results.

Pediatric endocrinologists should be aware of social and psychological associations and ramifications of early normal puberty as well as pathologically early or PP. Data are not yet clear as to the success of puberty halting therapy in addressing these concerns of our families. Mental health support may be important.

## Conflicts of interest

Dr. Vijayalakshmi Bhatia is on the Editorial Board of the Journal.

## Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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