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Original Research Article

Assessment of Knowledge, Attitude and Oral Health Status of the Women Using Oral Contraceptive Pills among Different Socioeconomic Status

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Abstract

Background: Intra oral changes are seen in various therapeutic drug usage which can be mild to severe. Oral contraceptive pills (OCP) usage is one among them which causes frequent intra oral changes. Aim of the study was to assess knowledge, attitude, and oral health status of among women using OCP's in Kalaburagi district, Karnataka, India. ***Methods:*** A self administered questionnaire was designed and given to women with different socioeconomic background to assess the knowledge, attitude and oral health status of the women using OCPs. ***Results:*** Results in the present study showed demographic characteristics of patient's age ranging from 18 year to 41 years. Participants revealed various side effects of OCP which accounts 41% of general side effects and 47 % of oral complications. Common oral complications noticed by Participants had experienced bleeding gums, swollen gums and sometimes both with accounted to 23, 9, 17% respectively. ***Conclusion:*** Questionnaire studies designed with clinical examination of oral cavity are required to assess the oral health status, to create awareness and knowledge regarding oral hygiene.
Keywords: Attitude, Knowledge, Oral contraceptives, Women.

INTRODUCTION

Birth control also known as contraception is designed to prevent pregnancy. The choice of contraceptive method is influenced by a host of interdependent demographic, cultural, economic and social factors. India was first country in the world to adopt and launch family planning policy way back in 1952 [1]. Oral contraceptives pills (OCPs) are one of the most commonly used methods of birth control by women worldwide. Percentage of Indian women using OCP is about 4.2%. Birth control pills are an example of a hormonal birth control method that prevents ovulation through the combined actions of progestin and estrogen to block FSH and LH and thus prevent ovulation [2]. These premenopausal steroid sex hormones are responsible not only for the physiological changes in women, but also for significant biological actions that can affect different organ systems including the oral cavity at different phases of their lifetime.

Apart from preventing pregnancy, these OCPs are known to cause various adverse effects. These effect can range from mild to severe depending on various factors such as duration of usage. Common adverse effect include nausea, vomiting, heaviness in breast, uncontrolled menstruation, pigmentation of mucosa, gingival bleeding and inflammation [3].

Many clinical research suggest that there is a increase incident of loss of periodontal attachment, inflamed and enlarged gingiva in a people using OCP in Comparision with non OCP users [4]. Most commonly reported oral changes during the usage of OCP are Gingivitis, inflamed papillae, gingival bleeding, gingival erythema and gingival pregnancy type epulis. Most of these changes are unnoticed to the person using OCP because of lack of awareness and knowledge regarding the adverse effect of OCPs on oral health. Therefore the present study was designed to assess the awareness and knowledge of OCP and its adverse effects on oral tissues and oral health status in patients using Contraceptive pills.

MATERIALS AND METHODS

The present study was conducted as a cross sectional study among the general population of

Kalaburagi district, Karnataka, India. Women with a positive history of OCP usage and who were willing to participate voluntarily were selected and included in the present study. A self administered semi structured questionnaire was designed to assess the knowledge and oral health status of the women using OCPs. All the participants were informed regarding the study and informed consent was taken with detailed explanation in local language without harming the cultural and social values. The questionnaire was available in English and in Kannada (local language). Selected women representing various socioeconomic classes classified according to modified B.G. Prasad classification were given the questionnaire. A total of 100 patients were participated in the present study of which 26 patients were from class II, 24 patients were Class III, 25 patients were class IV and remaining 25 patients were from class V socioeconomic status.

The demographic data collected included age, educational level, socioeconomic status, marital status (no. of years) and duration of OCP usage. The following questions were applied to obtain spontaneous answers regarding the participant's knowledge about OCP usage. Knowledge was measured through direct questions inquiring whether participants developed any of the side effects following the use of OCP, and the duration period when the side effects were noticed by the participant. During the course of OCP usage the participants were asked if they had developed any oral changes and also the awareness about the participant regarding effect of OCP on oral health. The oral hygiene maintenance was also assessed and the participants were asked to inform about bleeding gums, mobile tooth, and loss of tooth, dryness and bad breath in oral cavity.

