Exploring Women's Perspectives on Oral Contraceptives: The Role of Pharmacists in Shaping Attitudes

Muhammed Yunus Bektay[1], Pınar Nur Demirci[1], Muhammed Atak[2]

[1]Bezmialem Vakif University, Faculty of Pharmacy, Department of Clinical Pharmacy, Istanbul, Türkiye
[2]Istanbul University, Faculty of Medicine, Department of Public Health, Istanbul, Türkiye

Adres for Correspodence: Department of Clinical Pharmacy, Faculty of Pharmacy, Bezmialem Vakif University, 34093, Istanbul, Türkiye
e-mail: yunusbektay@gmail.com

Orcid ID: MYB: 0000-0003-2032-9957 MA: 0000-0002-8545-3660
PND: 0009-0001-3982-589X

Cite As: Bektay MY, Demirci PN, Atak M. Exploring Women's Perspectives on Oral Contraceptives: The Role of Pharmacists in Shaping Attitudes. Hitit Med J 2023;5(3): 195-201. https://doi.org/ 10.52827/hititmedj.1345245

Abstract

Objective: Over the past two decades, oral contraceptives have emerged as the predominant choice for contraception globally. This study explores women's knowledge, attitudes, and behaviors regarding oral contraceptives and the pharmacist's possible role.

Material and Method: From November 2020 to January 2021, we conducted a cross-sectional observational study in Turkey. To assess the women's knowledge attitudes and knowledge level about oral contraceptives, we developed an online questionnaire utilizing Google Forms. The data were gathered through an exponential non-discriminative snowball sampling method. The reliability of the questionnaire was measured by Cronbach α value. The data obtained from the participants were statistically analyzed using principal component factor analysis and chi-square test.

Results: This study involved 140 participants, with a mean age of 32.31±14.21. Most participants (77, 55%) reported being single. Among the participants, a notable majority (93, 66.4%) were not utilizing any contraceptive methods, and a statistically significant discrepancy was observed between the married and single women ($p<0.001$, $\chi^2=21.968$). Nearly half of the participants (75, 53.6%) indicated lack of usage of any contraception methods. According to our findings, a substantial portion (76, 54.3%) of participants gathered information about oral contraceptives from sources with lower reliability, including sources like television, Internet, social media, friends, and relatives.

Conclusion: The knowledge and attitudes regarding oral contraceptives among different age groups within the Turkish population are not at the desired level. The involvement of community pharmacists, who serve as accessible healthcare professionals, educating women about contraception and family planning, would yield favorable results.

Keywords: Contraception, Family planning, Oral contraceptives, Pharmaceutical care, Pharmacist.

Özet

Amaç: Son yirmi yılda, oral kontraseptifler tüm dünyada doğum kontrolü için sık tercih edilen seçenek olarak kullanılmaktadır. Bu çalışmanın amacı, kadınların oral kontraseptiflere ilişkin bilgi, tutum ve davranışlarını ve eczacının olası rolünü araştırmaktır.

Gereç ve Yöntem: Kasım 2020-Ocak 2021 tarihleri arasında Türkiye'de kesitsel gözlemsel bir çalışma yürütülmüştür. Kadınların oral kontraseptifler hakkındaki bilgi, tutumlarını ve bilgi düzeylerini değerlendirmek için Google Forms kullanarak çevrimiçi bir anket uygulanmıştır. Veriler, ayrımcı olmayan kartopu örnekleme yöntemiyle toplanmıştır. Anket güvenilirliği Cronbach α değeriyle ölçülmüştür. Katılımcılardan elde edilen veriler faktör analizi ve ki-kare testiyle istatistiksel olarak analiz edilmiştir.

Bulgular: Bu çalışmada yaş ortalaması 32,31±14,21 olan 140 katılımcı yer almıştır. Katılımcıların büyük bir kısmı (77, %55) bekâr olduğunu bildirmiştir. Katılımcıların önemli bir çoğunluğu (93, %66,4) herhangi bir kontraseptif yöntem kullanmamaktadır. Evli ve bekar kadınların doğum kontrol yöntemi kullanımları istatistiksel olarak anlamlı düzeyde farklı bulunmuştur ($p<0,001$, $\chi^2=21,968$). Katılımcıların yaklaşık yarısı (75, %53,6) şimdiye kadar herhangi bir doğum kontrol yöntemi kullanmadığını belirtmiştir. Bulgularımıza göre, katılımcıların önemli bir kısmı (76, %54,3) oral kontraseptifler hakkında bilgiyi televizyon, internet, sosyal medya, arkadaşlar ve akrabalar gibi güvenilirliği düşük kabul edilen kaynaklardan edinmiştir.

Sonuç: Türk toplumunda farklı yaş gruplarında oral kontraseptiflere ilişkin bilgi ve tutumların istenen düzeyde olmadığı aşikardır. Erişilebilir bir sağlık profesyoneli olarak hizmet veren toplum eczacılarının, kadınları doğum kontrolü ve aile planlaması konusunda eğitmesi olumlu sonuçlar verecektir.

