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PRECOCIOUS PUBERTY AND THE SELF ESTEEM OF
PREADOLESCENT GIRLS

Catherine Kawira¹, Nathan Chiroma², Anne Wambugu³

¹ Department of Psychology, Pan Africa Christian University, Nairobi, Kenya
Email: Catherine.Julius@students.pacuniversity.ac.ke

² Department of Children and Youth, Pan Africa Christian University, Nairobi, Kenya
Email: Nathan.chiroma@pacuniversity.ac.ke

³ Department of Psychology, Pan Africa Christian University, Nairobi, Kenya
Email: Anne.Wambugu@pacuniversity.ac.ke

* Corresponding Author

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Abstract:

This article examines the relationship between precocious puberty and the self-esteem of preadolescent girls in public primary schools in Kiambu County, Kenya. This article introduces the two variables precocious puberty and self-esteem, reviews the literature on the relationship between the physical, biological, cognitive, and cultural changes of precocious puberty as they relate to the self-esteem of adolescent girls, discusses the findings of the study, and makes conclusions and recommendations. The sample population was 410 preadolescent girls and 8 class teachers, who were purposively sampled from 12 randomly, selected public primary schools in Kiambu County. Primary data was collected using three instruments; a questionnaire structured interviews and focus group discussions. The instruments were pilot tested on 36, 8-12 years old girls from 3 public primary schools in the study location who were omitted from the actual study. The qualitative data was analysed using the content analysis method, while the quantitative data was analysed using the Statistical Package for Social Sciences (SPSS) version 26. Analysed data was presented using tables and figures. Statistical data indicated that there was a significant relationship ($\beta=0.354$, $p=0.000$) between precocious puberty and the self-esteem of pre-adolescent girls. This was confirmed by the responses from both interviews and focus group discussions. Given these findings, the researcher study concluded that earlier pubertal maturation as indicated by breast development before age 8 and the onset of menstruation before age 12 can lead to low self-esteem in preadolescent girls. The article recommends that awareness of the incidence of precocious puberty and its relationship with the self-esteem of preadolescent girls be created

among parents, teachers, peers, policymakers, and other stakeholders so that the negative effects from the incidence can be mitigated.

Keywords:

Pubertal Maturation, Preadolescence, Self-Esteem

Introduction

Given the high increase of the incidence of precocious puberty globally, it is imperative that its relationship with the self-esteem of preadolescent girls be established. This will help the caregivers and other stakeholders in child development to find mitigating factors to curb the negative consequences that may emanate from that relationship. This knowledge may also enable the stakeholders to find better ways of taking care of the developing girl child.

Puberty is a complex developmental process that begins in late childhood. It is characterized by physical, biological, psychological, social, cognitive and emotional changes, the development of secondary sexual maturation, and achievement of reproductive capacity. Studies show that on average, pubertal maturation in the majority of girls begins at age eight and lasts for a period of three to five years (Chen & Eugster, 2016; Kaplowitz & Bloch, 2016). However, in the last few years, the onset of puberty seems to occur much earlier than normal in a significant number of girls (Alghs, Saeedi & Titwany, 2014; Brito et al., 2016). Precocious Puberty in girls is defined as a condition where a girl shows signs of secondary sexual maturation such as breast development, pubic and under arm hair, skin changes and increased growth rate, earlier than the expected average age of eight years, or has menstruation before the age of 12 years.

Self-esteem is a component of the self-concept that Rosenberg (1965) defined as the totality of the individual's thoughts and feelings about him or herself. Sowislo and Orth (2013) defined self-esteem as the assessment that people make of themselves, expressing an attitude of either approval or disapproval, which shows the competence that individuals possess to believe in themselves, their capabilities, strengths, weaknesses, abilities, attitudes and values. Self – esteem is a fundamental human need and part of life's process that is indispensable to a normal and healthy self-development. The development of self- esteem starts at birth, and constantly develops under the influence of the different life experiences of the individual (Hill, 2015). Self -esteem is a crucial variable for understanding identity development and individual's functioning and underpins the development of mental and psychological health adjustment (Orth & Robins, 2013). The development of a healthy self-esteem is extremely important for good adjustment in society and is a major key to success in life.

