

# Attitude, Behaviour and Knowledge Regarding Menarche and Menstruation in Adolescent Schoolgirls in Kayseri

## Kayseri İlinde Adölesan Kızların Menarş ve Menstürasyon Konusunda Bilgi, Tutum ve Davranışları

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**ÖZET Amaç:** Çalışma amacı adölesan kızların menarş ve menstürasyon konusundaki bilgi, tutum ve davranışlarını belirlemek ve bilgilendirme sürecinin menarş karşı gösterilen ilk tepkiye etkisini tanımlamaktır. **Gereç ve Yöntemler:** Kesitsel nitelikli bu çalışma 1-31 Mart 2005 tarihleri arasında Kayseri İl merkezine bağlı beş ilçede (Kocasinan, Melikgazi, Hacılar, Talas, İncesu) yapılmıştır. Kayseri merkezindeki 85 lise ailelerin sosyoekonomik düzeyine göre; iyi (5), orta (5) ve düşük (5) olarak tabakalandırılmış random yöntemi ile 15 okul örnekleme dahil edilmiştir. Her bir okuldan örnekleme alınacak öğrenci sayısını bulmak için okullar öğrenci sayılarına göre ağırlıklandırılmıştır. 1783 lise birinci sınıf kız öğrenciye yüz yüze anket uygulanmıştır. **Bulgular:** Araştırma anında kızların %96'sı adet görüyordu. Menarş yaşı ortalaması 13.2±0.9 yıl idi. Kızların %82'si adet görmeden önce ilk adet hakkında bilgi almışlardı. Aileler, arkadaş/akran çevresi ve öğretmenler en önemli bilgi kaynakları idi. Kızların %76'sı menarş "anne olmaya hazırlık", %21'i "genç kızlığa geçiş" gibi pozitif, %62'si ise "kirli kanın akıtılması" gibi negatif bir değişliklik olarak tanımlamışlardır. Pozitif menarş deneyimi olanlar araştırma anında pozitif menstürel tutum ve davranışa sahip iken, negatif deneyimi olanlar ise tam tersi eğilimde olduklarını bildirmişlerdir. Kızların %98'i menstürasyon sırasında hijyenik ped kullanmaktadır. Günlük ped kullanımı ortalama 3.0 (±1.4)'dir. Kızların %90'ı menstürasyon sırasında, tamamı menstürasyon bitiminde banyo yapmaktadırlar. Tuvaletten önce ve sonra el yıkama alışkanlığı %54.2'dir. Ağrılı adet görme en sık bildirilen şikayet (%78.4) olup, ağrı yönetimi için reçetesiz ilaç kullanımı %35.5'tir. Araştırma grubunun çoğunluğu (%89.1) menarş konusundaki bilgilendirmenin menarştan hemen önce ve sağlık personeli tarafından yapılmasını istemektedirler. **Sonuç:** Kız öğrencilerin büyük çoğunluğu menarş hakkında daha önce bilgi edinmişlerdir. Bilgi alanların menarş karşı ilk tepkileri olumlu iken, almayanların tepkileri daha olumsuzdur. Bununla birlikte, önceden bilgi almasına rağmen olumsuz tepki gösterenlerin oranı da önemli boyuttadır. Menstürel hijyenle ilgili davranışlar yeterli olup, tuvaletten önce ve sonra el yıkama alışkanlığı yetersizdir. Ağrı yönetiminde hekim istemi olmaksızın ağrı kesici ilaç kullanımı önemli bir problemdir. Öğrencilerin daha önce bilgi aldıkları bazı kaynakları tekrar bilgi almak istedikleri kaynaklar arasında göstermemeleri dikkat çekicidir. Çalışma grubunun büyük çoğunluğu menarş hakkındaki bilgilendirmeyi adet görmeden hemen önce ve sağlık personelinin almak istemektedirler.

