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ASSESSMENT OF AWARENESS LEVEL OF SENIOR ADOLESCENT GIRLS' ABOUT REPRODUCTIVE HEALTH

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Abstract

Introduction. Reproductive health in adolescence period is an great concern of health services. The susceptibility of this age period lays in significant physiological and social changes, which requires specific literacy among adolescents as a key point in maintaining and maintaining their reproductive health.

The **aim** of the study was to assess the degree of awareness of adolescent girls in reproductive health issues using the example of students of medical colleges in Nur-Sultan.

Materials and methods. A cross-sectional study was carried out by questioning the students of the Higher Medical College of the Akimat of Nur-Sultan, and the Medical College of the Republican Medical Academy of Nur-Sultan at the age of 15 to 18 years (376 respondents). Statistical analysis of the results included determining the statistical significance of differences between independent samples using Student's t test; correlation and regression analysis at a confidence level of 95%.

Results. A comprehensive understanding of the importance of reproductive health was established in 42% of the respondents, 8% had difficulty in clearly defining the term (75% of 15-year-olds and 36% of 16-year-olds). The respondents preferred the discussion of questions about reproductive health with medical workers (8 points out of 10), however, half of the respondents (47%) believe that it is worth seeking advice only when necessary. Among the negative factors, girls noted lack of personal hygiene (43.25%), sexually transmitted infections (25%) and early onset of sexual activity (16%). The girls rated the work of the youth health centers at 2.25 points (out of 10), the reasons for the low rating were misunderstanding of the purpose of the visit (86%), lack of privacy / large congregation of peers (82%), lack of trust (38%), insufficient information about the preparation to the proposed procedures (31%).

Conclusion. The study showed a relatively high (7.8 points out of 10) level of awareness among adolescent girls, however, the bulk of the sources are non-professional (parents, friends), which requires further development of youth health centers.

Key words: reproductive health, adolescents, awareness, trust.

Резюме

ОЦЕНКА ИНФОРМИРОВАННОСТИ ДЕВУШЕК СТАРШЕГО ПОДРОСТКОВОГО ВОЗРАСТА О РЕПРОДУКТИВНОМ ЗДОРОВЬЕ

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Актуальность. Охрана репродуктивного здоровья в подростковом возрасте является важной задачей системы здравоохранения. Уязвимость данного возрастного периода обусловлена значительными физиологическими и социальными изменениями, что делает грамотность самих подростков ключевым моментом в сохранение и поддержание их репродуктивного здоровья.

Целью проведенного исследования явилась оценка степени информированности девушек-подростков в вопросах репродуктивного здоровья на примере учащихся медицинских колледжей г. Нур-Султан.

Материалы и методы. Одномоментное кросс-секционное исследование проведено путем анкетирования обучающихся Высшего Медицинского Колледжа акимата г. Нур-Султан, и Медицинского колледжа Республиканской Медицинской Академии г. Нур-Султан в возрасте от 15 до 18 лет (376 респондентов). Статистический анализ результатов включал определение статистической значимости различий между независимыми выборками с использованием критерия Стьюдента; корреляционный и регрессионный анализ при уровне достоверности 95%.

Результаты. Достаточное понимание значения репродуктивного здоровья установлено у 42% опрошенных, у 8% четкое определение термина вызвало затруднение (75% 15-летних и 36% 16-летних). Обсуждение вопросов о репродуктивном здоровье респонденты предпочли с медицинским работникам (8 баллов из 10), однако половина респондентов (47%) считает, что обращаться за консультацией стоит только по мере необходимости. Среди негативных факторов девушки отметили несоблюдение личной гигиены (43,25%), инфекции, передающиеся половым путем (25%) и раннее начало половой жизни (16%). Работу молодежных центров здоровья девушки оценили на 2,25 балла (из 10), причинами низкой оценки названы непонимание цели визита (86%), отсутствие приватности/большое скопление сверстников (82%), отсутствие доверительного отношения (38%), недостаточное информирование о подготовке к предлагаемым процедурам (31%).

Заключение. Исследование показало относительно высокую (7,8 баллов из 10) степень информированности девушек-подростков, тем не менее, основная часть источников является непрофессиональной (родители, друзья), что требует дальнейшего развития службы молодежных центров здоровья.

Ключевые слова: репродуктивное здоровье, подростки, информированность, доверие.