Anahtar Sözcükler: Aile planlaması, Eczacı, Farmasötik bakım, Kontraseptif yöntemler, Oral kontraseptif

Date of Submission: 18.08.2023
Date of Acceptance: 03.10.2023
Date of Publication: 10.10.2023

Peer Review: Evaluated by independent reviewers working in the at least two different institutions appointed by the field editor.
Ethical Statement: The study has been approved by the Bezmialem Vakif University local Ethics Committee with decision number 19/377.
Plagiarism Checks: Yes - iThenticate
Conflict of Interest: No conflict of interest has been declared by the authors.
Complaints: hmj@hitit.edu.tr
Authorship Contribution: Idea/Hypothesis: MYB Design: MYB, PND Data Collection/Data Processing: MYB, PND Data Analysis: MYB Article Preparation: MYB, PND, MA
Informed Consent: An electronically signed informed consent was obtained from all individual participants included in the study.
Financial Disclosure: The authors declared that this study has received no financial support.

Introduction

Each year, significant number of women, approximately 80 million, encounter undesired or unplanned pregnancies (1). This leads to around 45 million pregnancies being terminated, with 19 million terminations occurring under unsafe conditions. Notably, 40 percent of these terminations involve women under the age of 25, and tragically, approximately 68,000 women lose their lives due to unsafe abortion practices. In pursuing national development objectives, bolstering and maintaining women's empowerment is a crucial endeavor (1, 2). This empowerment is pivotal for enabling women to fulfill their responsibilities and practices for their fundamental human rights. Empirical evidence points out the association between women's status, empowerment, and critical reproductive outcomes. Notably, enhanced women's status and empowerment correlate with extended birth intervals, reduced rates of unintended pregnancies, and a lower fertility rate. Consequently, ensuring that women and their families have accurate and comprehensive family planning information improves quality of life and community well-being (2, 3).

Family planning initiatives have played a pivotal role in offering women access to contemporary contraceptive methods. These resources empower women to align their fertility preferences effectively, prevent unintended pregnancies, and mitigate potential complications associated with such pregnancies (1–4). Nowadays, family planning has become an integral component of comprehensive women's health initiatives and programs focused on ensuring safe motherhood. Family planning encompasses a range of practices that empower individuals to safeguard themselves against undesired pregnancies, manage the timing between successive pregnancies, exercise control over the number of children they have, and facilitate parenthood for those who have not yet experienced it (4, 5). The utilization of family planning methods has significant implications for advancing the well-being of women, children, and society. By curbing excessive fertility rates that have adverse repercussions on the health of mothers and infants, family planning methods play a pivotal role in safeguarding and enhancing women's and children's health. This, in turn, contributes to the overall health and vitality of the community (2, 4–7).

There are two methods of family planning: modern and traditional. Traditional methods have been used for many years, mostly in less developed countries. Modern methods, on the other hand, are the methods that are being used more frequently day by day with the development of technology. The use of modern contraceptive methods use by women varies according to their sociodemographic characteristics. According to Turkey Demographic and Health Survey (TDHS) 2018 data, the rate of modern contraceptive use among married women in the 15-49 age group is 49% (2). While modern method use is 52.6% in the 40-44 age group, it decreases to 37.4% in the 45-49 age group (2). It is observed that the use of modern methods is higher among women who live in urban areas and have a higher level of education and welfare (2).

Oral contraceptives (OCs) have become the most common contraceptive method in many countries in the last 20 years. In order to reduce the side effects and risks of OCs, the amounts of estrogen and progesterone derivatives contained have been reduced, and new progesterone derivatives have been developed. Thus, OCs have become a safe method since their beneficial effects outweigh their side effects and problems. Today, in developed countries, approximately 24 million married women, or in other words, 14 percent of married women of childbearing age, use oral contraceptives. In developing countries, about 38 million married women (about 6 percent of women of childbearing age) use the OCs pill (6, 7).

The fact that health services that patients receive from pharmacies are more easily accessible and trustworthy positions pharmacists in an important role as health service providers (8). Community pharmacist are valued healthcare team members trained to provide medication therapy management and a range of healthcare and prevention activities. Pharmacists' services could fill the gap in the family planning. Different studies have investigated the role of pharmacists in contraception, and the pharmacist's patient counseling and audit were found beneficial in many aspects (9–13).

The aim of our study is to investigate the possible benefits of the pharmacist by analyzing the level of knowledge, attitudes, and behaviors of women applying to a community pharmacy about OCs.

Material and Method

From November 2020 to January 2021, a cross-sectional observational study was conducted in Turkey with the participation of women. The participants were selected based on their voluntary participation. The research protocol obtained ethical approval from the Bezmialem Vakif University local Ethics Committee (decision number 19/377). The exponential non-discriminative snowball sampling method was employed to recruit participants, and the study adhered to the reporting standards outlined by the CROSS (A Consensus-Based Checklist for Reporting of Survey Studies) guidelines (14).

