

Original Research Article

REPRODUCTIVE HEALTH ATTITUDES IN YOUTHS: A CROSS SECTIONAL COMPARISON BETWEEN STUDENTS FROM DIFFERENT HEALTH SCIENCE DEPARTMENTS

Comment [DK1]: Where??? Turkey?

ABSTRACT

This study aimed to determine attitudes towards reproductive health among young university students who were future healthcare professionals. This was a cross-sectional descriptive study. The research population consisted of 1126 individuals and the research sample was 1096. The study data were collected by using two forms “Information Form” and Reproductive Health Scale (RHS). The students’ mean age was 21.11±1.91. 78.6% of them were females, 75.5% of the students had information about reproductive health, 59.4% of them had obtained information through the mass media, and the female students were much better informed than the male students. The RHS mean score was 139.66±23.58 and 60.5% of the students obtained a score above the mean. Being female increased the scores for the sub-dimensions of Partner Selection and Values in Developing Preventive Behaviors. The results of this study show that the attitudes of the young people studying at the College of Health towards reproductive health were generally positive, but that they were not adequately reflected in their behaviors. Further research is needed to reveal why the knowledge and attitudes of the students did not lead to appropriate behaviors.

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Keywords: Adolescence, Sexual risk behavior, Reproductive Health Education, Students

26 1. INTRODUCTION

27 Reproductive health can be defined as follows: “Within the framework of the World
28 Health Organization’s (WHO) definition of health as a state of complete physical, mental and
29 social well-being, and not merely the absence of disease or infirmity, reproductive health
30 addresses the reproductive processes, functions and system at all stages of life” [1].

31 Traditional gender attitudes remain strong in many Asian and Middle Eastern
32 societies, such as Turkey. Premarital sex may be viewed as acceptable (or even be
33 encouraged) for men but can be stigmatizing for women [2]. The concepts of sexuality, and in
34 particular of virginity which is a taboo subject in Turkey because it cannot easily be
35 determined, are still important today and the latter plays an active role [3]. In Turkey, it has
36 been observed that pre-marital sexual relationships are not very common, but that in big cities
37 and college campuses there has been an increase in sexual relationships [4, 5].

38 It can be asserted that young people do not have correct and adequate information
39 about reproductive health, while those with a certain level of knowledge are not
40 knowledgeable enough [6, 7]. The major factors preventing young people from accessing
41 information and services related to the reproductive health can be listed as strict cultural
42 norms about sexuality, taboos, lack of knowledge, the low quality of the existing services,
43 lack of services to meet their needs and gender discrimination. These factors are greater
44 barriers for young people in less developed countries and developing countries like Turkey.

45 It is important that health workers be aware of sexual and reproductive health needs of
46 adolescents, know the effects of reproductive and gynecological problems occurring during
47 this period on reproductive health, do not reflect social prejudices back on to the adolescent,
48 and provide accurate inform to the adolescent in the appropriate manner [8]. Thus, it is greatly
49 important to know the attitudes of future healthcare professionals towards reproductive health
50 and sexuality. The aim of this study was to determine the attitudes towards reproductive
51 health of young university students who will be the healthcare professionals of in the future.

52 2. MATERIALS AND METHODS

53 This was a cross-sectional descriptive study. We determined the reproductive health
54 attitudes of healthcare students.

55 2.1. Participants

56 The participants consisted of the students at a College of Health found in the Aegean
57 Region (n=1226). The College of Health has three departments, which are Nursing (n=548),
58 Midwifery (n=300) and Physical Therapy and Rehabilitation (n=378). Data were collected

59 from 01 December 2011 to 30 January 2012. The objective of the study was explained; and
60 assurance was given that answers would remain confidential and the interview setting was
61 discussed. A total of 1096 students volunteered.

Comment [DK3]: and participated in the study???

62 2.2. Sample Size

63 All the students who agreed to take part in the study and could be reached made up the
64 sample (n=1096). There were 509 students from the Department of Nursing, 255 students
65 from the Department of Midwifery and 322 students from the Department of Physical
66 Therapy and Rehabilitation. Data were collected from the students who agreed to
67 participate in the study. The participation rate was 89.3% and the reliability level of the
68 sample was 0.96 ($\alpha=0,05$).