Түйіндеме

РЕПРОДУКТИВТІ ДЕНСАУЛЫҚ ТУРАЛЫ ЖОҒАРЫ ЖАСӨСПІРІМ ҚЫЗДАРДЫҢ АҚПАРАТТЫҚ БАҒАЛАУЫ

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Сәйкестік. Жасөспірім кезіндегі репродуктивті денсаулықты сақтау денсаулықтың маңызды мәселесі болып табылады. Бұл жас кезеңінің осалдығы елеулі физиологиялық және әлеуметтік өзгерістерге байланысты, бұл жасөспірімдердің сауаттылығын олардың ұрпақты болу денсаулығын сақтау мен қолдаудың негізгі нүктесіне айналдырады.

Зерттеудің мақсаты – Нұр-Сұлтан қаласындағы медициналық колледж студенттерінің мысалында жасөспірім қыздардың репродуктивті денсаулық мәселелері бойынша хабардар болу деңгейін бағалау.

Материалдар мен тәсілдер. Нұр-Сұлтан қаласы әкімдігінің Жоғары медициналық колледжі мен Нұр-Сұлтан қаласы Республикалық медицина академиясының медициналық колледжінің 15 пен 18 жас аралығындағы студенттеріне сауалнама жүргізу арқылы бір реттік қима зерттеу жүргізілді (376 респондент). Нәтижелердің статистикалық талдауы Стьюденттің *t* тесті арқылы тәуелсіз таңдамалар арасындағы айырмашылықтардың статистикалық маңыздылығын анықтауды қамтиды; 95% сенімділік деңгейінде корреляциялық және регрессиялық талдау.

Нәтижелер. Респонденттердің 42% репродуктивті денсаулықтың маңыздылығын жеткілікті түрде түсінді, 8% терминді нақты анықтауда қиындықтарға тап болды (15 жастағылардың 75% және 16 жастағылардың 36%). Респонденттер репродуктивті денсаулық туралы сұрақтарды медицина қызметкерлерімен талқылауды жөн көрді (10 ұпайдан 8 ұпай), алайда респонденттердің жартысы (47%) тек қажет болған жағдайда ғана кеңес алу керек деп санайды. Жағымсыз факторлардың ішінде қыздар жеке гигиенаны сақтамауды (43,25%), жыныстық жолмен берілетін инфекцияларды (25%) және жыныстық белсенділіктің ерте басталуын (16%) атап өтті. Қыздар жастар денсаулық орталықтарының жұмысын 2,25 ұпаймен (10 ұпайдан) бағалады, төмен рейтингтің себептері келу мақсатын дұрыс түсінбеу (86%), жеке өмірдің болмауы / құрдастар қауымының көп болуы (82%), сенімсіздік (38%), ұсынылған рәсімдерге дайындық туралы ақпараттың жеткіліксіздігі (31%).

Қорытынды. Зерттеу жасөспірім қыздар арасында хабардарлықтың салыстырмалы түрде жоғары (10 ұпайдан 7,8 балл) деңгейін көрсетті, алайда, дереккөздердің негізгі бөлігі кәсіби емес (ата-аналар, достар) болып табылады, бұл жастар денсаулық орталықтарының қызметін одан әрі дамытуды талап етеді.

Негізгі сөздер: репродуктивті денсаулық, жасөспірімдер, хабардарлық, сенім.

Bibliographic citation:

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Introduction

Reproductive health considered as one of essential indicator of any society development, and defined by the World Health Organization (hereinafter WHO) as a state of complete physical, mental and social well-being to maintain reproductive health at all stages of life [19]. The model of reproduction safe behavior aimed at preserving and maintaining reproductive health is laid down in adolescence, when significant physiological and social changes occur in the body. The health status of this age group, including reproductive health, has a significant impact on the processes in society.

