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The characteristics of the menstrual cycle in Nigerian schoolgirls and the implications for school health programmes

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Summary

The present study examines the characteristics of menstrual cycle among 361 Nigerian postmenarcheal schoolgirls derived from seven public secondary schools. Survey questions covered preparation for menstruation, duration of flow, cycle length, regularity, premenstrual syndrome and dysmenorrhoea. For the study subjects the mean age (years) at the time of interview, at menarche, and completed since menarche are 16.5 ± 3.3 , 13.7 ± 2.6 and 2.9 ± 1.2 respectively. Premenstrual counselling was reported in 84.2%; and 48.6% was provided by parents and guardians, and 23.7% by school teachers.

The findings indicate that menstrual flow ≤ 2 days, and cycle length ≤ 20 days are common; occurring in 20-30% of schoolgirls. Abnormal patterns such as cycle length ≥ 38 days, flow duration ≥ 8 days and heavy menstruation occurred in less than 5% of study subjects. Irregular menstrual cycles were recorded in 13%, and severe dysmenorrhoea in 17.2%. Severe premenstrual syndrome occurred in about 20% of schoolgirls, with symptom-complex mainly of behavioural change, arousal and impaired concentration.

The need for a multi-disciplinary school health counselling program that would provide relevant information on menstrual pattern and its common variation, identify abnormal patterns for early referral, provide psychological support and drug relief of distressing menstrual symptoms, and provide information on other contemporary adolescent problems is discussed.

Resume

On a étudié dans ce travail les caractéristiques du

cycle menstruel parmi 361 élèves nigérianes tirées de sept écoles secondaires publiques. Les questions posées comprenaient les préparatif pour la menstruation, la durée et la longueur du cycle, la régularité, le syndrome prémenstruel et la dysménorrhée.

Pour les sujets étudiés, la moyenne d'âge au moment de l'entrevue, au début et à la fin de la menstruation est la suivant 16.5 ± 3.3 , 13.7 ± 2.6 et 2.9 ± 1.2 respectivement. Le conseil prémenstruel a été signalé dans 84,2%; 48,6% a été donné par les parents et tuteurs, et 23,7% par les enseignants.

On a découvert que les ≤ 2 jours pour l'évacuation menstruel et les ≤ 20 jours pour la durée du cycle sont fréquents, se produisant dans 20-30% des élèves. Les cas anormaux tels que le cycle d'une durée de ≥ 30 jours, l'évacuation pendant ≥ 8 jours ainsi que la menstruation abondante se sont produits dans moins de 5% des sujets étudiés.

Les cycles menstruels irréguliers ont été signalés dans 13% et la dysménorrhée sévère dans 17.2%. Le syndrome pré-menstruel aigu s'est produit dans environ 20% des filles, avec le symptôme-complexe touchant surtout au changement de comportement, à l'excitation et à la perturbation de concentration.

On a discuté la nécessité d'un programme multi-disciplinaire santé à l'école, capable de conseiller et de donner les information sur le pattern menstruel et sa variation, d'identifier les patterns anormaux pour le traitement immédiat, de fournir le soutien psychologique et les médicaments contre les symptômes menstruels sévères et de diffuser les informations sur d'autres problèmes associés aux adolescents du monde d'aujourd'hui.

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Introduction

In recent times perimenarcheal menstrual disturbances in schoolgirls has provoked a great deal of interest. This is due to certain indications: menstrual irregularities in young girls and the effect on their family members[1], the doctors' awareness that these irregularities may affect future reproductive potential[2], and the increasing realisation of the role school health counselling programmes may play in alleviating psychosomatic stress, and its effects on the young girls[3,4]. Since menstrual irregularities are common in the perimenarcheal years, consequent of the immaturity of the hypothalamic-pituitary-ovarian axis[2], the need for health education of the maturing adolescent on these issues are obvious.

Similarly, the importance of sex education and the need to introduce it into the curriculum of Nigerian secondary school system has gained wide acceptance[5]. Topics for inclusion in the curriculum, however, remain areas of major disagreement. An important but non-controversial topic is reproductive biology as it relates to pubertal growth and development. Therefore, the objective of this study is to provide data on the pattern and variation of the menstrual cycles in Nigerian schoolgirls. Such data will be relevant in a guidance and counselling school health programme.

Materials and methods

Survey data reported in this study are obtained from schoolgirls aged 11-19 years, in the Junior Secondary School Year 3, who were recruited from seven public schools in the Ilorin metropolis, Kwara State, Nigeria. The subjects are all black, health-appearing, and belong mainly to the lower and middle social class.

A questionnaire format was designed having answers that were categorised into predetermined slots for ease of understanding and completion by students, and for computer analysis. Prior to conducting the survey, the questionnaire was pretested, and the interviewers, four undergraduate students in the Department of Guidance and Counselling, were trained. The inquiry was conducted by the same group of interviewers who directly questioned the schoolgirls in their classrooms over a two-week period.