69 2.3. Questionnaires

Comment [DK4]: Study tools???

70 A Personal Information Form and the Reproductive Health Scale (RHS) were used to
71 collect data.

72 **Personal Information Form:** This form was prepared by the researchers according to the
73 literature and consisted of questions which aimed to determine socio-demographic
74 information about the students and their knowledge and behaviors regarding reproductive and
75 sexual health [6,7,8,9,11,13,14,20,21].

76 **Reproductive Health Scale (RHS):** This scale was developed in Turkish by Saydam et al.
77 (2010) to determine the attitudes of young adults towards reproductive health [9]. It is a 5-
78 point Likert type scale, with 34 items and six sub-dimensions: Partner Selection, Values in
79 Developing Preventive Behavior, Communication with Partner; Consultancy, Confidence and
80 Protection from STDs. The minimum score obtainable from the scale is 34 while the
81 maximum score is 170. The first 16 items of the scale are reversed in the calculation. A high
82 score implies that the individual has a positive attitude towards reproductive health. The
83 Cronbach's alpha coefficients of the scale were 0.88 for the whole scale, sub-dimensions
84 Cronbach's alpha coefficients were changing between 0.84 and 0.55 [9].

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85 However, in this study, the Cronbach's alpha coefficients of the scale were determined
86 with reliability analysis to be 0.93 for the whole scale, sub-dimensions Cronbach's alpha
87 coefficients were changing between 0.94 and 0.90.

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88 2.4. Data Collection

89 The purpose of the study was explained before data collection and the names of the
90 students were not recorded. The data collection tools were given to students and they were
91 asked to fill them in themselves in a classroom, approximately in 15-20 minutes.

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92 **2.5. Data Analysis**

93 In data analysis, number-percentage distributions, t test in independent groups, one way
94 Anova test in univariate analyses and advanced analysis were used in the SPSS 15.0 statistical
95 package program. The statistical significance level for confidence was taken to be 95%, and
96 for p values, 0.05.

97 **3. RESULTS**

98 It was found that mean age of students was 21.11 ± 1.91 , 78.6% of them were female, all
99 were unmarried, 34.7% of them were sophomores, 46.4% of them were studying in the
100 Department of Physical Therapy and Rehabilitation and 44.1% of them were living with a
101 friend (Table 1).

102 It was determined that 75.5% of the students stated that they had knowledge of
103 reproductive health, 59.4% of them had obtained information through mass media, 74.9% of
104 them had problems with their sexual organs, 71.4% of those with health problems related to
105 their sexual organs had seen a physician in relation to these problems, 20.9% of the students
106 were sexually active, but that only 25.3% of the sexually active students used a contraceptive
107 method at their first sexual intercourse (229 students answered this question). 80.0% of the
108 students referring to a contraception method preferred to use a condom and 29.7% of the
109 sexually active students used contraception in their subsequent sexual activities (Table 1).

110 The RHS mean score was found 139.66 ± 23.58 . Sub-dimensions mean scores are presented in
111 Table 2. 60.5% of all students received a score above mean score. Students have received the
112 lowest scores from Protection from STDs and Communication with Partner sub-dimensions.
113 Students in the Department of Midwifery had the highest score (69.8%), while students in the
114 Department of Physical Therapy and Rehabilitation had the lowest score from the scale.

115 There was a statistically significant difference between the mean score for the RHS and the
116 gender of students ($t=3.419$, $p<0.001$). Female students had higher scores than male students.
117 There was a statistically significant difference between the mean score for the RHS and the
118 educational level of the students ($F=3.580$, $p<0.05$). In advanced analysis, it was found that
119 the significant difference originated from fourth-year students. The mean score for the RHS
120 and student's place of residence has statistically significant difference ($F=5.694$, $p<0.05$). In
121 advanced analysis it was found that students staying in dormitories were accountable for the
122 difference (Table 3).

123 Students who had some knowledge about reproductive health had higher scores than
124 students who did not ($t=1.954$, $p<0.05$). Students who did not have any health problems with
125 their reproductive organs had higher scores than students with such problems ($t=3.509$,

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126 p<0.05). There was a statistically significant difference between the mean score for the RHS
127 according to seeing a physician for problems with the reproductive organs (F=3.509, p<0.05).
128 According to advanced analysis, students who saw a physician for problems with their
129 reproductive organs constituted the difference (Table 3).