Disorders related to reproductive system occurred at this age are often coming as a cause of further serious reproductive disorders [22] [25]. The Bureau of National Statistics of the Republic of Kazakhstan for 2020, says the number of adolescents is 1.56 million (9.7% of the population), of which 52% are boys, 48% are girls [2]. According to report of the World Population Fund in Kazakhstan, about 30% of adolescents aged 15-19 are sexually active, the adolescent delivery rate is 23.2 per 1000 given birth women, and the abortion rate is about 1.3 thousand per year, or 38% of the total number of pregnant girls 15-18 years old. Also, 14.8% of sexually active adolescents signs with sexually transmitted infections (STI), and more than half of them (62.6%) did not go to medical specialists, but were treated on their own [10]. The data in the prevalence of pelvic inflammatory disease in adolescent girls is not sufficiently completed in local healthcare bases, however, the world incidence rate of salpingo-oophoritis in adolescents ranges from 24% to 38% of the total number of patients [3] [4] [5]. In 2018, the Ministry of Health of the Republic of Kazakhstan (MHRK) enlarged the primary care facilities with youth health centers (MHC), which are to provide medical services to adolescents, conduct educational work and provide psychological assistance [6].

The aim of the study is to assess the level of awareness of senior adolescent girls in reproductive health issues using the example of students of medical colleges in Nur-Sultan.

Materials and methods. A cross-sectional study was carried out by questioning girls aged 15 to 18 years. Recruitment preceded with information letters sent to the following educational institutions: four secondary schools of the Akimat of Nur-Sultan, the Higher College of Astana Polytechnics, the Higher Medical College of the Akimat of Nur-Sultan and the Medical College of the Republican

Medical Academy of Nur-Sultan. The informed consent was obtained from the administration and legal representatives of girls-students of the Higher Medical College of the Akimat of Nur-Sultan and the Medical College of the Republican Medical Academy of Nur-Sultan. The questionnaire was developed in accordance with the WHO recommendations for the tool for determining awareness of reproductive health (RH) [19], reviewed and approved then for use in the study at a meeting of the Ethics Committee of the Astana Medical University (Protocol No. 1 dated 04/12/2021). The questionnaire implied self-completion by adolescents, compiled in Russian and Kazakh languages. The survey was conducted remotely, on the Google Forms platform, 434 female students took part, and all the questionnaires were filled out correctly. The questionnaires of participants over 18 years old (n = 58) were excluded. Overall, we examined the results of 376 questionnaires (270 - in Russian, 106 - in Kazakh).

The first block of questionnaire contains the passport part filled in by the parents or official representatives with a clause indicating their consent or disagreement to the questionnaire survey of an adolescent girl.

The second block contained 2 questions on age and ethnicity; 3 closed questions with options for determining RH, frequency of visits to medical specialists, awareness of the work of youth health centers; then 6 Likert scale questions (from 1 to 10) [19], to assess main sources related to RH, and awareness of negative factors affected RH [1] [23]. Negative factors list founded in accordance with clinical protocols for the following nosologies: N70.1-Salpingo-oophoritis [7], N97-Female infertility [8], D27 - Benign ovarian neoplasm [9]. The scale of answers was calculated on 10 divisions, where 1 and 10 meant, very low and very high value respectively.

Descriptive statistics were carried out for a qualitative analysis of the survey results using Microsoft Excel software. The quantitative analysis was carried out using the STATA / SE 16.1 software; and contained the use of t-test for independent samples for the statistical significance of the differences; ANOVA for the effect of a qualitative variable (age of participants) on a quantitative variable (points on a scale); correlation and regression analysis at a confidence level of 95%.

Results

The survey covered 376 respondents with the mean age 16.9 ± 1.19 years, the majority of the participants were 18 years old (73%). Ethnic groups were represented by

Kazakh 334 (89%), Russian 27 (7%), Ukrainian 9 (2%) and Korean 5 (1%) nationalities.

The analysis showed that 42% of participants have the comprehensive understanding of the value of RH, covering all items related to the reproductive system at all stages of life, 33% see the importance of RH in the ability to give

birth, and less than one fifth consider RH from the perspective of a safe sex life. 8% of all respondents confused with a precise definition of reproductive health. By ethnicity, the girls gave the definition of RH as follows (Figure 1).

