International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Age of Menarche and Menstrual Disorders Among Differently Abled Adolescent Girls Attending Government Aided Special Schools in Belgaum District: A Cross Sectional Study

Ms. Deepika Vishwanath[1], Dr. Deepa Metgud[2]

[1]Assistant Professor, Physiotherapy
[2]Professor and HOD

Abstract

Background: One major indicator among teenage girls during puberty is the onset of menstrual cycle. Gynecological issues often present with different trends and characteristics in differently-abled adolescent girls.

Objective: To determine the age of onset of menarche and menstrual disorders and also to study the menstrual awareness and hygiene practices among differently abled adolescent girls attending government aided special schools.

Method: A cross sectional study was carried out among 100 differently abled adolescent girls in ten different government aided special schools in Belgaum district. A 19-item pre-designed structured questionnaire that included the information regarding age of menarche and menstrual disorders was administered by the investigator based on structured interview method to the care takers of the children and the information was recorded.

Results: Mean onset of menarche among differently abled adolescent girls is 12.19 ± 1.47 years. Dysmenorrhea was observed in 49% of the girls. 30% of them presented with oligomenorrhea, 9% polymenorrhea, 7% amenorrhea, 14% hypomenorrhea and 2% with metrorrhagia. 90% of the girls practiced menstrual hygiene in the form of usage of sanitary pads and regular cleaning of external genitalia, and 27% of the girls were aware about menstrual onset.

Conclusion: Onset of menarche in differently abled adolescent girls found to be in ranges as that of the normal girls. Menstrual disorders were seen in most of the girls, menstrual hygiene practices were implemented in majority of the girls but lack of menstrual awareness was noticed.

Keywords: Puberty, Differently abled, Adolescent girls, Menarchal onset, Menstrual problems.

Key Message: Menarcheal problems are commonly seen among normal adolescent girls but it is unique and less addressed in girls with special needs due to their physical inabilities and also communication barriers. It is always a burden and an extra concern for the family and caregivers as they regularly require an assistance for the menstrual management and the hygiene practices.

Introduction

Puberty is a period that is characterized by the physical and psychological changes that happen at exceptionally quick pace. In females, this phase of adulthood is marked with onset of menstruation. Menstruation is a visible manifestation of cyclic physiologic uterine bleeding due to shedding of the endometrium following invisible interplay of hormones mainly through hypothalamo-pituitary-ovarian axis.[2] The onset of menses in special need girls can have an impact on their regular activities and an extra worries for families and caretakers at home, in school and also in the society. Menstrual issues are commonly seen in 18% of women with special needs when compared with 5% of the normal girls.[7]

In differently-abled children, dysmenorrhea manifestation, menorrhagia, and chronic mental health disruptions are intermittent and painful. The most common menstrual-related gynecological behavioral issues include aggression, restlessness, hyperactivity, increased agitation, and self-mutilation, these issues are difficult to determine due to low levels of understanding and/or communication barrier.[7] Menstrual cleanliness and implementing standard care during pubertal phase is one of the major issues among these females due to physical inabilities. They regularly require assistance in their hygiene practices like identification of menses, placing, washing and disposal of sanitary pads.[11] It is important to There are difficulties in teaching menstrual care that are important for their health and social needs due to low level awareness in intellectual disabled, in visual impairment and communicating problems in speech and hearing-impaired girls.

Menstrual issues in differently abled adolescent girls are often unique to the population and there is paucity of knowledge about the menstrual health and issues among these girls, therefore the aim of this present study is to determine the age of onset of menarche and menstrual disorders. This study also aims to know about the menstrual awareness and hygiene practices among differently able adolescent girls attending government aided special schools.

Objective of the study:

Primary objective: Is to determine the age of onset of menarche and also to study the menstrual disorders in adolescent girls with disability going to government aided special schools.

Secondary objective: Is to know the menstrual hygiene practice in adolescent girls with disability going to government aided special schools.

Materials and Methods

Study Design: Observational study

Study type: Cross-sectional study

Study setting: 10 government aided special schools in Belgaum district.

Participants: All menstruating differently abled adolescent girls aged 10-19 years attending special schools.

Sample size: 100 (sample size was open ended)

Outcome measure/ variables: 19 item pre-designed structured questionnaire.