Survey questions include age last birthday, age at first menstruation, number of years completed since

menarche, premenarcheal counselling on menstruation, and by whom. Concerning menstruation, questions were asked that elucidated variations in menstrual patterns: cyclicality, cycle length, duration of flow, amount of flow, pain with menstruation, its severity and monthly recurrence.

The symptomatology and severity of premenstrual syndrome was assessed in each schoolgirl by means of the modified version of Moos Distress Questionnaire[6]. This 44-item standardised screening instrument evaluated symptom complex of premenstrual syndrome in seven categories; pain, behavioural change, autonomic reactions, negative effect, arousal, and physical symptoms. On the questionnaire, each student self rated her experience of premenstrual syndrome on a 4-point severity scale; none, mild, moderate and severe to which numerical scores 0, 1, 2, 3, respectively are assigned. Mean scores were derived for each symptom-complex category and compared. The proportion of schoolgirls who reported severe symptoms within each subgroup was determined.

Results

Three hundred and sixty-one schoolgirls completed the questionnaires. Their ages (years) were in the range 12 to 19, mean 16.5 ± 3.3 . Age (years) at menarche was reported in the range 10 to 17, mean 13.7 ± 2.6 . The number of years completed since menarche was reported in the range 1 to 6, mean 2.9 ± 1.2 .

The data in Table 1 indicates that an overwhelming majority 304 (85.9%) of the schoolgirls had premenarcheal counselling. The instructions were provided by parents, guardians and relations 48.6%, school teachers 23.7%, school debates and symposia 6.3%, media, books and magazines 5.9%, friends and peers 5.3%, religious instructions 5.3%

Table 1: Responses concerning premenstrual information and the informant (n = 354)

	No.	%
Received premenstrual information: Yes	304	84.2
No	50	13.6
Informant (n = 304)		
Parents, guardians, relations	148	48.6
School teachers	72	23.7
Friends and peers	16	5.3
Books, magazines, media	18	5.9
Symposia, school debate	19	6.3

Church/Mosque sermon	16	5.3
Doctors/Nurses	4	1.3
Others	11	3.6

The characteristics of the menstrual cycle; duration of flow, cycle length, cyclicality, and the occurrence of painful menstruation are reported in Table 2. Menstrual flow lasted 3-7 days in 246 (68.1%) schoolgirls, while 106 (29.4%) and 4 (1.1%) reported duration of flow less than 3 days and 8 days or more respectively. The amount of flow was described as little, moderate and heavy by 151 (41.8%), 193 (53.5%) and 14 (3.9%) schoolgirls respectively. Cycle length 20 days or less was common, having been reported by 86 (23.8%) schoolgirls. On the contrary, only 20 (5.5%) reported cycle length 33 days or more. Regularity of menstruation was reported as occurring in predictable pattern all the time and most of the time by almost two-thirds (64.9%) of schoolgirls, while 39 (11.0%) of young adolescents in this study reported their menstrual cycles as irregular.

Table 2: Characteristics of the menstrual cycles and the proportion of responses

	No.	%
<i>Duration of flow (days):</i>		
2 or less	106	29.4
3 - 7	246	68.1
8 days or more	4	1.1
Irregular/no response	5	1.4
<i>Amount of flow:</i>		
Little	151	41.8
Moderate	193	53.8
Heavy	14	3.9
No response	3	0.8
<i>Cycle Length (days):</i>		
20 - less	86	23.8
21 - 24	149	41.3
25 - 32	100	27.7
33 - 37	16	4.4
38 or more	4	1.1
Irregular pattern	6	1.7
<i>Regularity or Menstrual cycle:</i>		
All the time	113	31.3
Majority of the time	116	32.2
Occasionally	85	23.5
Irregular (no pattern)	47	13.0

<i>Pain before and/or during period:</i>		
Yes	308	85.3
No	53	14.7
Mild	133	43.2
Moderate	122	39.6
Severe	53	17.2

<i>Pain of menstruation happen this way:</i>		
All the time	91	29.5
Most of the time	140	45.5
Occasionally	77	25.0

Pain occurring before and during menstruation was reported by 308 (85.3%) schoolgirls, and was severe 17.3%, moderate 39.6% and mild 43.2%. The pain was experienced all the time or most of the time by 75% but only occasionally in 25% of the schoolgirls.

As indicated in Table 3, mean symptoms scores of premenstrual syndrome were highest in the categories of behavioral change 1.68, arousal 1.47, physical symptoms 1.39 and concentration 1.23. In general, about 10-22% of schoolgirls reported severe premenstrual symptoms in all symptom-complex categories; the proportion being highest for behavioural change 22%, arousal 20.6%, physical symptoms 18.7% and concentration 16.7%.