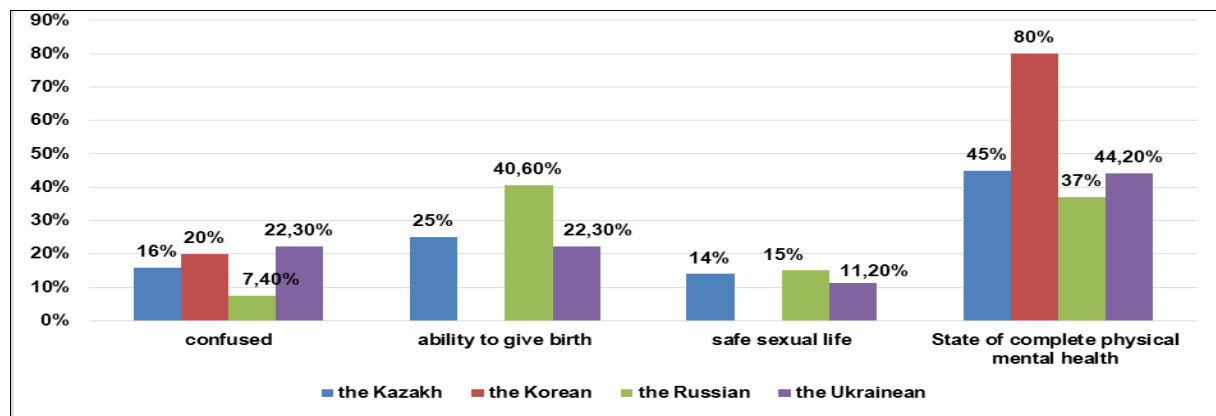


Figure 1. Definition of RH with respect to ethnicity.

Most girls of all ethnic groups attributed RH as a state of well-being associated with reproductive function indicating a sufficient level of understanding of the importance of preserving and strengthening RH. The difference in the answers depending on the ethnic group was statistically

insignificant ($z = 0.89$ $p = 0.39$), so the nationality of the girls does not affect RH understanding.

Responses by definition of RH with respect to age were varied (Table 1).

Table 1.

Basic concepts of RH with respect to age of respondents.

	15 year old	16 year old	17 year old	18 year old
Giving definition to Reproductive Health				
Confused	(3)75%	(18)36%	(15)11%	(22)12%
Ability to give birth		(8)14%	(28)21%	(60)32%
Safe sexual life		(8)14%	(23)18%	(21)11%
State of complete physical and mental health related to RH	(1)25%	(18)36%	(66)50%	(84)45%
Reproductive health check-up frequency				
One time in six months		(2)4%	(24)18%	(38)20%
Once a year		(9)17%	(26)20%	(42)22%
One time in three years			(4)3%	(1)5%
On need	(4)100%	(36)69%	(62)47%	(81)42%
Do not think it is necessary		(5)10%	(16)12%	(25)11%
The factors affecting RH disorders:				
Sexually transmitted infections		(14)27%	(61)46%	(50)27%
Insufficient compliance with personal hygiene	(2)50%	(25)48%	(36)28%	(87)47%
Early onset of sexual activity	(2)50%	(3)6%	(5)4%	(8)4%
Abstinence			(3)2%	(4)2%
Endocrine system disorders		(3)6%	(3)2%	(8)4%
Cannot name any negative factor		(7)13%	(24)18%	(30)16%

Respondents confused with definition of RH are mainly of girls aged 15 and 16 (75% and 36%, respectively), compared with 11% and 12% among girls aged 17 and 18, respectively. Also, elder girls have a more complete definition of RH - 50% and 45% for 17-year-olds and 18-year-olds, respectively. There were statistical significance of differences in the definition of RH ($z = 2.41$ $p = 0.05$) with respect to the age of girls.

The frequency of medical examination for RH (Table 1), the majority (47%) answered that they visit specialists as needed. The importance of regular examination every six months and once a year was noted by 17.3% and 20% of

girls, respectively. 12% of respondents do not see any need for RH check-ups. By age groups, all 15 years girls (100%) indicated visit to medical professional in case of need only, as well as 69% of 16-year-old girls. One-fifth of girls over 15 years old (17%, 20% and 20% respectively) undergo regular annual check-ups.

The girls distributed the factors affecting of RH disorders in the following way: hygiene rules non-compliance (41%), sexually transmitted infections (34%), at the same time, 17% of the respondents found the question hard. Fewer (5% and 2%) girls associate with sexual activity - active and passive, respectively. Endocrine system

disorders considered as a potential cause of RH issues by 1% out of the total number of respondents only. The analysis of responses by age had a similar distribution (Table 1).