130 There was a statistically significant difference between the mean score for the RHS and
131 being sexually active (F=3.270, p<0.05). Students who were not sexually active generated the
132 difference. The RHS mean score and using a contraceptive method during their first sexual
133 intercourse had statistically significant difference (F=4.591, p<0.05). According to advanced
134 analysis, there was a statistically significant difference between students who did not use
135 contraception during their first sexual intercourse and the others. The RHS mean score and
136 using contraception during subsequent sexual intercourse had statistically significant
137 difference (F=4.749, p<0.05). In terms of advanced analysis, the difference resulted from
138 students who did not use contraception during subsequent sexual intercourse (Table 3).

139 4. DISCUSSION

140 Reproductive health and sexual health are components of integrated healthcare. However,
141 reproductive health and sexual health dimensions are generally ignored when an individual's
142 state of health is assessed because healthcare professionals may not be sufficiently
143 knowledgeable, may have a negative attitude towards reproductive health, and because
144 sexuality is considered a taboo subject within a society [10, 11].

145 In this study, in which the attitudes of future healthcare professionals (to be??) towards
146 reproductive health were determined, the findings can be discussed under two main headings,
147 as follows:

148 4.1. Students' Knowledge and Behaviors in Relation to Reproductive Health

149 Three-quarters of the students participating in the research stated that they had obtained
150 information about reproductive health. This rate does not meet with what might be expected
151 from for future healthcare professionals (to be??) who have select a health-related profession
152 and could be expected to be more interested in health-related issues. The finding that only
153 one-third of the students who had obtained information received this information from their
154 college implies that informing students about reproductive health from their first year of study
155 may be beneficial. On the other hand, this finding also shows that the widespread social
156 taboos concerning sexual and reproductive health also prevail in the university life and affect
157 not only students but also instructors.

158 A majority of the knowledgeable students reported that they had obtained information
159 through the mass media. This finding is consistent with the findings of other studies on this

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160 topic [12, 13, 14, 15, 16, 17, 18, 19]. It is natural that young people would prefer mass media
161 as source of information for an issue considered as taboo in society despite arousing their
162 curiosity and interest. However, the possibility of obtaining incorrect and contradictory
163 information via the mass media poses a great problem. Therefore, accessible reproductive
164 health centers should be established and structured training programs should be organized to
165 enable young people to get their information from healthcare professionals.

Comment [DK8]: See DK7!

166 While the great majority of the students with knowledge about reproductive health were
167 female students (81.0%), the rate was rather low among male students (19.0%). This finding
168 is also consistent with other studies [20, 21, 22]. These findings may suggest that men are
169 much more affected by the taboos in a society.

Comment [DK9]: Do you have any evidence for this conclusion???

170 Two-thirds of the students stated that they had experienced a problem with their
171 reproductive organs. Evci (1997) and Pinar (2008) found that 25-30% and 44.6% of students
172 respectively had sexual problems [23, 24]. In light of these findings, the relevant percentage
173 in our study was high. This may have resulted from the “medical students’ syndrome”, which
174 is defined as a condition where medical students in particular start to perceive themselves or
175 others to be experiencing the symptoms of the disease(s) they are studying.

Comment [DK10]: Which are?? Is it a 'taboo' to name them???

Comment [DK11]: Different from reproductive organs problems!! Check!!

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176 It is a striking finding that one-third of the students experiencing problems with their
177 reproductive organs did not consult a physician. The fact that even the students studying at the
178 departments related to health do not see a physician for a health problem shows
179 that the problem is not simple and the existing services will not be effective if the
180 psychological, sociological and cultural dimensions of reproductive health are not considered.
181 Turkish society has a conservative structure in terms of sexuality and reproductive health [25,
182 26]. The attitudes of the healthcare professional, a lack of confidence in healthcare
183 institutions, economic difficulties and lack of health centers close to residential areas can also
184 be listed among the obstacles.

Comment [DK13]: Why striking, to whom and why???

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Comment [DK14]: No evidence from this study!!!

Comment [DK15]: So???