The Raosoft sample size calculator software was utilized to determine the sample size. The target population for this study comprised Turkish women residing in Turkey, with an anticipated response rate of around 50%. Under these conditions and considering a 95% confidence interval and 5% margin of error, the calculated minimum sample size required to achieve with a Type 1 error (α) of 5% and a Type II error (β) of 80% was 105 participants. When accounting for a 15% non-response rate across the total sample, the necessary sample size was adjusted to 122 participants (15, 16).

2.2. Questionnaire, Survey Distribution, and Data Collection

To examine women's knowledge, attitudes, and behaviors concerning oral contraceptive (OC) medicines, an online questionnaire was developed using Google Forms. The questionnaire was disseminated through diverse communication channels, including email, direct messages, and social media platforms, accompanied by study details. Respondents were encouraged to share the survey link within their social circles to promote broader participation. The questionnaire consisted of four sections encompassing demographics, OCs' knowledge and behavior, information sources, and trust related to OCs, with 52 items. Respondents provided an electronic consent before participation and a

hyperlink of the consent form was embedded in the online survey for individual reference.

The questionnaire was designed based on existing literature and incorporated with dichotomous and five-point Likert scale items (ranging from 1 Strongly Disagree to 5 Strongly Agree). The main dependent variable was marital status (married or single), assessed through a dichotomous item. The study encompassed multiple independent variables exploring knowledge level, attitude, trust, and information sources concerning OCs.

A panel of three experts provided insights into the survey's language, structure and design, leading to revisions in accordance with their recommendations. Additionally, the questionnaire underwent pre-testing with two individuals experienced in behavior change education. This evaluation involved retrospective cognitive interviews to assess content, format, and wording structure of the questionnaire. A pilot study involving ten participants which were not included in the initial evaluation provided valuable feedback, contributing to improved clarity and comprehensibility.

Following this, a separate group of twelve participants, distinct from the original dataset, completed the questionnaire over two weeks. Survey completion time ranged between 10 to 15 minutes. To assess test-retest reliability, a subset of 12 participants underwent evaluation using the Spearman's rank correlation coefficient, Wilcoxon test, and intraclass correlation coefficient (ICC). The results revealed an insignificantly low correlation of 0.493 ($p>0.05$) and an ICC of 0.872 (95% CI: 0.837-0.903, F: 7,818, $p<0.001$). Furthermore, the questionnaire's reliability was evaluated through Cronbach's alpha test, yielding a value of 0.872 for the survey instrument employed in this study.

Statistical Analysis

Continuous variables were summarized using descriptive statistics, including mean, median, standard deviation, and interquartile range (IQR), while categorical variables were presented as frequencies and percentages. The normality of continuous variables was assessed through Kolmogorov-Smirnov, Shapiro-Wilk tests, Q-Q plots, histogram and density analysis, skewness, and kurtosis values. Missing data were excluded from analysis, and Statistical Package for Social Science (SPSS) version 26® and Jamovi version 1.6 software were used for statistical analysis. Statistical significance was defined as $p < 0.05$. The internal consistency of the questionnaire's reliability was evaluated using Cronbach's alpha coefficient. A principal component analysis (PCA) with varimax rotation was performed to assess the 19-item questionnaire. The determination of the number of components was accomplished by considering factors such as total variance explained, scree plot analysis, assumptions tests, factor loadings, and component loadings. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were employed as well. The data were deemed suitable for the principal component analysis, meeting the following conditions: matrix coefficient ≥ 0.40, KMO sampling adequacy > 0.60, and Bartlett's test of sphericity ≤ 0.05. The mean and standard deviation for each item and determinant component were computed. Both items and components received scores ranging from 1 to 5, following established criteria. Negative-phrased items were reversed in scoring.

Results

3.1. Sociodemographic Characteristics of Study Participants

This study involved 140 participants with a mean age of 32.31±14.21. Most of the participants (77, 55%) were Single. A large proportion of participants (80 57.1%) were unemployed. Most of the sample had university degrees (114, 81.4%), and the majority had monthly income between 2500 to 10000 Turkish lira (80, 57.14%). Only 29 (14.3%) of the participants reported history of any chronic disease. The majority of the participant who had a child was married individuals (33, 23.6%), and the mean number of children for the total sample was 0.73±1.26. On the other hand, around one-third of the total sample size was not planning to have a child in the near future (92, 65.7). The family structure of the sample is mainly a nuclear family (109, 77.9%); however, a substantial number of the participants lived within their extended family (26, 18.6%). The demographic characteristics of the sample are presented in Table I.

Table I. Sociodemographic Characteristics of Participants (n=140).