**Anahtar Kelimeler:** Menarş; ergen; davranış; tutum; bilgi

**ABSTRACT Objective:** The aim of this study was to determine the attitude, behaviour and knowledge regarding menarche and menstruation in the adolescent girls and to investigate whether education affects the primary response to menarche. **Material and Methods:** This cross-sectional study was carried out between the 1<sup>st</sup> March and 31<sup>st</sup> March, 2005 in five districts (Kocasinan, Melikgazi, Hacılar, Talas, İncesu) of Kayseri province. 85 high schools in Kayseri were stratified as good, middle and poor income levels according to the socioeconomic levels of the families of the children and with simple random sampling technique, 15 high schools with good (5), middle (5) and poor income (5) were included in the sample. The number of students in each school was calculated to figure out the sample number from each school. After verbal consent, a questionnaire was applied, face to face, to 1783 first grade highschool girls. Consent from the Ethical Committee was taken. **Results:** 96% of the girls had menstruated at the time of the interview. The mean menarche age was 13.2 ± 0.9. 82% of the girls had received information about menarche before it started. Families, friends/peers and teachers were the major information sources. 76% of the girls described menarche as a positive change such as "preparation to be a mother", 21% as "a transition to adolescence", whereas 62% described it as a negative change such as "discharging dirty blood". The girls who reported positive menarcheal experiences would tend to show positive current menstrual attitudes/behaviors and the opposite was true for the girls who reported negative menarcheal experiences. 98% of the girls used sanitary pads during menstruation. Mean daily pad-use was 3.0 (± 1.4) 90% of the girls took a bath during menses but on the other hand all of them had a bath at the end of menses. The habit of washing hands before and after toilet was 54.2%. Dysmenorrhea was the most commonly (78.4%) reported symptom and the rate of medication use without physician prescription for pain management was 35.5%. Of the study groups, 89.1% would like to have information about menarche from healthcare personnel just before it started. **Conclusion:** The majority of the adolescent girls had received information about menarche before it started. Families, friends/peers and teachers were the major information sources. The informed girls' primary response towards menarche was positive while that of the uninformed ones' were more negative. However, the rate of negative responders towards menarche was at a very serious level although they received information about it beforehand. Healthy behaviours related to menstrual hygiene were sufficient but the habit of washing hands before and after toilet was not enough. Self-medication over the counter for pain management was a serious problem. The fact that the students did not want to receive any other information from their prior sources was an interesting finding. Many of the study groups would like to have information about menarche from healthcare personnel just before it started. This shows the need of a rational education strategy that can abolish all the prejudice and wrong speculations, transferred throughout generations, and adolescents, in reality are eager to accept this.

**Key Words:** Menarche; adolescent; behavior; attitude; knowledge

The most striking example of neurophysiologic change in the human organism is “menarche, the first menstrual bleeding”, which usually takes a long time in women and is accepted as a sign of being an adolescent girl.<sup>1</sup>

The onset of menstruation profoundly changes adolescent girl’s life. Good hygiene, such as use of sanitary pads and adequate washing of the genital area and hands is important during menstruation. Learning about hygiene during menstruation is a vital aspect of health education for adolescent girls, as patterns that develop in adolescence are likely to persist through adulthood.

An improper and insufficient preparation for menarche and menstruation in the adolescent causes not only anxiety, fear, shame and nervousness but also a constrained perception of menstruation throughout their whole lifetime. The clarification of menstruation as a normal physiologic event and the explanation of hygienic rules to be followed during this period to the girls who are about to enter adolescence may be thought of as a step to create physiologically and psychologically healthy girls and thus a healthy generation.<sup>2</sup>

Traditional societies such as the Turkish, do not give importance to these subjects due to cultural traditions and religious beliefs and “menarche and menstruation” is not thought of as a subject to talk about. So as a result “proper and available information” is unattainable.<sup>3,4</sup> Thus, the young girl who is a candidate for adolescence, experiences not only fear but also anxiety due to the ignorance. Wrong choices regarding the information source/person, results in wrong or insufficient knowledge, and the development of wrong attitudes and behaviors regarding menstruation, which may last for a lifelong period.