185 In the research, 20.9% of all students reported that they were sexually active. When
186 answers of students to the question related to sexual activity were examined, it was found
187 seen that a great majority of the female students left this question unanswered while 56.8% of
188 the male students expressed that they were sexually active. Different rates have been reported
189 in the other studies conducted on this topic so far. Akın and Özvarış (2003) reported that 2.3%
190 of female students and 12.8% of male students had some sexual experience [27]. Another
191 Turkish study (Aras, Orçin et al., 2004) focusing on 1314 undergraduate students in a single
192 university reported that 18.3% of female students and 61.2% of the male students had some

193 sexual experience [28]. Dinç and Dedeoğlu (1993) stated that 5.9% of female students and
194 46.5% of male students had some sexual experience, Evcili et al. (2013) found that 5.6% of
195 students had some sexual experience; Ungan and Yaman (2003) found the percentage to be
196 19%; Pinar (2008) found it to be 19.7%; Süt et al. (2015) reported it as 21.3%, while
197 Rathfisch et al. (2012) stated that 26%, Erenoğlu and Bayraktar (2017) found that 16.9% of
198 all students had some sexual experience [3, 19, 24, 27, 28, 29, 30, 31]. Relevant studies
199 conducted in Turkey indicate that girls are less sexually active than boys. This may result
200 from the common belief in Turkish society that girls should remain virgins until they get
201 married.

202 25.3% of the students stating that they were sexually active used contraception during their
203 first sexual intercourse. Using contraception during their first sexual intercourse is consistent
204 with the findings of other research [32, 33]. The most common contraceptive method used by
205 was a condom, with 47.8%. The findings of the studies conducted by Mogilevkina et al.
206 (2001), Ozan et al. (2004), Aras et al. (2004), Ajuwon et al. (2006), Gomes et al. (2008) and
207 Rathfisch et al. (2012) are in parallel with the findings of our study [14, 21, 28, 32, 33, 34].
208 The rate of using a contraceptive method during first sexual intercourse was rather low among
209 students. On the other hand, it should be noted that condoms provide an effective, practical
210 and cheap method and have become the most common form of protection from sexually
211 transmitted infections. The second most common method used by the students during their
212 first sexual experience was the withdrawal method. This result resembles the findings of
213 Mogilevkina et al. (2001), Aras et al. (2004) and Zuloaga, Soto and Vélez, (1995) [28, 32,
214 35].

215 The rate of using a contraceptive method during subsequent sexual activities was found to
216 be 29.7% among students. Süt et al. (2015) found that the rate of using a contraceptive
217 method (condom) was 18% [19]. According to Tigges' (2001) study more than half (53%) of
218 students had used condoms during the previous year. Students' rate of using a contraceptive
219 method during subsequent relationships was higher than during first sexual intercourse and
220 although this finding is positive, it is still a low rate and indicates a lack of knowledge [36].

221 4.2. Students' Attitudes towards Reproductive Health

222 When the students' total RHS scores are considered, it is seen that students received high
223 scores in all the sub-dimensions. This finding may imply that students displayed a positive
224 attitude towards reproductive health. The highest mean score was obtained by the students of
225 the Department of Midwifery. Students of the Department of Physical Therapy and

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Comment [DK16]: Self-reported than actual/observed.

Comment [DK17]: Meaning protection for safe sex??

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226 Rehabilitation had the lowest mean score as their curriculum did not contain topics
227 concerning reproductive health. Knowledge, beliefs and emotions work together in a systemic
228 and continuous way to form and shape and attitudes. This shows us the presence and
229 importance of the learning process in the formation of attitudes.

Comment [DK19]: See DK7.

230 Comparative analysis was performed to assess the effects of socio-demographic and other
231 characteristics of students on their reproductive health attitudes. While it was observed that
232 the variables displaying significant relationships with the highest number of sub-dimensions
233 were the department and not consulting a physician for problems with the reproductive
234 organs, these were followed by using a contraceptive method during first sexual intercourse,
235 place of residence, and having problems with the reproductive organs and sex.

236 Female students obtained higher scores from the RHS. Güçlü et al. (2015) found that
237 female student's sexual health knowledge levels were higher than those of male students [37].
238 Aslan et al. (2014) was found that female students knew more about the male and female
239 reproductive organs, sexually transmitted infections and family planning methods than male
240 students [38]. Gender discrimination and cultural norms prevailing in Turkey may have
241 resulted in sensitiveness among women in terms of partner selection and preventive behavior.