Parameter	Total N, %	Married N, %	Single N, %	*p*
	140, 100%	**63, 45%**	**77, 55%**	***NA***
Age (Mean±SD)	32.31±14.21	43.2±14.9	23.4±2.95	
Employment Status				*χ^2=19,347*
Employed	60, 42.9%	32, 22.9%	28, 20%	
Unemployed	80, 57.1%	31, 22.1%	49, 35%	
Level of Education				*<0.001* χ^2=24,718*
Primary School	5, 3.6%	5, 3.6%	0, 0%	
Secondary School	8, 5.7%	7, 5%	1, 0.7%	
High School	13, 9.3%	11, 7.9%	2, 1.4%	
Graduate	114, 81.4%	40, 28.6%	74, 52.9%	
Comorbidity				*<0.016* χ^2=6,098*
Yes	20, 14.3%	14, 10.1%	6, 4.3%	
No	119, 85%	48, 34.5%	71, 51.1%	
Monthly Income (TL)				*<0.001* χ^2=25,530*
0-2500	47, 33.6%	10, 7.5%	37,27.8%	
2500-5000	51, 36.4%	22, 16.5%	29, 21.8%	
5000-10000	29, 20.7%	22, 16.5%	7, 5.3%	
>10000	6, 4.3%	5, 3.8%	1, 0.8%	
Having a Child				
Yes	33, 23.6%	31, 22.1%	2, 1.4%	*<0.001* χ^2=41,783*
No	107, 76.4%	32, 22.9%	75, 53.6%	
Number of Children (Mean±SD)	0.73±1.26			
0	90, 64.3%	13, 9.3%	77, 55%	*<0.001* χ^2=66.872*
1	15, 10.7%	15, 10.7%		
2	20, 14.3%	20, 14.3%		
3	8, 5.7%	8, 5.7%		
4	4, 2.9%	4, 2.9%		
5	3, 2.1%	3, 2.1%		
Planning to have Child				*<0.001* χ^2=14,392*
Yes	48, 34.3%	11, 7.9%	37, 26.4%	
No	92, 65.7%	52, 37.1%	40, 28.6%	
Smoking				*>0.05**
Yes	43, 30.7%	22, 15.7%	21, 15%	
No	97, 69.3%	41, 29.3%	56, 40%	
Alcohol				*>0.05**
Yes	41, 29.3%	13, 9.4%	28, 20.1%	
No	98, 70%	49, 35.3%	49, 35.3%	
Family Structure				*>0.05**
Nuclear Family	109, 77.9%	53, 39.3%	56, 41.5%	
Extended family	26, 18.6%	9, 6.7%	17, 12.6%	

* Chi-Square test. NA: Not Applicable.

3.2. Preferred contraception methods and Knowledge level of participants about contraception.

According to the results we obtained, the participants' preferred contraception methods and knowledge levels have been presented in Table 2. The most of the women who participated the questionnaire were not using any contraceptive methods (93, 66.4%), and a statistically significant difference was observed between the married and single women ($p<0.001$, $\chi^2=21,968$). Half of the married women were not using any medical contraception methods. Instead, traditional methods were specified for contraception. On the other hand, almost half of the single women (63, 46%) were not using contraception either. Another interesting finding of our study was that nearly half of the participants did not use any contraception methods 75 (53.6%). The reason for using contraception methods was mainly answered as not to get pregnant 41 (29.28%). Among married women, 11 (42.3%) of them do not need any contraception due to various reasons, tube ligation, menopause, not being sexually active, etc. ($p<0.001$, $\chi^2=40,635$). The question regarding "Have you ever heard OCs" were mainly answered as yes (111, 79.3%). However, only 53 (37.9%) of them ever used oral contraceptive medicine ($p<0.001$, $\chi^2=15,251$). The most common reason for the OCs usage was to prevent pregnancy (81, 57.9%) and OCs use due to any a health-related issues (27, 19.3%), respectively ($p<0.005$, $\chi^2=11,669$). Hence around one out of five participants had no information about the OCs usage (32, 22.9%) (Table II).

Table II. Preferred contraception methods and Knowledge level of participants about contraception (n=140).

Parameter	Total N, %	Married N, %	Single N, %	p
	140, 100%	63, 45%	77, 55%	NA
Do you use a type of contraception method?				<0.001* $\chi^2=21,968$
Yes	44, 31.4%	33, 24.1%	11, 8%	
No	93, 66.4%	30, 21.9%	63, 46%	
The reason for contraception				>0.05*
Not to get pregnant	41, 29.28%	30, 62.5%	11, 22.9%	
Health-related issues	3, 2.14%	4, 8.3%	3, 6.3%	
Have you ever used any contraception?				>0.05*
Yes	53, 37.9%	43, 33.6%	10, 7.8%	
No	75, 53.6%	18, 14.1%	57, 44.5%	
What is the reason for not contraception?				<0.001* $\chi^2=40,635$
Having a Children	5, 3.6%	5, 19.2%	0 ,0%	
Not needed	19, 13.6%	11, 42.3%	8, 30.8%	
Other	2, 1.4%	1, 3.8%	1, 3.8%	
Have you ever heard of oral contraceptive medicines?				>0.05*
Yes	111, 79.3%	53, 37.9%	58, 41.4%	
No	29, 20.7%	10, 7.1%	19, 13.6%	
Have you ever used any oral contraceptive medicines?				<0.001* $\chi^2=15,251$
Yes	53, 37.9%	35, 25%	18, 12.9%	
No	87, 62.1%	28, 20%	59, 42.1%	
What are the OCs used for?				<0.005* $\chi^2=11,669$
Not to get pregnant	81, 57.9%	46, 32.9%	35, 25%	
Health-related issues	27, 19.3%	6, 4.3%	21, 15%	
Do not know	32, 22.9%	11, 7.9%	21, 15%	
What are the benefits of the OCs?				<0.001* $\chi^2=13,365$
Contraception	55, 39.3%	35, 25%	20, 14.3%	
Diseases	46, 32.9%	17, 12.1%	29, 20.7%	
Do not know	39, 27.9%	11, 7.9%	28, 20%	

* Chi-Square test, OCs: Oral contraceptives, NA: Not Applicable.