Survey noted the degree of trust in a certain category of people in discussing RH problems on a 10-point scale (Figure 2). The greatest trust among girls is evoked by professional specialists - medical and social workers and psychologists (≈8

points); also, girls are ready to share potential problems with their parents (≈6.4 points). Brothers and sisters, as well as friends, evoke an average degree of trust (≈5.15 and ≈4.74 points, respectively). Least of all adolescents would like to discuss RH problems with strangers (≈2.69 points).

We carried out a regression analysis to determine the change in the degree of trust for each category of people while adolescents growing up (Table 2).

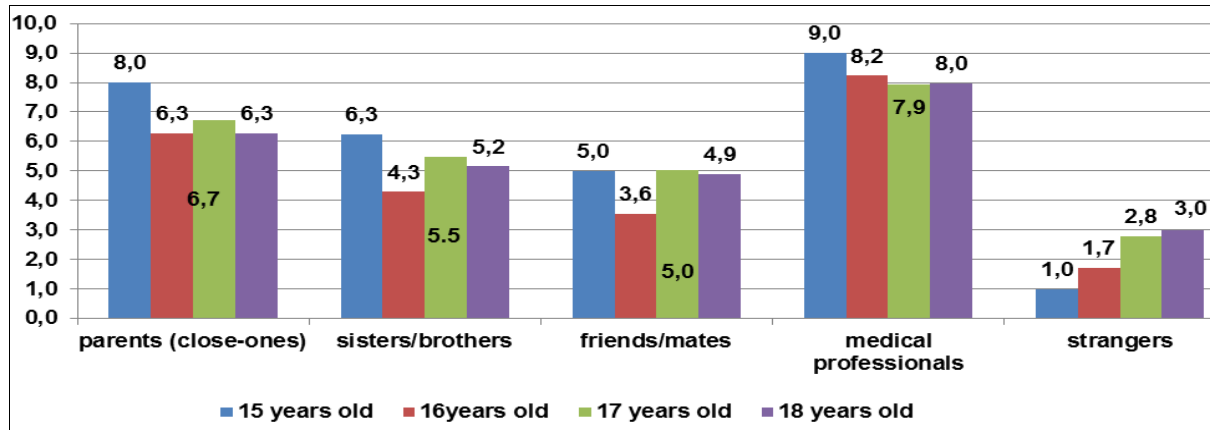


Figure 2. Degree of trust in discussion RH issues with respect to age of participants.

Table 2.

Regression analysis of the degree of trust depending on age.

	Parents (close-ones)	Sisters-brothers	Friends-mates	Medical professionals	Strangers
15 years old	8.0	6.3	5.0	9.0	1.0
16 years old	6.3	4.3	3.6	8.2	1.7
17 years old	6.7	5.5	5.0	7.9	2.8
18 years old	6.3	5.2	4.9	8.0	3.0
Regression coefficient	-0.5	-0.2	0.2	0.1	0.70
p-value	0.25	0.80	0.42	0.66	0.03

The difference in the degree of trust in professional specialists, relatives and friends was statistically insignificant with respect to age of the girls (p-value > 0.05) at a confidence level of 95%. At the same time, statistical significance is present in the change in the degree of trust in strangers with increasing age of girls (p-value = 0.03). The regression coefficient was 0.7, that is, getting 1 year older, the degree of trust in strangers (not professionals) increases by 0.7 points.

Among the listed factors that can cause RH disorders, girls more emphasized early onset of sexual activity (8.5 points). The degree of impact of other factors was also defined as high (7.4-7.7 points). The distribution of points in assessing harmful factors by age is shown in Figure 3, which reflects the equal distribution of the degree of influence of factors in the opinion of the respondents.