Procedure: A cross- sectional study was carried out among 100 differently abled adolescent girls aged 10-19 years from ten different government aided special schools in Belgaum district. Approval for the study was obtained from the Institutional Ethical Committee. Prior permission for the study was obtained from the principal and the school authorities of each school. All the adolescent menstruating girls in the

age group of 10-19 years in special schools were included in the study.

Purpose of the study was explained to the care takers of children in school and informed assent was obtained. Brief demographic data regarding age, BMI, type of school, type of disability and percentage of disability were recorded. As there are no standardized scales to assess the menstrual problems among differently abled adolescent girls, a questionnaire on menstrual health, problems and hygiene practices was developed by the investigator. It is a 19- item pre-designed structured questionnaire that is divided into four different categories such as age of onset of menarche, menstrual disorders, menstrual hygiene and menstrual awareness. The questions were administered by the investigator to care takers of the children in the schools through a structured interview and the information regarding the child's menstrual health was recorded.

Statistical Analysis:

Data obtained were analyzed and presented in numbers and means. Descriptive statistics was used to determine the percentage and mean.

Results:

Table 1: Demographic Characteristics among differently abled adolescent girls (n=100)

Demographic Characteristics	**(%)**
Age (in years)	
10-14	32
15-19	68
BMI: (weight in kgs/height in mts^2)	
Severe thinness	12
Thinness	30
Normal	51
Overweight	07
Type of School	
Day Student	11
Boarders	89
Type of Disability	
Visual impairment	21
Intellectual disability	39
Hearing and speech impairment	40
Percentage of Disability	
0-25 %	05
26-50 %	12
51-75 %	54
76-100 %	29

Table 2: Menarchal Age among differently abled adolescent girls

Type of disability	Age of menarche (Mean ± SD)
Blind	12.81 ±1.12
Intellectual Disabled	12.36 ± 1.48
Deaf and Dumb	11.07 ± 1.49
Total	12.19 ± 1.47

Table 2 describes the menarcheal age among differently abled adolescent girls. The mean age of onset of menarche is 12.19 ± 1.47 years. Menarcheal age among visual impaired adolescent girls was 12.81 ±1.12 years, intellectual disabled (12.36 ± 1.48 years) and hearing and speech impaired (11.07 ± 1.49 years).

Table 3: Menstrual Disorder among differently abled adolescent girls

Menstrual Characteristics	(%)
Dysmenorrhea	
Yes	49
No	29
Don't know	22
Based on Length of cycle	
Polymenorrhea (< 21 days)	09
Normal (21-37 days)	54
Oligomenorrhea (>37 days)	30
Amenorrhea (> 3 months)	07
Based on Days of flow	
Hpomenorrhea(< 3 days)	14
Normal (3-7 days)	84
Metrorrhagia(> 7 days)	02

Table 3 shows dysmenorrhea and other menstrual disorders based on length of cycle, days of flow and. 49% of the girls had dysmenorrhea. Based on length of the cycle 30% of the girls had oligomenorrhea, 9% of them had polymenorrhea and 7% amenorrhea. Based on days of flow 14% of them presented with hypomenorrhea and 2% metrorrhagia.

46% of the girls had pre-menstrual pain, 34% did not have and 20% of them could not know about the pre-menstrual pain. 54% of the girls had regular menstrual cycles and 46% did not.

Table 4: Menstrual Hygiene and Menstrual Awareness among differently abled adolescent girls:

Variables	(%)
Materials used during menstruation	
Sanitary Pads	90
Old washed clothes	10
No. of pads used in each cycle	
1-4	18
5-8	30
9-12	44

13-16	05
> 16	03
Regular cleaning of external genitalia	
Yes	100
No	0
Help to manage during menstruation	
Yes	40
No	60
Partial assistance	18
Complete assistance	22
Able to report about menstruation	
Yes	72
No	28
Awareness about menstruation	
Yes	27
No	73

Table 4 shows menstrual awareness and menstrual hygiene practices among differently abled adolescent girls

Discussion

The present study aimed to determine the age of onset of menarche and menstrual disorders among differently abled adolescent girls and also aimed to study the awareness and menstrual hygiene practices. The menarcheal age in normal girls is between 11-13 years and the secondary sexual characters develops by 13 years of age. [8,3] In our study the mean age of onset of menarche among differently abled adolescent girls was 12.19 ± 1.47 years which is similar to age of menarcheal onset in normal adolescent girls. However, the onset of menarche varied based on the type of disability. Age of menarcheal onset in autism spectrum disorders was 20.3 years ,[6] developmental delayed girls 12.6 years, [12] and in girls with cerebral palsy it was12.3 years, [13]in blind girls it was 13.6 years, [10] and in intellectual disabled it was found to be between 11-13 years. [20,9] In our study the mean age of onset of menarche in blind was found to be 12.81 ± 1.12 years and intellectual disabled it was 12.36 ± 1.48 which in similar to the previous studies. [7,9,10,20] However, there were limited studies on mean age of menarche in deaf and dumb and in our study and we found that mean age of onset of menarche in these girls was 11.07 ± 1.49 years.