3.3. Information sources about contraception and contraception behavior.

Table III presents the obtained results about the information sources about contraception and contraception behavior. According to our results, more than half (76.2%) of the participants get informed about the OCs through less reliable sources such as TV, Internet, social media, friends, and relatives (76, 54.3%). Only 40 (28.6%) participants answered yes to the question, "Does OCs should be prescribed by a physician." Hence about one-third of the participants recommended the OCs to someone else without any doctor visit (50, 35.7%), and 60 (42.9 %) of them did not know what to do about these kinds of recommendations ($p<0.005$, $\chi^2=11,906$). Most of the participant correctly answered the question of when to take OCs during the day (61, 43.6%) ($p<0.01$, $\chi^2=6,848$). One hundred and two of the participants did not quit OCs due to the side effects ($p<0.001$, $\chi^2=25.721$). The participant women's responses regarding the knowledge, attitude, and trust about OC have been summarized in Table 4. In line with the PCA findings, the KMO measure of sampling adequacy was determined to be 0.787, and Bartlett's test exhibited significance ($p < 0.001$). The derived three-factor model explained 53.95% of the overall variance. The Cronbach's alpha coefficients for each component were 0.842, 0.817, and 0.735, respectively.

Table III. Information sources about contraception and contraception behavior (n=140).

Parameter	Total N, %	Married N, %	Single N, %	p
	140, 100%	63, 45%	77, 55%	NA
Source of knowledge about oral contraceptive medicines				>0.05*
Physician	32, 22.9%	19 14.6%	13, 10%	
Pharmacist	22, 15.7%	6, 4.6%	16, 12.3%	
TV, Internet, social media	30, 21.4%	12, 9.2%	18, 13.8%	
Relatives and friends	46, 32.9%	19, 14.6%	13, 10%	
Should OCs be prescribed by a doctor?				>0.05*
Yes	40, 28.6%	19, 13.6%	21, 15%	
No	88, 62.9%	41, 29.3%	47, 33.6%	
Do not know	12, 8.6%	3, 2.1%	9, 6.4%	
Do you recommend OCs for someone else?				<0.005* $\chi^2=11,906$
Yes	50, 35.7%	23, 16.4%	27, 19.3%	
No	30, 21.4%	21, 15%	9, 6.4%	
Do not know	60, 42.9%	19, 13.6%	41, 29.3%	
Do you know what is the proper time of the day to take OCs?				<0.01* $\chi^2=6,848$
Yes	61, 43.6%	35, 25.4%	26, 18.8%	
No	77, 55%	27, 19.6%	50, 36.2%	
Have you ever stopped taking OCs due to any side effect?				<0.001* $\chi^2=25.72$
Yes	31, 22.1%	26, 18.6%	5, 3.6%	
No	102, 72.9%	35, 25%	67, 47.9%	
Never used	7, 5%	2, 1.4%	5, 3.6%	

* Chi-Square test, OCs: Oral contraceptives, NA: Not Applicable, TV: Television.

Table IV. Participants response regarding the knowledge, attitude, and trust about Oral Contraceptives (n=140)