242 It was seen that as the students' years of study increased, so did their RHS mean scores
243 increased. Koluçak et al. (2010) found that 48.7% of first year and 62.9% of fourth year
244 students had a good level of sexual/reproductive health knowledge. Erenoglu and Bayraktar
245 (2017) noted that fourth year students had the highest scores from the Sexual Attitude Scale.
246 As the students progress through their years of study, their knowledge about reproductive
247 health increases as a result of it coming within the scope of their curriculum.

248 It was found that students living with their friends had a more negative attitude towards
249 reproductive health. It has been reported in studies that the knowledge of students living with
250 their friends are usually lower [14, 17, 22]. Other research has indicated that insufficient
251 knowledge affects attitudes negatively [11]. This information explains this result.

Comment [DK20]: How??

252 Students receiving information about reproductive health had a higher score than others.
253 Erenoğlu and Bayraktar (2017) pointed out students with knowledge about sex had positive
254 attitudes to sexuality. According to this result, providing information is very important in
255 improving positive sexual/reproductive health attitudes and behaviours. Sex education for
256 young people will contribute to the development of maturity, and skills such as improving
257 attitudes towards sexuality and making more rational and responsible choices [17, 31].

258 Students who had health problems with their reproductive organs had lower scores from
259 the total RHS. It can be stated that negative experiences and reproductive health problems
260 negatively affect reproductive health.

Comment [DK21]: Not clear!!

261 In the RHS it was found that students who did not consult a physician for problems with
262 their reproductive organs had more negative attitudes than students who did. Aslan et al.
263 (2014) stated that 83.7% of students had never used sexualhealth/reproductive health services
264 before [38]. Kolucaçık et al. (2010) reported that students wanted to “applications and the
265 spoken were confidential” and “women to serve women specialists, man to serve men
266 specialists” [17]. Situations like these may be attributed to the fact that students ignore their
267 problems, feel ashamed and embarrassed and are not knowledgeable enough about these
268 issues.

269 Students who were not sexually active had more positive attitudes than those who were.
270 This could be because students who are sexually inactive do not agree with casual sex and
271 that they live according to this idea and thus have a positive attitude towards reproductive
272 health.

Comment [DK22]: Not clear!!

273 It was found that students who used a contraceptive method during their first and
274 subsequent sexual intercourse had negative attitudes towards reproductive health. These
275 negative attitudes of sexually active students imply that they do not have enough knowledge
276 about reproductive health and do not care to use contraceptive methods.

Comment [DK23]: No evidence for this from this study!!

277 Our study has several limitations. Although the first intention was to conduct the study
278 throughout Turkey, it was carried out in a specific region due to financial and time
279 constraints. During the study, data were collected via personal statements. Despite the
280 similarities between the findings of the present study and results of the studies covering the
281 whole country, the results of this study only pertain to the region where it was carried out and
282 cannot be generalized to Turkey. Finally, the cross-sectional and descriptive design of the
283 study limits conclusions about causality for some findings.

284 5. CONCLUSIONS

285 It can be concluded that the attitudes of students of the Departments of Nursing,
286 Midwifery and Physical Therapy and Rehabilitation towards reproductive health were
287 generally positive but they were not reflected in the students’ behaviors. The fact that only
288 one-fifth of the students used a contraceptive method during sexual intercourse supports this
289 conclusion. Further research is needed to reveal why the knowledge and positive attitudes of
290 students towards reproductive health did not lead to appropriate behaviors. On the other hand,
291 the results of this research indicate that male students maintained traditional views, especially

292 in regard to selecting a partner. Further studies are needed to find out why men are more
293 affected by tradition.

294

295 **CONFLICT OF INTEREST**

296 All authors declare no conflict of interest.

297

298 **ETHICAL CONSIDERATION**

299 The participants were recruited to the study on a voluntary basis. Written permission
300 was obtained from Board of Scientific Ethics and from the institutions where the study **would**
301 **be conducted**. Before the data collection, the aim of the study, the benefits it would provide
302 and the length of time to be spent on the interviews was explained to the students and their
303 consent was obtained verbally. Permission was given for use RHS from Saydam developed
304 the scale.