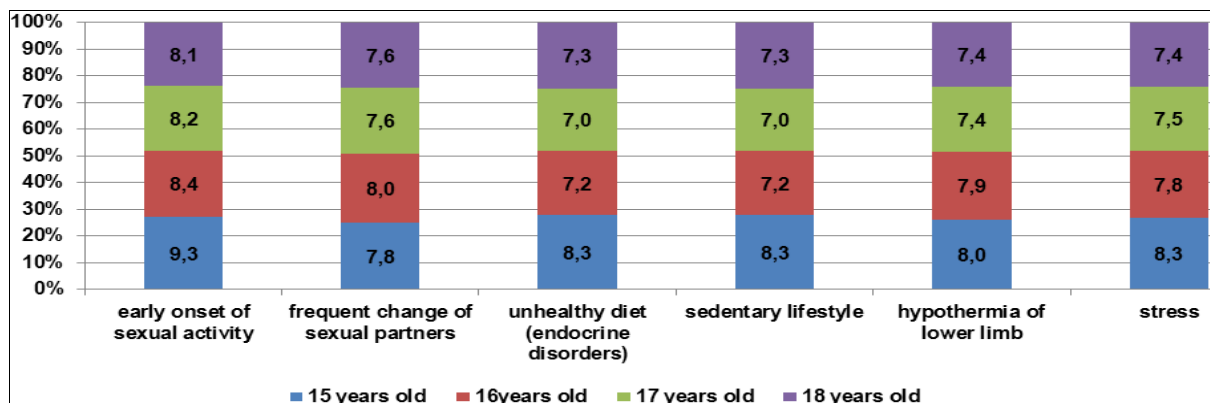


Figure 3. Assessment of factors affecting RH disorders.

Regression analysis conducted did not reveal the differences in the responses of girls with respect to age (p > 0.05), indicating the equal level of understanding of

potential harm from these factors by adolescent girls. The girls assessed their general awareness of RH issues as follows (Figure 4).

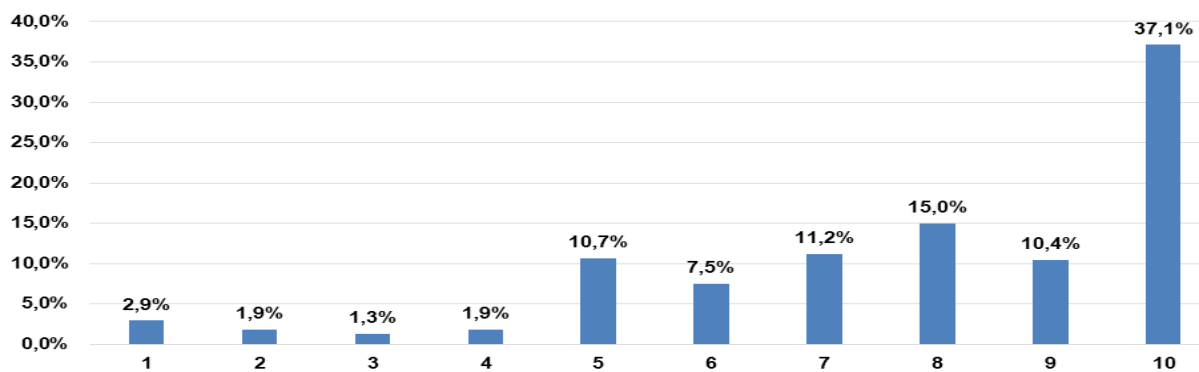


Figure 4. Assessment of general awareness of RH issues

On average, girls rated their general awareness of the preservation and maintaining of RH at 7.8 points. Half of the respondents (37.1% and 10.4%) believe that they are fully informed (10-9 points, respectively), from 6 to 8 points - 33.7% of girls, and subjectively consider themselves insufficiently informed 18.7% (from 1 to 5 points) (Figure 4).

The question about the source of information showed that the greatest confidence among adolescents belongs parents experience, medical professionals recommendations and the life experience of other people (7.2 points, 7.5 points and 8.8 points, respectively) (Figure 5).