	Mean [SD]	Strongly Disagree [n, %]	Disagree [n, %]	Neither Agree nor Disagree [n, %]	Agree [n, %]	Strongly Agree [n, %]
Knowledge Cronbach's alpha: 0.842	**2.38 [0.95]**					
Oral contraceptives cause infertility.	2.15 [1.33]	67 [47.86]	20 [14.29]	35 [25]	6 [4.29]	12 [8.57]
Oral contraceptives cause hair growth.	2.7 [1.46]	46 [32.86]	21 [15]	30 [21.43]	19 [13.57]	24 [17.14]
Oral contraceptives cause breast cancer.	2.25 [1.37]	46 [32.86]	21 [15]	30 [21.43]	19 [13.57]	24 [17.14]
Oral contraceptives cause uterine/ovarian cancer.	2.04 [1.27]	46 [32.86]	21 [15]	30 [21.43]	19 [13.57]	24 [17.14]
Oral contraceptives cause menstrual irregularities.	2.1 [1.5]	71 [50.71]	27 [19.29]	24 [17.14]	9 [6.43]	9 [6.43]
Oral contraceptives cause sexual reluctance.	2.12 [1.41]	84 [60]	10 [7.14]	18 [12.86]	11 [7.86]	17 [12.14]
Oral contraceptives cause weight gain.	3 [1.47]	76 [54.29]	22 [15.71]	20 [14.29]	7 [5]	15 [10.71]
Oral contraceptives cause depression.	2.63 [1.51]	35 [25]	21 [15]	30 [21.43]	27 [19.29]	27 [19.29]
Oral contraceptives should not be used continuously.	2.93 [1.64]	51 [36.43]	24 [17.14]	25 [17.86]	16 [11.43]	24 [17.14]
Attitude Cronbach's alpha: 0.817	**2.53 [1.18]**					
It is difficult for women who use contraception to have children again.	1.92 [1.39]	31 [22.14]	20 [14.29]	36 [25.71]	22 [15.71]	31 [22.14]
I avoid using oral contraceptives.	2.43 [1.63]	81 [57.86]	22 [15.71]	9 [6.43]	7 [5]	14 [10]
I am afraid of the side effects of oral contraceptives.	2.7 [1.52]	65 [46.43]	8 [5.71]	23 [16.43]	8 [5.71]	27 [19.29]
I think oral contraceptives are harmful to the body because they contain artificial hormones.	3.11 [1.44]	49 [35]	12 [8.57]	25 [17.86]	17 [12.14]	37 [26.43]
Trust Cronbach's alpha: 0.735	**2.82 [0.99]**					
I believe oral contraceptives are more effective than IUD.	2.43 [1.4]	40 [28.57]	25 [17.86]	27 [19.29]	14 [10]	26 [18.57]
I believe oral contraceptives are more effective than condoms.	3.09 [1.48]	49 [35]	19 [13.57]	35 [25]	6 [4.29]	17 [12.14]
I believe oral contraceptives are more effective than pills containing progestogen alone.	2.75 [1.42]	30 [21.43]	15 [10.71]	31 [22.14]	23 [16.43]	32 [22.86]
I believe oral contraceptives are more effective than withdrawal.	3.34 [1.63]	34 [24.29]	18 [12.86]	40 [28.57]	10 [7.14]	23 [16.43]
I believe oral contraceptives are less effective than sterilization.	2.36 [1.43]	28 [20]	13 [9.29]	23 [16.43]	11 [7.86]	54 [38.57]
I believe smokers can use oral contraceptives.	2.98 [1.68]	41 [29.29]	14 [10]	15 [10.71]	20 [14.29]	40 [28.57]

IUD: Intrauterine Device, n: Number, SD: Standard Deviation.

Discussion

One hundred and forty women participated in this study, attitudes, behaviors, and knowledge levels of married and single women about OCs were investigated. Married women especially had higher levels of knowledge and attitudes about OCs. On the other hand, it is observed that women have confidence in OCs in terms of protection but have some concerns about possible side effects. The results of this study pointed out that, there is a need for improvements in the level of knowledge of the women included in our sample, especially those who are single. In addition, it was observed that myths are prevalent among society, and individuals recommending OCs to their friends and relatives without a prescription are other important issues.

It was determined that 42.85% of the women in the study were between the ages of 18-25, 19.64% between 26-35, 15.47% between 36-45, 11.9% between 46-55, 10.11% between 56 and above, respectively. In the study, the average of the female population of reproductive age was 87.96%. In TDHS 2018, it was found that 58.33% of the women were university graduates, 13.09% were master's, doctorate, etc., 10.71% were high school graduates, 10.11% were secondary school graduates, 4.16% were primary school graduates and 3.57% were illiterate. At the same time, according to the results of TDHS 2018, it was observed that the level of knowledge about contraceptive methods and oral contraceptives increased with increasing education levels. When compared with our study, it was observed that the level of education and the level of knowledge progressed in parallel, and it was found to be in common with the results of TDHS 2018 (2). These results show that a significant proportion of women in the 15-49 age group in our country have primary school education. However, as seen in our results, their educational status was high. In our sample women with graduate and postgraduate degrees are at the top of the list. Ahmad et al. (2006) also reported that individuals had a more positive perspective on family planning methods with increasing educational levels. As a result, higher education levels of women may positively affect their attitudes toward family planning and method selection. In addition, many studies in the literature, obtained a significant difference between educational status and contraceptive method use ($p<0.05$) (17–19).

It was found that 76.4% of the participants in the study had no children, 10.7% had one child, 1.34% had two children, 5.7% had three children, and 5% had four or more children. In another study, it was found that families had two children with a rate of 34.8% (20). Different results were obtained in two studies on the number of children selected in accordance

with today's economic conditions. The fact that more people who do not have children participated in our study is parallel with the fact that they have not been married. Tehrani et al. found that the number of pregnancies decreased as the educational level of women increased (21). It was found that the higher the monthly income and education level, the lower the number of pregnancies. This is thought to be because couples postpone having children until the period when their financial status improve (22).

In this study, the utilization of any form of contraceptive method was evaluated and revealed that 31.4% of the participants were using any kind of contraceptive method. According to the results of TDHS, 71% employed contraceptive methods, with 28.5% favoring traditional methods and 42.5% adopting modern approaches. In comparison with our research, a notable disparity emerged, with a higher prevalence of modern methods and a reduced reliance on traditional methods in the TDHS results (2). The results of existing literature reveals a spectrum of contraceptive utilization rates by women, spanning from 57% to 83% (21, 23, 24). The contraceptive usage rate in our results (41%) was found to be beneath both the literature's range and the TDHS 2018 results.