305

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UNDER PEER REVIEW

Table 1: Personal Information of Students (n=1096)

Personal Information		N	%
Age average; 21.11±1.91 (Min: 18 Max:34)	18-19	208	19.0
	20-21	490	44.7
	22-23	285	26.0
	24 and over	113	10.3
Sex	Female	862	78.6
	Male	234	21.4
Department	Physical Therapy and Rehabilitation	509	46.4
	Nursing	255	23.3
	Midwifery	332	30.3
Grade	1. class	237	21.6
	2. class	381	34.7
	3. class	244	22.3
	4. class	234	21.4
Settlement	Dormitory	468	42.7
	With family	145	13.2
	With friends	483	44.1
Receiving Information about Reproductive Health	Yes	827	75.5
	No	269	24.5
Means of receiving information about reproductive health (n=827)	Mass Media	491	59.4
	School	266	32.1
	Family, Friend	56	6.8
	Healthcare Inst.	14	1.7
Having health problems with reproductive organs	Yes	821	74.9
	No	275	25.1
Resorting to a physician in face a problem in reproductive organs	Yes	783	71.4
	No	140	15.8
	Sometimes	173	12.8
Being sexually active	Unanswered	108	9.9
	Yes	229	20.9
	No	759	69.2
Using contraceptive method at the first sexual intercourse (n=229)*	Unanswered	28	12.2
	Yes	58	25.3
	No	143	62.5
Contraceptive method used at the first sexual intercourse (n=40)	Condom	32	80.0
	Withdrawal	8	20.0
Using contraceptive methods at the subsequent sexual activities (n=229)*	Unanswered	26	11.3
	Yes	68	29.7
	No	135	59.0
TOTAL		1096	100.0

427 *Calculated on sexually active ones.

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430 **Table 2: Distribution of University Students' Scores in the Reproductive Health Scale**
 431 **and Its Subdimensions**

RHS and Sudimensions	Item Number	Aver. + SD	Min.-Max scores
RHS Total Score	34	139.66±23.58	34.00–170.00
Partner Selection	4	17.98±3.89	4.00–20.00
Values in Developing Preventive Behavior	12	52.69±8.80	12.00–60.00
Communication with partner	6	22.83±7.17	6.00–30.00
Consultancy	5	19.14±6.29	5.00–25.00
Confidence	5	19.61±6.38	5.00–25.00
Protection from Sexually Transmitted Diseases	2	7.37±2.67	2.00-10.00

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UNDER PEER REVIEW

Table 3. Distribution of Reproductive Health Scale Mean Score and Affected Factors

Affected Factors	Reproductive Health Scale				
	n	\bar{X}	Ss	t\F	p
Sex					
Female	862	140.92	23.71	3.419*	0.000
Male	234	135.01	22.54		
Grade					
1. class	237	135.68	24.15	3.580**	0.014
2. class	381	139.52	21.94		
3. Class	244	141.32	24.05		
4. Class	234	142.19	24.67		
Settlement					
Dormitory	468	142.01	22.82	5.694**	0.003
With family	145	140.98	23.98		
With friend	483	136.99	23.96		
Receiving Information About Reproductive Health					
Yes	827	140.45	23.52	1.954*	0.051
No	269	137.22	23.64		
Having health problems with reproductive organs					
Yes	821	138.58	23.63	-2.621*	0.008
No	275	142.88	23.20		
Resorting to a physician in face a problem in reproductive organs					
Yes	783	140.84	23.24	3.509**	0.030
No	140	136.16	24.97		
Sometimes	173	137.16	23.65		
Being Sexually active					
Unanswered	108	135.11	24.38	3.270**	0.038
Yes	229	138.20	22.79		
No	759	140.75	23.63		
Using a contraceptive method at the first sexual intercourse (n=229)					
Unanswered	28	136.32	24.15	4.591**	0.010
Yes	58	138.18	24.23		
No	143	141.15	23.17		
Using a contraceptive method at the subsequent sexual intercourse (n=229)					
Unanswered	26	136.49	23.93	4.749**	0.009
Yes	68	137.24	23.84		
No	135	141.24	23.29		
TOTAL	1096	139.66	23.58		

*Student t Test; **One Way Anova Test

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