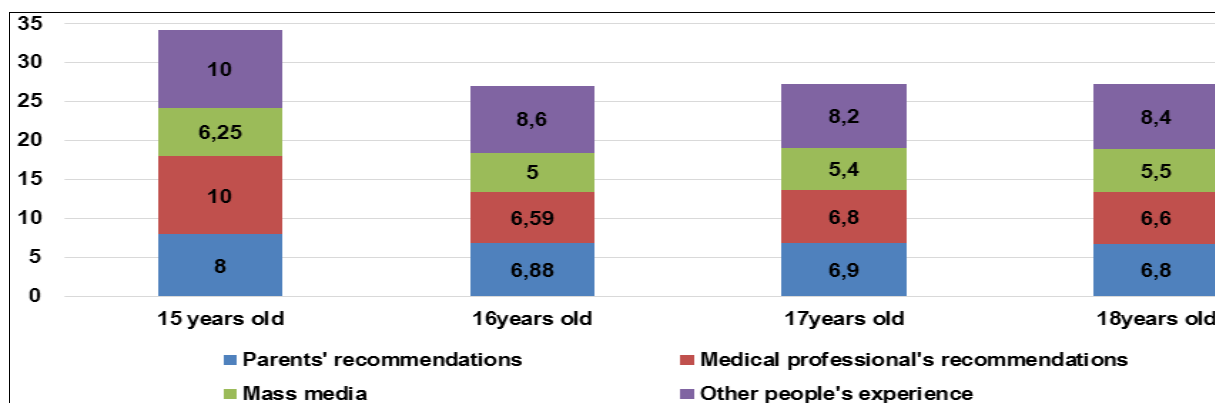


Figure 5. Degree of trust to information source on RH.

Survey revealed that other people's experience (not specialists) in treating RH disorders are highly trusted by adolescents. The analysis of variance carried out showed the significance of differences in the assessment of information sources ($p = 0.00$). Regression analysis did not reveal any differences in responses depending on the age of the girls.

To assess the awareness about health care facilities responsible for adolescents RH, we include the questions about Youth Health centers. It revealed 70% of girls (262 respondents) are aware of the fact that primary health care organizations (hereinafter PHC) are open, 70% of girls (262 respondents), of which 24% received an invitation to visit the center (62 teenagers). Distribution by age is shown on Figure 6.

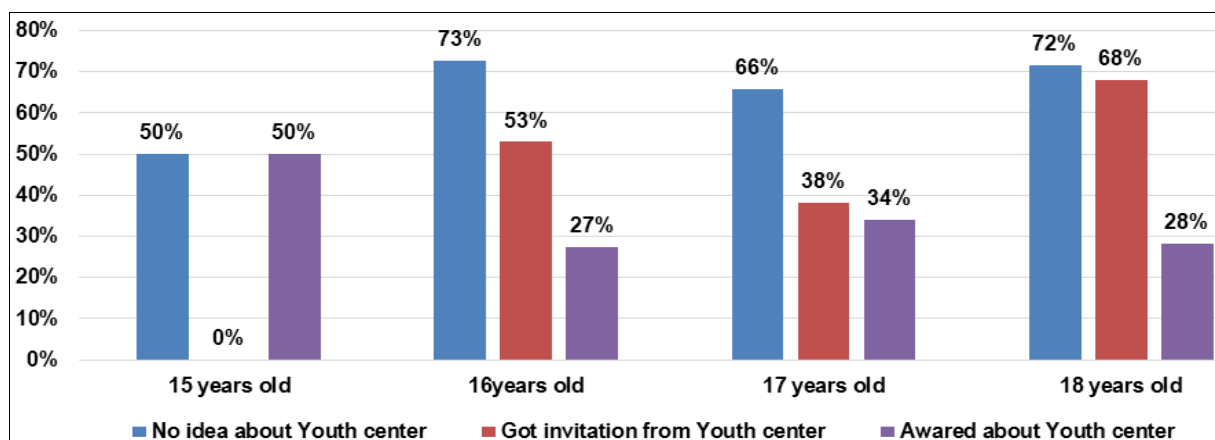


Figure 6. Awareness about Youth Center functioning.

The survey resulted that adolescents receive invitations to visit the Youth center from 16 year (0% among 15 year and 53% among 16 year), however, about a third of girls do

not know that centers for professional RH support even exist (31,2%). The impression after visiting Youth center the girls expressed in the following (Figure 7).

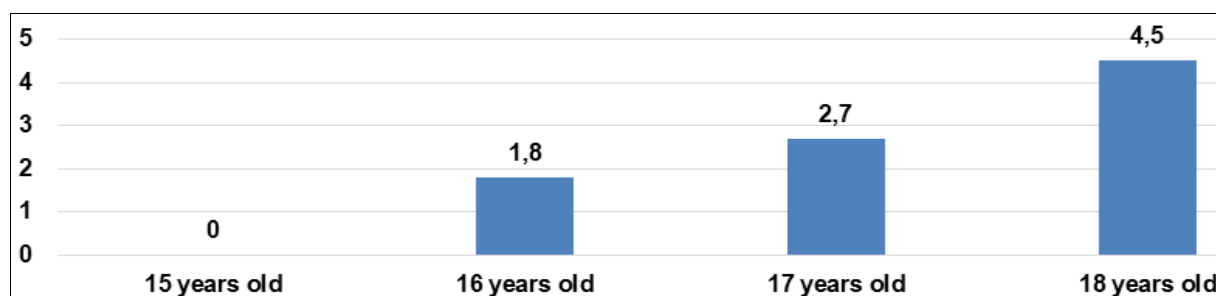


Figure 7. Degree of satisfaction on visiting Youth center.