Literature Review

This literature review specifically discusses the physical, biological, cognitive and cultural changes during pubertal maturation as they relate to the self-esteem of the preadolescent girls

Precocious Puberty, Physical Changes and Self-esteem

Self-esteem increases with age and starts out high in childhood, drops drastically as children enter puberty; increases gradually through ought adulthood, and drops radically in old age. The dramatic changes in self- esteem during puberty may be attributable to many variables including weight increases, body image concerns, changes in peer relationships and changed

role perception during puberty (Gatti et al., 2014). According to Ayselozdemir, Utkualp and Ayun Pallos (2016) nearly every part of the body goes through physical changes during puberty, altering a child's morphology significantly. Due to the activation of the hormones controlling pubertal development and the acceleration of the secretal system, adolescents go through a rapid period of growth known as a growth spurt, which accounts for the many changes experienced in puberty. It is estimated that 15-25% of the final adult height is gained during the growth spurt of puberty, and that one third of adult bone mass occurs during and immediately after puberty (Atta et al., 2014). During the peak of the linear growth spurt, females gain roughly 8-9 cm of height per year, and experience about 120% of body fat (Atta et al., 2014).

While these increases in height, weight and body fat are normal during puberty, many girls tend to view them negatively, especially when they occur earlier than the expected time. Studies conducted throughout the United States, Australia and South Korea showed that body dissatisfaction is a wide spread issue among preadolescent girls, and that there is a well-established connection between adolescent girls' body dissatisfaction and their self-esteem (Atta et al., 2014; Choi & Kim, 2016; Jolly & Babu, 2018). According to Gatti et al. (2014) self-esteem is so intrinsically linked to thoughts about one's body that physical appearance has been found to be the greatest predictor of self-esteem in many adolescent girls. These researchers further noted that puberty is a time of both physical and psychological changes, which can influence perceptions of self, and dissatisfaction with one's body, both of which are key elements in the development of self-esteem among children.

Precocious Puberty, Biological Changes and Self-esteem

Puberty is a stage of sexual maturation also known as Tanner staging. This stage is initiated when a hormonal signal from the pituitary glands stimulates the sex glands (ovary and testes) to secrete the sex hormones, oestrogen and testosterone (Ayselozdemir et al., 2016). It is these sex hormones that are responsible for the growth spurts, fertility, increases in sexual drive and the development of primary and secondary sexual characteristics such as; budding of breast, the appearance of pubic hair, and the onset of menstruation for girls and increase in sexual organs and breaking of voice in boys (Al-Jurayyan et al., 2018). The hormonal shifts associated with puberty may result in arousal, excitability or excessive emotionality, which may be complicated by neurological changes that spark increased desire for risk taking and sensation seeking early in adolescence (Mendle, 2014). The hormonally triggered erratic behaviour may have several consequences for the early maturing girls. Marceder-yus et al. (2018) wrote that girls who go through puberty early tend to get more attention from the opposite sex, are less concerned with schoolwork, and are more likely to be pressured into taking drugs or having sex. Early sexual activity at a time that the girls are not emotionally or cognitively mature, may lead to many negative consequences including teenage pregnancy, school drop-out, a lower quality of life and lower levels of self-esteem.

Precocious Puberty, Cognitive Changes and Self-esteem

During puberty, the self-awareness and the self-concept undergo a profound development as the brain develops, enabling children to think more abstractly and form their own values (Manna, 2014; Reena, 2015). Cognitive development enables the children to make abstract generalization about the self. Marceder-yus et al. (2018) observed that the physical, psychological and biological changes during puberty have a strong influence on the way the children perceive and evaluate themselves and on their global self-esteem. This is particularly

true in early puberty when physical appearance tops the list of factors that determine global self-esteem especially for girls. Children with early pubertal development not only have to cope with the difficulties experienced in normal puberty, they also have the disadvantage of being too young and lacking in the cognitive skills to understand, and cope with the challenges of puberty. Clarkson (2013) noted that while early maturing girls may look physically mature, they have the same cognitive maturity as other children that age.

Given their precocious physical appearance, the society may ascribe unwarranted perceptions of maturity unto the girls and expect too much from children who do not have the skills to cope with the societal demands. The way older significant others such as parents, teachers and older males treat the girls may also contribute to how they feel about themselves (Marceder-yus et al., 2018). For example parents may expect the girls to take up more adult responsibilities, teachers may expect them to understand concepts quickly, while older males may expect them to date and marry them, at a time that the girls do not have the cognitive ability to handle these expectations, leading to confusion, distress and low self-esteem.