From this point of view; establishment of the knowledge, attitude and behaviour about menarche and menstruation of first grade highschool female students was aimed and the effect of education was evaluated, analysing whether the information they obtained before menarche was suitable in content and timing and whether the information sources were the proper information sources or not.

## MATERIAL AND METHODS

This cross-sectional study was carried out between the 1<sup>st</sup> March and 31<sup>st</sup> March, 2005 in five districts (Kocasinan, Melikgazi, Hacılar, Talas, İncesu) of Kayseri province. 1783 female students, aged 10-17, from 15 public highschools were selected out of 85 schools using the stratified random sampling method. The Provincial Education Directorate was consulted and the five districts were stratified as good (5 schools), middle (5 schools) and poor (5 schools) income levels according to the socioeconomic levels of the families of the children. The number of students in each school was calculated to figure out the sample number from each school. 1783 first grade female students out of 3742 were included in the study. Consent from the Ethical Committee was taken.

After verbal consent, a questionnaire form of 35 items, which covered socio-demographic features of the students and the families and the knowledge, attitude and behaviour regarding menarche and menstruation in adolescent girls, was used as the data collection tool. Questionnaire forms were filled by the students in the classrooms under the guidance of a researcher. Answers to the question; “what is menarche?”, were evaluated as criteria for knowledge, attitude about menarche and menstruation physiology in adolescent girls, and the answers; “a transition to adolescence” and “preparation to be a mother” were evaluated as a positive answer whereas the answer “discharging dirty blood” was accepted as negative.

The statistical evaluation of the data was made with SPSS 13.0 (Illinois, Chicago, USA) program. Chi-square test was used for the comparison of the variables. Significance threshold was accepted as  $p < 0.05$ .

## RESULTS

The age of 1783 high school girls ranged from 14 to 17 years old. The mean age was  $15.1 \pm 0.7$  years, and the mean body mass index (BMI) was  $19.7 \pm 2.4$ . Seventy five (4.2%) of the girls had not menstruated yet. The menarche age of the girls who menstruated ranged from 10 to 16 years old, with

a mean age of  $13.2 \pm 0.9$  years. More than two-third of the girls (78.6%) menstruated regularly and their menstrual cycle was 21-35 days. The mean duration of menstrual flow was  $5.6 \pm 1.3$  days. Of the girls who still menstruated, 78.4 % reported that they experienced dysmenorrhea and 42.6% suffered from nervousness, 15.7% from edema in mammary glands, 12.3% from headache during their menstrual period (Table 1).

## KNOWLEDGE AND ATTITUDE

82% of the students who menstruated knew what menarche meant; however, 17.7% said that they did not know anything about it. Girls who were informed previously about menarche and menstruation described it positively such as “preparation to be a mother” (21.0%) and “a transition to adolescence” (75.9%) whereas 64.7% described it negatively such as “discharging dirty blood”.

It was found out that there was a significant correlation between “knowing the meaning of menarche” and “the type of the reaction that occurred just after menarche” ( $\chi^2= 109.6$ ,  $p < 0.001$ ). Of the girls who knew the meaning of menarche, 30.1% experienced “fear and anxiety” and 19.1% said “I was ashamed and felt dirty.” However; the same rates rose to 55.1% and 26.4% respectively in

those who did not know the meaning of menarche. Of the girls who knew menarche, 50.8% said that “I consider it is a normal phenomenon”, however, it was considered normal in only 18.5% of those who did not know what menarche was (Table 2).

## BEHAVIOUR AND HABITS

Approximately all of the girls (97.7%) used sanitary pads, while 2.5% used old pieces of cloth (thrown away after use) or cotton pieces. More than half of the girls stated that they changed sanitary pads 3 or 4 times during a day and washed their hands before and after toilet (53.6%, 54.2% respectively). While 90% of the girls who menstruated took baths during menstruation, 10% avoided it. On the other hand at the end of menstruation, all the girls took a bath (Table 3).