Table 3: Symptom scores and proportion of schoolgirls having severe premenstrual symptoms

Symptomatology* Classification	Average Symptom Score	Proportion (%) having severe symptoms
Pain	0.77	13.4
Behavioural change	1.68	22.0
Automatic reactions	0.92	10.8
Arousal	1.47	20.6
Concentration	1.23	16.7
Negative effect	0.78	13.0
Physical symptoms	1.39	18.7

* Symptomatology Classification of Moos [6]

Discussion

Among adolescents a significant relationship between adequate preparation and positive reaction to menarche has been established [7]. Therefore, an important finding in this study is that a substantial proportion of the schoolgirls have received premenarcheal counselling from their parents, guardians or school-teachers. While controversy still exists about whether the home or the school should

prepare the adolescents, it is generally recognised that both institutions should play a complementary role. The role of the school health program should be to provide factual and objective information that would prepare the students for the expected experiences. The school health counsellor who sees adolescents should have knowledge of the normal pattern and common variations of the menstrual cycle, and discuss them from the perspective of growth and development. On the other hand, health information from parents and guardians are best given within the framework of social and cultural values.

Early studies[8], have established criteria of normal menstrual cycle; cycle length 28 ± 6 days, duration 3-7 days in over 85% of adult women. Short cycles are commonly regarded as interval duration less than 21 days and long cycles are 35 days or longer. Eight or more bleeding days and bleeding for 2 days or less are often abnormal in adult women. Data provided in this study indicate that cycle length is 20 days or less, flow duration lasting 2 days or less are common, occurring in about 20-25% of late pubertal girls. Menstrual irregularities and considerable variation in cycle length and flow duration are common during the first 18-24 months following menarche[2]. Short cycles are associated with imperfect follicular development or abnormal corpus luteum function, while long cycles are associated with delayed follicular maturation[9]. Both conditions are evidence of an immature hypothalamic-pituitary-ovarian axis that regulates the menstrual cycle. Perimenarcheal menstrual irregularities are in most cases short-lived. It is generally agreed that stability of menstrual events is achieved about three years after menarche by which time full gynaecologic maturity particularly including, the establishment of ovulatory menstrual cycles is attained. On the other hand cycle length 38 days or more, flow duration 8 or more days, and heavy menstrual flow each of which occurred in less than 5% of our study subjects should be regarded as abnormal menstrual pattern until proven otherwise. Fertility is threatened in these abnormal cases, and when menstrual irregularities persist three or more years following menarche[10]. This unfavourable effect can be reduced if in school health programs that affected students are identified and examined through appropriate referral system for evaluation and treatment.

Dysmenorrhea, the recurrent crampy lower

abdominal pain in association with menstruation, is a common and often disturbing gynaecologic complaint of adolescents. The overall prevalence of dysmenorrhea is usually high, as indicated in this report. Dysmenorrhea may be severe, causing recurrent short-term school absenteeism in about 15-20% of schoolgirls[11]. In recent times, anti-prostaglandin medications have proven most beneficial in the relief of painful menstruation[12]. School health programs must undertake to provide psychological support and drug relief of this disturbing symptom, thereby preventing the associated loss of invaluable school work.

The symptomatology of premenstrual syndrome (PMS) is complex and ill-defined, but commonly includes physical symptoms such as bloated feelings, weight gain, breast tenderness and swelling, and psychologic symptoms of irritability, depression, anxiety and impaired concentration[13]. The Moos Distress Questionnaire is a standardised screening instrument for the evaluation of the symptom complex of PMS[6]. The findings of this study indicate that severe PMS was reported in about 15-20% of schoolgirls, and symptoms were mainly in the categories of behavioural change, arousal and concentration. For a maturing schoolgirl such symptoms occurring each month can be frustrating and disturbing. Furthermore, there is no consensus regarding the aetiology and treatment of PMS; several theories having been proposed, and several drugs having been evaluated in controlled trials[13]. Newer data suggest that PMS is often associated with psychiatric disorders[14]. Given the evidence of links between PMS and psychological factors, the uncertainties and multiplicity of treatment choice, an important step must be made to identify schoolgirls affected by severe PMS, and provide psychological support. Only the few that may fail to respond would require further treatment at appropriate referral centres.

Contemporary adolescent problems which include sexuality, fertility, and drug abuse have increased considerably in recent times, and are accompanied by undesirable psycho-social and socioeconomic effects. It is important to take advantage of every opportunity to provide adolescents with accurate information about reproduction, sexuality, contraception, and the adverse effect of drug abuse[1]. With better information and systematic development of in-school guidance and counselling centres for adolescent problems, as well as with good collaboration with all

related disciplines, a comprehensive health education programme can be developed to effectively address these problems.

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