Precocious Puberty, Cultural Changes and Self-esteem

Socialization in many western cultures encouraged boys to be stronger and masculine, while girls were encouraged to remain slender and beautiful (Agam, Tamir & Golam, 2015). In Africa, many traditional African societies, preferred plump, well rounded women, as these were seen as a sign of wealth, good health, prosperity and fertility (Persadsingh, 2015). In some countries like Mauritania, Jamaica and Nigeria, it was so important for women to be fat that girls were fed in fattening food when they were young, in order to make them fat women later in life (Persadsingh, 2015). Most African men preferred to marry fat women, and men who had thin wives were ashamed of themselves as it meant they could not take care of them. This African belief has since faded away in the face of modernism and westernization. While studies show that African girls are more satisfied with a bigger body than white girls (Agam et al., 2015), the current trend shows an increased pressure on African teenagers to become thinner (Scabo & Morris, 2013). More and more African men and women seem to prefer the thin western body ideal to the traditional fat African body ideal. The increases in body weight that are synonymous with puberty, move the early maturing girls further away from the trendy thin female body ideal. Girls, who find themselves fat at an early age in a culture that glorifies thinness, may become overly preoccupied with their physical appearance and develop a negative body image leading to low self-esteem.

Research Methodology

This study adopted the descriptive case study research design, which investigates a phenomenon within its real-life context. The phenomenon under investigation in this study was precocious puberty and its relationship with the self-esteem of preadolescent girls. This was a case study of 12 public primary schools in Kiambu County. The sample population was 410 preadolescent girls and 8 class teachers selected from 12 public primary schools in Kiambu County. Simple random sampling was used to objectively select 12 public primary schools from each of the 12 constituencies of Kiambu County. At the school level, both purposive and simple random sampling were used to select a total of 36 pre-adolescent girls from each of the 12 schools, who fell within the age range of 8-12 years, bringing the sample size to 432. Out of the 432 girls only 410 completed the study satisfactorily. The study targeted 12 class teachers but only 8 were available to participate in the study.

Pubertal maturation was assessed using the self-rating scale for pubertal development. The scale is an adaptation interview based on Petersen's puberty rating scale, that measures children's pubertal status without pictorial representation or interviews (Petersen, Crockett and Boxer, 1988). The scale showed reasonable validity with coefficients of .71 and .76 when used among youth aged 9-13 and 10- 18 (Shane & Linda, 2005). After using the measure twice annually for over three years, Petersen and others concluded that the scale showed good reliability and validity (Petersen et al., 1988). The self- esteem of the girls was assessed using the Rosenberg's Self-Esteem Scale. The scale, which was developed by Mike Rosenberg in 1965, is the most widely and frequently used measure of global self-esteem, in social science research, psychology and psychiatry (Tinako & Nahathai, 2012). This scale was devised as a unitary scale and American work has consistently found alpha values in excess of 0.85 for the tool. Studies across the globe show that the tool has been used in many parts of the world including ethnic groups in North America, Europe, Asia, Australia, South Africa, Kenya and Middle East (Baranik et al., 2008; Panm et al., 2018; Swenson, 2003), suggesting that it has strong cross cultural validity. The scale has also been translated into different languages including French, German, Italian, Spanish, Japanese, and the American Sign Language and used as a measure of self-esteem with diverse groups with good reliability and consistency (Westway & Maluka, 2005).

The questionnaires were distributed to the girls by the researcher and the assistants for self-administration. The researcher also conducted five focus group discussions each comprising of 10 girls and interviewed 60 girls and 8 class teachers using a set of predetermined questions. Guest, Namey and Makenna (2017) found that more than 90% of all themes were discoverable within three to six focus group discussions, while Adler and Adler (2011) suggested that 50 interviews were sufficient for a Ph.D. dissertation. The researcher used an iPad and field notes to record the sessions. The instruments were pilot tested on a sample of 36 girls who were randomly selected from 3 primary schools in the study location and who were omitted from the actual study. According to Perneger, Courvoisier, Hudelson and Ageron (2018), 30 participants is a reasonable default value for the pre-test of instruments. The quantitative data was analysed using the statistical package for social sciences (SPSS) version 26, while the qualitative data was analysed using the content analyses method. Analysed data was presented using both tables and figures because they are the most straightforward way of presenting data as suggested by Saywell (2016).

Ethical Considerations

The researcher first sought for an approval letter from the University, then applied for a research permit from National Commission for Science, Technology and Innovation (NACOSTI). Permission to collect data from the sampled schools was sought from the County Director of Education Office, Kiambu County, after which the researcher called on the respective school heads to allow for data collection from their schools. Permission to collect data from the girls, who were minors, was sought from the head teachers, parents and the girls themselves. The respondents were assured of confidentiality and were informed of their freedom to withdraw from the study at any time. There were no incentives in this study.