Of the girls, 78.4% experienced dysmenorrhea, of whom only 6% consulted a healthcare provider. To rest at home was the most advised method (56.3%) for menstrual pain management by all sources of information. This study revealed that 35.5% of the girls with dysmenorrhea self-medicated with over-the-counter medications.

## SOURCES OF INFORMATION

Families, friends/peers and teachers were the major information sources. Of the girls with dysmenorrhea who claimed to have had some information regarding their menstrual pain management; 47% received it from their mother, 18.9% from peers and/or friends (Table 4). The advised methods for pain management were as follows: rest at home advised by healthcare personnel, taking a drug advised by mass media and peers and/or friends, visiting a physician and hospital advised by health personnel.

There was a slight difference between former information sources and those from whom the students would like to receive information during the interview ( $\chi^2= 53.14$ ,  $p < 0.001$ ). 16% of those who were informed previously by their families and 17.6% of those who were informed formerly by their teachers preferred the same sources. Most of those who were informed by their friends or mass media and books would like to ha-

**TABLE 1:** Socio-demographic and menstrual characteristics of the schoolgirls (n= 1783).

Variables	Number	%
Mean age (yr)	Mean $\pm$ SD: 15.1 $\pm$ 0.7	
Body mass index (BMI)	Mean $\pm$ SD: 19.7 $\pm$ 2.4	
Have you menstruated?		
Yes	1708	95.8
No	75	4.2
Menarche age (yr)		
10-12	383	22.4
13-16	1325	77.6
Duration of flow (days)	Mean $\pm$ SD: 5.6 $\pm$ 1.3	
Dysmenorrhea		
Yes	1339	78.4
No	369	21.6
Physical exercise		
Yes	Regularly/sometimes	256/1359
No		168
		14.4/76.2
		9.4

**TABLE 2:** The distribution of the primary response towards menarche (n= 1708).

The type of primary response	The meaning of menarche				Statistical Assessment	
	Positive definition	Negative definition	Total		x <sup>2</sup>	P
	%	%	n	%		
Menarche as a natural event	44.4	16.5	674	39.5		
Extremely positive attitude					109.6	<0.001
Being pleased	6.4	2.0	96	5.6		
Extremely negative attitudes						
Fear and Anxiety	30.1	55.1	590	34.5		
Shame and dirt	19.1	26.4	348	20.4		
Total	1405	303	1708	100.0		

ve information from healthcare personnel (86.2%, 79.2% respectively). Nearly all of them (92.2%) who had information from healthcare personnel beforehand did not change the source of information.

The rate of those who used various information sources beforehand but who demanded to have information from health personnel during the research rose to 79.7% (Table 5). Besides, 89.1% of the girls said that the information about menarche and menstruation would be more beneficial if given before menarche.

## DISCUSSION

Menarche is the most important biological event in the life of a woman. For most girls, it marks successful progression through maturity and the onset of reproductive capability. In this study mean age of menarche ( $13.2 \pm 0.9$ ) was consistent with the reference points shown in literature.<sup>4-7</sup> Most of the adolescent girls in our study received information about menarche and menstruation physiology before they menstruated. Many of the girls had the correct knowledge about ovulation frequency, menstrual cycle and duration of flow except ovulation time. One fifth of the adolescent girls who received information considered menarche as a positive change such as “a transition to adolescence”, three fourth as “a preparation to be a mother”; nevertheless two third described it as a negative change such as “discharging dirty blood”. We found that there was a significant relationship between knowing the meaning of menarche and the