Adolescents visited the Youth center indicated the degree of satisfaction as 2.25 out of 10. The main reasons for low satisfaction were: lack of clarification about the purpose of the visit / no information in invitation letter (86%), lack of privacy / center crowded with other young people (82%), lack of confidential attitude (38%), insufficient information about preparation for the proposed procedures - examination by a gynecologist, ultrasound examination (31%).

Discussion

The study assessed the awareness of adolescent girls on general and specific RH issues, as well as their awareness of RH services provided by the state. The importance for adolescents of being literated was demonstrated in the works of Pourkazemi (2020), George AS (2020), where the lack knowledge about RH was more than half, and in 87% - 89% appeared as the cause of adverse events, such as early pregnancy and abortion [15] [21]. Also Geranmayeh M. (2020) and George A.S. (2021) determined that the lack of information was 67% -58%, and there was a strong direct correlation with chronic pelvic inflammatory diseases and infertility [16] [15]. In our study, confusion and unawareness in defining RH was found in 25%, in the younger group of respondents (15 and 16 years old), the remaining 75% showed a sufficient understanding of the value of RH and the reasons for its violation. According to Badu E. (2019), Kim M. (2005), Deshmukh D. (2020), adolescents get the very first information about RH from peers (87%), elder children in the family (80%), strangers (51%) [12] [17] [13]. In our study, a positive point is that adolescents gave priority to trust in professional workers (8 points out of 10), parents and elders in the family (6.4 and 5.15, respectively). Fewer adolescents discuss RH issues with strangers, however, the fact that getting elderly girls start to consult with strangers (regression coefficient 0.7 at $p = 0.03$) should cause the trouble among authorities. By researches of Siddiqui M. (2020), Alomair N. (2020), teaching and observation of adolescents in special medical centers is directly related to the revealing of early disorders of RH, the detection of inflammatory diseases of the reproductive organs and early pregnancy [24] [11] [20] [18]. According to Diniz (2020), both adolescents (81.1%) and their families - parents (88.1%) noted the need for a special institution for the protection of RH and expressed a desire to visit it [14]. Our research has shown that Youth health centers are not popular enough among adolescents (more than 30% do not know about its existence), and most girls believe that visiting a specialist should only be as needed (69% -100%). At the same time, satisfaction from visiting remains low, especially among the younger group of 16-year-old respondents - 1.8 points out of 10, which may

indicate that younger adolescents are not ready to trust medical specialists.

Conclusion

Adolescence considerably founded as essential due to the increasing hormonal impact and susceptibility of the reproductive system during this time. Lack of information leads to unsafe sexual behavior, which turns to impaired reproductive functions in adulthood. The study showed a satisfactory level of awareness of RH among female medical college students aged 17-18 years, while the level of awareness among adolescents 15-16 years old remains insufficient. It has been found that adolescents have an incomplete understanding of the meaning of RH and tend to trust strangers rather than professionals. The establishment of youth health centers aims to ensure access to quality health care for young people and is an important aspect of their reproductive education. In our study, the level of satisfaction of adolescents from visiting the Youth health centers is set as low (2-3 points), which indicates the need to popularize the Youth health centers and the services they provide among adolescents and young people.

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Authors' Contribution: All authors contributed equally to the writing of the article.

Khassenova M.N. – idea of research; survey development; ethical committee approval; data collection;

Khamidullina Z.G., Abdrashidova S., Kokisheva G.A., Isayeva E.I., Tursunbekova Zh.U. – survey development; data collection; qualitative analysis and interpretation of results;

Mukasheva K.M., Markhanova N.T., Aldabekova G.U. – survey development; data collection; qualitative analysis and interpretation of results; literature review;

Aketayeva A.S. - idea and administrative support of research; interpretation of results;

Khassenova A.Zh. - quantitative analysis, formulation of outcomes and conclusion.

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