Study Findings

Precocious Puberty

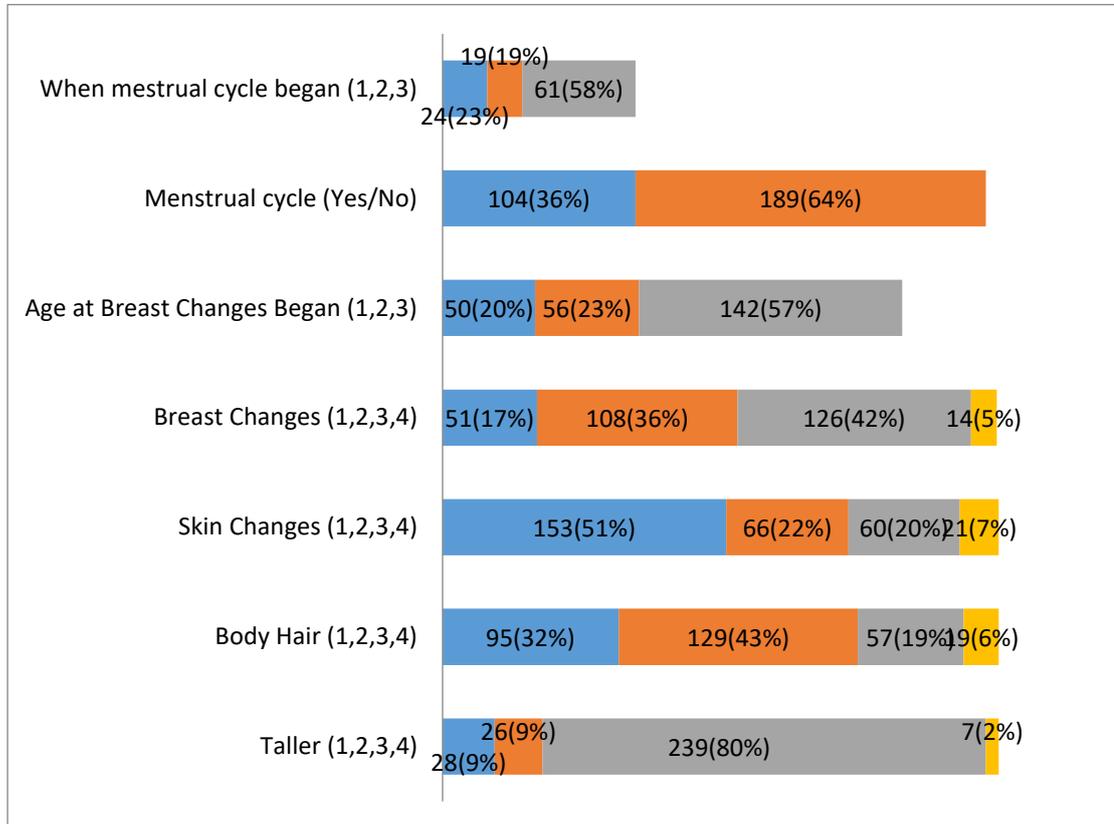


Figure 1: Diagram Showing the Results of the Observable Changes in the Body

The questionnaire results above revealed that 239 girls had increased in height, 205 had pubic hair, 147 had skin changes, 248 had started breast development and 104 had begun menstruation. Further, the studies showed that 50 girls had breast development before age 8 and 43 girls had begun their menstruation before the age of 12 years. According to the interview responses 1(1.7%) girl was 9 years old, 2 (3.3%) girls were 10 years old, 17(28.3%) of them were 11 years old, while 40 (66.7%) girls were 12 years old when their periods started. From the interview results 20 girls began menstruation before age 12 bringing the total number of girls with early menstruation to 63. These findings indicated that a total of 114 girls in public primary schools in Kiambu County had clear signs of precocious puberty.

Self Esteem

This study assessed the self-esteem of the respondents and the findings are presented in the 4-point Likert scale (4-Strongly Agree, 3-Agree, 2-Disagree, 1-Strongly Disagree) below.

Statement		4	3	2	1	T	M
On the whole, are you happy with yourself	F	240	33	7	20	300	3.64
	%	80%	11%	2%	7%	100%	91%
Are there times that you think you are not good enough	F	34	58	145	63	300	2.21
	%	11%	19%	49%	21%	100%	55%
Do you feel that you have some good qualities (academic, leadership, physical looks)	F	155	103	29	13	300	3.33
	%	52%	34%	10%	4%	100%	83%
Do you think that you are able to do things as well as most of the other girls?	F	180	83	29	8	300	3.51
	%	60%	28%	10%	3%	100%	88%
Do you like yourself?	F	261	22	10	7	300	3.79
	%	87%	8%	3%	2%	100%	95%
Do you ever feel useless?	F	55	134	93	18	300	2.75
	%	18%	45%	31%	6%	100%	69%
Do you feel that you are as good as other girls?	F	204	74	14	8	300	3.58
	%	68%	25%	5%	2%	100%	90%
Do other people respect you?	F	118	146	28	8	300	3.25
	%	39%	49%	9%	2%	100%	81%
Do you ever feel like a failure?	F	47	88	140	25	300	2.52
	%	16%	29%	47%	8.3%	100%	63%
Do you have a positive attitude towards yourself?	F	249	39	9	3	300	3.78
	%	83%	13%	3%	1%	100%	95%