**TABLE 3:** Usual personal hygiene related to menstruation (n= 1708)

Using products during menstruation	Number	%
Sanitary pads (single use)	1666	97.5
Old cloth thrown away after single use	30	1.8
Cotton Pieces	12	0.7
Menstrual hygiene features		
Pads used per day	Mean $\pm$ SD: $3.0 \pm 1.4$	Range: 1-6
1-2	654	38.3
3-4	915	53.6
5-6	139	7.8
Washing hands-up		
Only before toilet	24	1.4
Only after toilet	758	44.4
Both before and after toilet	926	54.2
Bathing /showering during menstruation		
Not showering	169	9.9
Showring (bathing)	1539	90.1
Type of bathing		
Showring standing up	808	47.3
Showring sitting on a chair	669	39.2
Showring in a bath-tube	62	3.6
Showring(bathing) after menstruation	1708	100.0

type of the reaction occurring soon after menarche ( $p < 0.001$ ). The rate of such feelings as “fear, anxiety, feeling of shame and dirt” was significantly higher in those girls who did not know the meaning of menarche than those who did and experienced such positive feelings as “a normal event, a feeling of rejoice”. It was preoccupying that more than half of the girls showed negative feelings towards menarche though they were provided with

**TABLE 4:** The distribution of advised methods for menstrual pain management by the source of information (n= 1339).

Source of information	Methods advised				Total*		Statistical Assessment	
	Rest at home	Take a drug	Go to hospital	Apply hot water	n	%	x <sup>2</sup>	P
	%	%	%	%				
Family	56.5	33.6	8.4	1.5	630	47.0		
Peers/friends	56.5	37.5	2.8	3.2	253	18.9		
Teachers	56.5	36.5	4.0	3.0	200	14.9		
Mass media	51.7	43.1	2.8	2.2	176	13.1	27.10	<0.01
Health personel	63.7	25.0	8.7	2.5	80	6.0		
Total**	754	476	80	29	1339	100.0		

\*Percent of column.

\*\* Percent of line.

**TABLE 5:** The distribution of the former and preferred recent sources of information (n= 1313).

Preferred sources of information	Preferred sources of information			Total *		Statistical Assessment	
	Health personel	Teachers	Parents	n	%	x <sup>2</sup>	P
	%	%	%				
Parents	76.3	7.7	16.0	574	43.7		
Peers/friends	86.2	8.0	5.7	261	19.9		
Teachers	75.7	17.6	6.7	210	16.0	53.14	<0.001
Mass media	79.2	7.9	12.9	178	13.5		
Health personel	92.2	3.3	4.4	90	6.9		
Total	1046	119	148	1313	100.0		

\* 92 girls who had received information from various sources before onset of menarche did not answer this question.

information beforehand. The reported prevalence of negative feelings towards menarche in other studies ranged from 20% to 45%.<sup>8</sup> Negative feelings might be related not only to the extension of the information but also proficiency and accuracy of the information source. Inaccurate information, and the negative experiences can be transferred from the sources to the girls, mainly from mothers, to their daughters.

In the traditional countries like Turkiye; menarche, menstrual hygiene and dysmenorrhea is rarely discussed at home or school, especially in the regions where the current study was conducted.<sup>4,9</sup> In these regions; menstruation, considered as “dirty”, is held as a cultural taboo about which you should not be talking in heterogeneous groups. This prevents the flow of accurate and sufficient information regarding menstrual period and often leads to superstitious perceptions and beliefs about menstrual hygiene and dysmenorrhea.

Similar to our findings, previous studies stated that educating adolescent girls about menarche and menstruation before they menstruated and the appropriateness of the information provided was a determinant of the type of reaction.<sup>10,11</sup> For this reason, in order to develop a more positive attitude and sensitive behaviour towards the menstruation process during a lifetime, schoolgirls should be educated properly before menarche onset and prepared physically and emotionally.