Participants were asked regarding their sources of knowledge or information regarding the oral contraceptives they utilized, revealing that a mere 45.6% were informed by a medical professional such as a physician or pharmacist. In a study by Mayda SA et al. (25), it was found that 55.6% of participants obtained knowledge about oral contraceptives from the general environment, 13.4% from doctors, and 12.3% from pharmacists. Consequently, there exists a clear need for comprehensive education aimed at women, encompassing family planning, contraceptive methods, and, specifically, oral contraceptives. The indispensable role of pharmacists in facilitating informed usage of oral contraceptives and contraception, therefore, becomes evident. Pharmacists should diligently undertake pharmaceutical care activities such as patient education and counselling related to family planning, contraceptive methods, and oral contraceptives. As a result of these cognitive pharmacy services an enhancement in adherence, reduction of side effects, increase in illness perception and optimization of treatment duration can be achieved.

Community pharmacists are responsible for providing family planning services and they should perform comprehensive patient counseling regarding oral contraceptives. This counseling serves the dual purpose of evaluating the appropriateness of the contraceptive method for individual women and providing essential information to those considering the use of oral contraceptives. Eligible women can then acquire the prescribed oral contraceptives from pharmacies or other healthcare facilities, excluding subsequent follow-up visits. If discontinuation of the method is necessary for any reason, consultation with pharmacist would be beneficial. Given that pharmacists constitute easily accessible healthcare providers, their pivotal role in this process is important (26).

Roughly fifty percent of the women participated in the survey believed that OCs might have potential harm to the body due to their content as synthetic hormones, while the remaining half did not share this perspective. This indicates an equipoise of opinion among women on this matter. It is noteworthy that the existing literature does not provide specific evidence regarding potential harm arising from the synthetic hormone nature of these drugs, although prior research has highlighted that synthetic hormones tend to exhibit a higher incidence of side effects compared to natural hormones (17).

A study undertaken at the NHMRC Centre for Research Excellence in Women's Sexual and Reproductive Health in Primary Care (SPHERE) at Monash University in Australia was aimed at investigating the role of community pharmacists in providing contraception (27). The study sought to ascertain the extent of pharmacy services, their feasibility, acceptability, and overall efficacy. The findings of this study suggest that contraception services offered in community pharmacies have the potential to address prevailing sexual and reproductive health disparities on a global scale and enhance patient access to contraception. While pharmacy-based initiatives may not entirely eliminate all barriers to access or drastically reduce unintended pregnancy rates, they undoubtedly hold substantial significance for both pharmacists and patients (27). While some patients might exhibit hesitancy in seeking contraceptive advice from pharmacists, they frequently express contentment with the convenience and approachability of pharmacy services. Overall, these interventions have succeeded in bolstering access to contraceptive options, even though they may not consistently alleviate disparities. It's notable that the health advantages of pharmacy interventions, if present, tend to be modest or unreported in the existing literature. Consequently, further research is warranted to delineate the health outcomes associated with routine contraceptive provision, contraceptive counseling, accessibility, and service delivery. Such endeavors will serve to better elucidate the advantages and efficacy of pharmacy-based interventions in this domain.

This study has some limitations. Initially, given the reliance on self-reported information, individual viewpoints might have influenced the responses received. Secondly, the design of the questionnaires may have elicited reticence in acknowledging misconceptions; nevertheless, the emphasis on safeguarding participants' anonymity and responses helped alleviate this potential predisposition.

Conclusion

Considering the results, we obtained and the existing literature, the level of knowledge and attitude about OCs in the Turkish women for different age groups is not at the desired level. There is a need for community-wide information programs for a healthier structuring of attitudes and behaviors about contraception and contraceptives, especially in young individuals. The active involvement of community pharmacists, in issues such as contraception and family planning would enhance to better practice. The benefits of pharmaceutical care and counselling services provided by community pharmacists on women's knowledge and attitudes about OCs should be investigated in more detailed studies are necessary to explore this issue in detail.

Acknowledgment

The authors thank Bezmialem Vakif University for the opportunity. The authors declare no conflict of interest.

References

1. Teal S, Edelman A. Contraception Selection, Effectiveness, and Adverse Effects: A Review. Amer. Medical Assoc 2021;326(24):2507-2518.

2. Nüfus Etütleri Enstitüsü. 2018 Türkiye Nüfus ve Sağlık Araştırması. Published 2018. https://hips.hacettepe.edu.tr/tr/2018_turkiye_nufus_ve_saglik_arastirmasi-55

3. Skaritanov E, Wilkie G, Kovell LC. Selection, Effectiveness, and Adverse Effects of Contraception. Amer. Medical Assoc 2022;327(15):1504.

4. Simmons RG, Jennings V. Fertility awareness-based methods of family planning. Best Pract Res Clin Obstet Gynaecol 2020;66:68-82.