The above results demonstrated that 95% of the respondents liked themselves and had a positive attitude towards themselves, 91% were happy with themselves, 90% felt that they were as good as other girls, 88% thought they were able to do things as well as most of the other girls, while 83% felt that they had some good qualities. Further the results indicated that 69% girls had felt useless, 63% had felt like failures and 55% others felt that they were not good enough at some point in their lives. The girls answered the question of how their pubertal maturation affected their self-esteem during the interview. Their responses showed that 28 (46.7%) of the girls said that their self-esteem dropped significantly, 20 (33.3%) of them reported that their self-esteem remained the same, while 12 (20%) girls said that their self-esteem went higher when signs of pubertal development began to show in their bodies. To solicit for collaborative information, the researcher asked the class teachers how early pubertal maturation affected the self-esteem of the preadolescent girls. To this question 50% of the class teachers reported that the girls developed low self-esteem, 38% of the teachers said that the girl's self-esteem remained the same, and 13% of the class teachers reported that the girls' self-esteem shot up when pubertal maturation began. From the focus group discussions, the girls had this to say:

“I felt like I was growing faster than my age and this made me feel bad about myself.”

“I had pimples all over my face and I did not want to look at people directly because I was ashamed of myself. I also became very big and tall and people called me Madam, which made me feel very bad”.

“I started bringing my shoulders in front and wearing a sweater all the time so that no one would see my breasts”.

To establish the relationship between precocious puberty and the self-esteem of the preadolescent girls a regression analysis was done as shown below.

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	1.922	.695		2.767	.007
Self Esteem	.354	.079	.475	4.477	.000

a. Dependent Variable: Precocious Puberty

H0 There is no significant relationship between precocious puberty and the self-esteem of preadolescent girls in primary schools in Kiambu County.

The regression analysis above revealed that ($\beta=0.354$, $p=0.000$) indicating that there was a significant relationship between precocious puberty and the self-esteem of pre-adolescent girls.

Discussion

The frequency tabulations and the girls' responses showed that 114 out of the 410 girls who participated in the study had signs of precocious puberty, and that a significant number of girls in public schools in Kiambu County had signs of low self-esteem. The regression analysis ($\beta=0.354$, $p=0.000$) indicated that there was a significant relationship between precocious puberty and the self-esteem of preadolescent girls. These results are confirmed by the structured interview responses from both teachers and girls, and the narratives from the focus group discussions, which indicated that when pubertal maturation began there was a change in the self-esteem of majority of the girls. These results agree with the findings of Fraser (2017) and those of Lee et al. (2015) which found a relationship between precocious puberty and low self-esteem among preadolescent girls. This study attributed these results to the radical and sudden bodily changes that are characteristic of puberty, at a time that the girls are not ready for them. This researcher agreed with Gatti et al. (2014) who wrote that self-esteem is so intrinsically linked to thoughts about one's body that physical appearance has been found to be the greatest predictor of self-esteem in many adolescent girls.

Conclusion

This study has established that precocious puberty is on the increase globally. As well, the study has confirmed that when girls mature earlier than normal their self-esteem is affected negatively in a significant number of girls. Self-esteem plays such a crucial role in many areas of functioning of young people including academic performance, emotional stability, social relationships and general well-being. It is therefore important to monitor and take care of anything that affects the self-esteem of young people in a negative way. Since some of the factors that contribute to precocious puberty such as diet and environmental factors can be controlled, precocious puberty can also be controlled to some extent. This knowledge is critical for parents, therapists, teachers, policy makers and other stakeholders because they can prevent early maturation where possible and devise ways of taking care of the developing girls where prevention is not possible. In so doing the negative outcomes that come with early pubertal maturation may be alleviated.

Recommendations

This study recommends that awareness be created among all the stakeholders including parents, teachers, peers, therapists and policy makers on the negative implications of precocious puberty to the self-esteem of developing girls, so that better ways of taking care of them may be sought.

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