Unfortunately, we might claim that the girls received information about menarche and menstruation in an inappropriate way from their parents, friend and peer circle and mass media (Table 4). However, adolescent girls did not identify friend/peer circle and mass media as the information source from which they would like to benefit again and actually, they stated they wanted to receive it from the healthcare personel. Nearly all of those who received information from

healthcare personel previously preferred the same source (Table 5). Whereas it was shown in previous studies that mothers or elder sisters and friend/peer groups, books and TV were the most common source of information on the issue.<sup>12-15</sup>

These information sources were not the demanded ones but the available ones, so their appropriateness and proficiency was uncertain. Furthermore, not only availability but also appropriateness of the education was important. Incorrect explanations and informations about menarche, such as “discharging dirty blood”, “not bathing during menstruation”, “use of over the counter medication without a physician’s advice” came mostly from friends and peer groups and mass media. On the other hand, it was a hopeful finding that nearly all of those who received information from healthcare personel preferred the same source and that healthcare personel were found to be the least negative consultation/information source. These results highlighted the need to educate school girls and parents about menarche and menstruation in schools by the health professionals. Education process should be direct, continuous and goal oriented.

In our study, some menstrual hygiene habits like selection of sanitary menstrual absorbent and its proper disposal were sufficient. Nearly all of the adolescent girls used sanitary pads during menstruation and more than half changed them 3 or 4 times a day. But some of their practices were unhygienic; which needed to be reinforced. While all of the girls bathed at the end of the menstruation, 90% bathed during menstruation. However; some of the girls-though a small number-used non-hygienic cloth or cotton pieces and did not shower during menstruation for the fear that it would increase or decrease bleeding or cause abdominal pain. Only half of the girls washed their hands before and after toilet (Table 3). But it is very important to be careful about the hygiene of genital area, hand and body, to use disposable protective products, to change them regularly in order to be protected from urinary-genital tract infections. Also, it was highlighted in some studies that taking a bath with

warm water in the early days of the menstrual period would not only lead to the development of positive mental and social behaviors, but also could be an effective method in reducing hygiene problems in the community.<sup>16</sup>

In the present study, dysmenorrhea was relatively common and only a small number of the girls consulted a physician for pain management. Similar to our findings, previous studies reported that prevalence of dysmenorrhea ranged from 51% to 80% and consultation rate was 6% to 14%.<sup>5,17-20</sup> Pain was often disregarded by many girls who considered it to be a normal part of the menstrual cycle. Thus, those who did not report their pain to physicians, sought a way for self-medication. In our study, especially mothers recommended home rest first and taking over the counter medications second as a solution to pain management. So taking over the counter medications without a physician’s advice was a serious problem for us.

## CONCLUSION

Menarche age was consistent with literature. Most of the girls received information about menarche before they menstruated. Families, friends/peers and teachers were the major information sources. The type of primary response towards menarche was more closely associated with whether they received information prior to the onset of menarche. Girls who used positive terms to describe menarche would tend to gain positive attitudes but the opposite is true for girls who used negative terms. Information process contributed to acquire positive attitude and healthy behaviour towards menstruation, but the rate of negative responders towards menarche was at a very serious level although they received information about it beforehand. Healthy behaviors related to menstrual hygiene were sufficient but the habit of washing hands before and after toilet was not enough. Self-medication over the counter for pain management was a serious problem. Many of the study groups would like to have information about menarche from healthcare personel just before it started. The fact that the students did not want to receive any

other information from their prior sources was an interesting finding.

## RECOMMENDATIONS

Negative attitudes may be related to the proficiency and accuracy of the information sources. Proficiency and appropriateness of the consultation source before menarche should be assessed. Informal consultation about menarche before it started enabled the schoolgirls to have positive attitudes and healthy behaviours towards menstruation but negative experiences and ideas from the information sources may be transferred to the girls. To wipe away old and wrong ideas, the adolescent girls and

their mothers should be educated through healthcare personnel just before menarche.

Consultation processes not designed with a planned, aimed and agreeable way for behavior change are mostly in a traditional way; just conveying it to whoever needed it. As mentioned by many of the sample group, it would be more suitable to provide consultation about menarche and menstruation just before menarche and by healthcare personnel. A formal or specific health education, also comprising training activities aiming the sources that may affect the target group would be the most important constituent of a standardized consultation process.

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