5. Ganti AK, Hillard PJA. Family planning in adolescents. Curr Opin Obstet Gynecol 2019;31(6):447-451.

6. Black A, Guilbert E, Costescu D, et al. Canadian Contraception Consensus (Part 1 of 4). J Obstet Gynaecol Canada JOGC = J d'obstetrique Gynecol du Canada JOGC 2015;37(10):936-942.

7. Black A, Guilbert E, Costescu D, et al. Canadian Contraception Consensus (Part 3 of 4): Chapter 7, Intrauterine Contraception. J Obstet Gynaecol Canada J d'obstetrique Gynecol du Canada, JOGC 2016;38(2):182-222.

8. Bektay MY, Sancar M, Jadoo SAA, Izzettin FV. Time to change to improve health: clinical pharmacy and pharmaceutical care education in Turkey. J Ideas Heal 2020;3(1):130-134.

9. Kennedy CE, Yeh PT, Gonsalves L, et al. Should oral contraceptive pills be available without a prescription? A systematic review of over-the-counter and pharmacy access availability. BMJ Glob Heal 2019;4(3):e001402.

10. Landau SC, Tapias MP, McGhee BT. Birth control within reach: a national survey on women's attitudes toward and interest in pharmacy access to hormonal contraception. Contraception 2006;74(6):463-470.

11. Irwin AN, Stewart OC, Nguyen VQ, Bzowyckyj AS. Public perception of pharmacist-prescribed self-administered non-emergency hormonal contraception: An analysis of online social discourse. Res Social Adm Pharm 2019;15(6):650-655.

12. Hilverding AT, DiPietro Mager NA. Pharmacists' attitudes regarding the provision of sexual and reproductive health services. J Am Pharm Assoc (2003) 2017;57(4):493-497.

13. Norman W V, Soon JA, Panagiotoglou D, Albert A, Zed PJ. The acceptability of contraception task-sharing among pharmacists in Canada the ACT-Pharm study. Contraception 2015;92(1):55-61.

14. Sharma A, Minh Duc NT, Luu Lam Thang T, et al. A Consensus-Based Checklist for Reporting of Survey Studies (CROSS). J Gen Intern Med 2021;36(10):3179-3187.

15. Hashemi F, Hoepner L, Hamidinejad FS, et al. A comprehensive health effects assessment of the use of sanitizers and disinfectants during COVID-19 pandemic: a global survey. Environ Sci Pollut Res Int 2023;30(28):72368-72388.

16. Sümbül-Şekerci B, Bildik O, Bektay MY, İzzettin FV. Attitudes of medicine, pharmacy, and dentistry students about psychostimulant use to enhance cognition. Int J Clin Pract 2021;75(10):e14608.

17. Dinç A. 40 Yaş Üzeri Evli Kadınların Kontraseptif Tercihlerinin İncelenmesi. Zeynep Kamil medical journal 2018;49(3):251-255.

18. Ezire O, Idogho O, Theophilus A, Ikani S, Oluigbo O. Study on the patterns and trend in contraceptive use in South-South and North-Western zones of Nigeria: 2003–2011. Open Access J Contracept 2014;5:65-72.

19. Adeyemi AS, Olugbenga-Bello AI, Adeoye OA, Salawu MO, Aderinoye AA, Agbaje MA. Contraceptive prevalence and determinants among women of reproductive age group in Ogbomoso, Oyo State, Nigeria. Open access J Contracept 2016;7:33-41.

20. Karabulutlu GO. 15-49 yaş grubundaki kadınların doğum oncesi bakım alma sıklığı ve etkileyen faktorleri belirleme, verilen hizmetin uygunluğunu değerlendirme. Journal of Nursology 2021;24(4):520-530.

21. Tehrani FR, Farahani FK, Hashemi M. Factors influencing contraceptive use in Tehran. Fam Pract 2001;18(2):204-208.

22. Toprak Evcik D, Gokseven Y, Oztürk GZ. Üreme Çağındaki KadınlardaKontrasepsiyon Bilgi Düzeyinin, Tutum ve Davranışlarının Değerlendirilmesi. The Turkish Journal of Family Practice 2020;24(4):203-212.

23. Gotmark F, Andersson M. Human fertility in relation to education, economy, religion, contraception, and family planning programs. BMC Public Health 2020;20(1):265.

24. Gürkaş E MK. Gaziantep İstasyon Aile Sağlığı Merkezi Bolgesindeki 15–49 Yaş Kadınların Aile Planlaması Yontemi Kullanım Düzeyinin Belirlenmesi. Konuralp Medical Journal 2013;5(2):1-3.

25. Mayda As, Bozkurt HB, Arslan T, Dedeli İ, Ozkan MO. Düzce ili kalıcı konutlar bolgesinde 15-49 yaş arası kadınlarda yontem kullanma oranları ve tercih nedenleri. TSK Koruyucu Hekim Bülteni 2005;4(5):265-279.

26. Gorvett Z. The strange truth about the pill. BBC, Futur. Published online 2018. https://www.bbc.com/future/article/20180822-the-birth-control-pill-can-have-male-side-effects

27. SPHERE Centre of Research Excellence. Driving better sexual and reproductive health outcomes for women through primary care. https://www.spherecre.org/