In our study 46% of the differently abled adolescent girls had irregular menstrual cycles. About 60% of the girls with developmental disabilities are known to have menstrual irregularities, that may be due to intake of medications, such as phenytoin, phenobarbital etc. increases cytochrome P450 hepatic microsomal oxidative enzyme activity that results in quick discharge of steroid hormones and may lead to menstrual irregularities. [7, 11]

In the present study 49% of the differently abled adolescent girls had dysmenorrhea, literature states that 10-45% of the girls with disability have been reported with dysmenorrhea and it is manifested as abnormal behavior.[11] Dysmenorrhea related pain is caused due to hypersecretion of prostaglandins particularly PGF_{2a} and PGF_2 which enhanced uterine contractility. Adolescent girls with dysmenorrhea have high levels of prostaglandins, and these levels are controlled by progesterone. During the first two days of

menstruation progesterone levels drops which in turn increases the prostaglandin levels leading to high amplitude contractions. [22]

30% of the differently abled adolescent girls in this study presented with oligomenorrhea and 7% with amenorrhea. Studies have found that about 30%-55% of the normal adolescent girls have reported with irregular menstrual bleeding, however percentage of irregular bleeding in differently abled adolescent girls varied with type of disability. Irregular menstrual bleeding is seen in 10-20% of the girls with epilepsy, [11] girls with downs syndrome have irregular bleeding due to higher incidence of thyroid disease. [21] Literature states irregular bleeding in differently abled adolescent girls may be due to intake of medications or endocrinopathies. Amenorrhea is a sign of anovulation which may be due to low weight or hyperprolactinemia that causes low estrogen levels. [4,11] Antipsychotic drugs can trigger hyperprolactinemia, which can lead to abnormal bleeding and eventually amenorrhea. [1, 11]

In the current study majority of the girls (90%) had good hygiene practice among which 40% of the girls were dependent on their caregivers. Studies have shown that 54.1% of disabled girls were dependent for the entire menstrual hygiene process, 37.5% were partly independent and 8.3% of them were completely independent. [19] Quint has reported that differently abled adolescent girls face challenges in their menstrual hygiene practices such as difficulties in removal and placing of the sanitary pads and they may throw the pads in in-appropriate places, this may be due to lack of awareness or limited understanding, lack of self-help abilities. Disabled girls are unable to attain the coping mechanism which is the learnt and acquired behavior because of which they regularly require assistance from the caregivers at home or at school in their hygiene management.

The present study found that there is lack of menstrual awareness among differently abled adolescent girls only 27% of the girls had some knowledge about the menstrual cycles prior to their menarche. Carlson and Wilson reported that 37.5% of the intellectual disabled girls were aware about the menarche and presented with little knowledge about monthly cycles, practice of pad changing. [19]

Limitation:

The present study age of menarche and menstrual problems had a few limitations. Firstly, the information obtained was primarily based on the care givers observations noted in the school. Secondly, there was no records of diagnosed gynecological issues in them. Thirdly, the sampled population was only limited to three different disabilities, therefore the results may not reflect the issues with different disabilities.

Conclusion

The study showed that the differently abled adolescent girls had similar onset of menarche as that of normal adolescent girls. Most of the girls had irregular menstrual pattern, cycle length variations, dysmenorrhea, heavy or scanty flow. It also showed that there was good standard of hygiene practices but there was inadequate knowledge about the menstrual awareness among these girls.

References

1. Joshi GA, Joshi PG. Study of menstrual patterns in adolescent girls with disabilities in a residential institution. International journal of adolescent medicine and health. 2015 Feb 1;27(1):65-8.
2. Konar H. DC dutta's textbook of gynecology. JP medical ltd; 2016 jun 30.

3. Greil H, Kahl H. Assessment of developmental age: cross-sectional analysis of secondary sexual characteristics. Anthropologischer Anzeiger; Bericht uber die biologisch-anthropologische Literatur. 2005 Mar;63(1):63-75.
4. Wieck A, Haddad PM. Antipsychotic-induced hyperprolactinaemia in women: pathophysiology, severity and consequences: selective literature review. The British Journal of Psychiatry. 2003 Mar;182(3):199-204.
5. Quint EH, O'Brien RF. Menstrual management for adolescents with disabilities. Pediatrics. 2016 Jun 20:e20160295.
6. Knickmeyer RC, Wheelwright S, Hoekstra R, Baron-Cohen S. Age of menarche in females with autism spectrum conditions. Developmental Medicine and Child Neurology. 2006 Dec;48(12):1007-8.
7. Jeffery E, Kayani S, Garden A. Management of menstrual problems in adolescents with learning and physical disabilities. The Obstetrician & Gynaecologist. 2013 Apr 1;15(2):106-12.
8. Pathak PK, Tripathi N, Subramanian SV. Secular trends in menarcheal age in India-evidence from the Indian human development survey. PLoS One. 2014 Nov 4;9(11):e111027.
9. Nurkhairulnisa AI, Chew KT, Zainudin AA, Lim PS, Shafiee MN, Kampan N, Ismail W, Salwina W, Grover S, Azurah N, Ghani A. Management of Menstrual Disorder in Adolescent Girls with Intellectual Disabilities: A Blessing or a Curse?. Obstetrics and gynecology international. 2018;2018.
10. Skandhan KP, Reddy S, Pandya A, Balakrishnan S, Osuki D, Vasudevan J. Menarcheal age of blind girls. Annals of Medical Physiology. 2018 Mar 31;2(1):3-6.
11. Quint EH. Menstrual issues in adolescents with physical and developmental disabilities. Annals of the New York Academy of Sciences. 2008 Jun 1;1135(1):230-6.
12. Chuah I, McRae A, Matthews K, Maguire AM, Steinbeck K. Menstrual management in developmentally delayed adolescent females. Australian and New Zealand Journal of Obstetrics and Gynaecology. 2017 Jun;57(3):346-50.
13. Zacharin M, Savasi I, Grover S. The impact of menstruation in adolescents with disabilities related to cerebral palsy. Archives of disease in childhood. 2010 Jul 1;95(7):526-30.
14. Chesney MA, Tasto DL. The development of the menstrual symptom questionnaire. Behaviour Research and Therapy. 1975 Oct 1;13(4):237-44.
15. Thakre SB, Thakre SS, Reddy M, Rathi N, Pathak K, Ughade S. Menstrual hygiene: knowledge and practice among adolescent school girls of Saoner, Nagpur district. Journal of clinical and diagnostic Research. 2011 Oct 1;5(5):1027-33.
16. Yasmin S, Manna N, Mallik S, Ahmed A, Paria B. Menstrual hygiene among adolescent school students: An in-depth cross-sectional study in an urban community of West Bengal, India. IOSR J Dent Med Sci. 2013 Mar;5(6):22-6.
17. Matteson KA, Scott DM, Raker CA, Clark MA. The menstrual bleeding questionnaire: development and validation of a comprehensive patient-reported outcome instrument for heavy menstrual bleeding. BJOG: An International Journal of Obstetrics & Gynaecology. 2015 Apr;122(5):681-9.
18. Chou YC, Lu JZ, Pu CY. Prevalence and severity of menstrual symptoms among institutionalised women with an intellectual disability. Journal of Intellectual and Developmental Disability. 2009 Mar 1;34(1):36-44.
19. Park HR. Menstrual Support for Females with Developmental Disabilities: Survey and Interview of Parents or Caretakers(Doctoral dissertation, University of Kansas).
20. Chavan BS. Menstrual pattern among females with intellectual disability: a cross sectional study. Jour-

nal of Disability Management and Rehabilitation. 2017 May 7;2(1):8-12.
21. Quint EH. The conservative management of abnormal bleeding in teenagers with developmental disabilities. Journal of pediatric and adolescent gynecology. 2003 Feb 1;16(1):54-6.
22. Bernardi M, Lazzeri L, Perelli F, Reis FM, Petraglia F. Dysmenorrhea and related disorders. F1000Research. 2017;6.