Data was entered in excel, and analyzed using IBM SPSS statistics V. 22(IBM Corp. Released 2013. IBM SPSS statistics for windows, version 22.0 Armonk, NY: IBM Corp.) The analysis of answers involved descriptive quantitative statistics e.g. frequency and percentage. Chi-square and cross tabulation were used to test for significant association between groups across different socio-economic status.

RESULTS

In the present study, demographic characteristics of study participants showed patients age ranging between 18 year to 41 years with maximum participants in the age group of 21-30 years (58%) followed by 31-40 years(37%) (Table-2). Educational status of all the participants showed 34% of patients with secondary education followed by 33% of graduates. Participants in the present study included from different socioeconomic status (Table-2).

Participants in the present study revealed a various side effects of OCP both general and an oral complication which accounts 41% of general side effects and 47 % of oral complications in a OCP usage ranging from 3-96 months (Table-1). When asked about specific side effects, revealed 23% of Participants had nausea as a common side effect followed by 9% of Participants with weight gain and rest 9% had various complications such as mood swings, dysmenorrhoea, and menorrhagia (Graph-1). Common oral complications noticed by Participants were bleeding gums, swollen gum and both with accounts 23, 9, 17% respectively (Graph-2).

In the present study knowledge of participants was assessed regarding oral health, which showed that 71 % of participants brushed daily once and 42% were aware that cavities are formed by infectious microorganisms and 19 % knew that OCP usage can cause Gingival changes. 42% of participants had complained of bleeding gums in the last six months. 25% of the participants reported with the mobile tooth and only 8% of participants had lost their tooth during the course of OCP usage for more than 30 months. 36% of elderly Participants experienced a bad breath and only 8 % had dryness in oral cavity during the course of OCP usage. 23% of participants reported with other oral problems such as cavities, food lodgement, burning mucosa, sensitivity and ulcers. 86% of participants were willing to get treatment related to gingival and periodontal problems (Graph-3).

Further when all the parameters were cross tabulated against different Socioeconomic status which showed statistical significant results among different socioeconomic status with brushing frequency, awareness of cavities caused in infections and willingness to treatment (Table-3). when all the parameters were cross tabulated against different educational levels which showed a statistical significant results among different socioeconomic status with respective brushing frequency, awareness of cavities caused in infections, OCP usage can cause Gingival changes, loss of tooth and willingness to treatment (Table-4).

Table-1: Percentages of side effects of study participants (n=100)

Criteria	General side effects	Oral complications
Yes	41 %	47%
No	59%	53%

Table-2: Demographic characteristics of study participants (n=100)

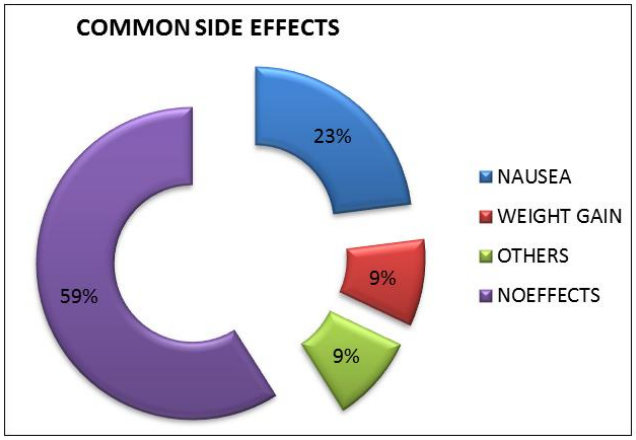
Demographic characteristics	Percentage
Age (years)	
≤20	3%
21-30	58%
31-40	37%
≥40	2%
Educational status	
Illiterates	11%
Primary	22%
Secondary	34%
Graduate	33%
Socioeconomic status	
Class II	26%
Class III	24%
Class IV	25%
Class V	25%

Table-3: Cross tabulation against different Socio-economic status

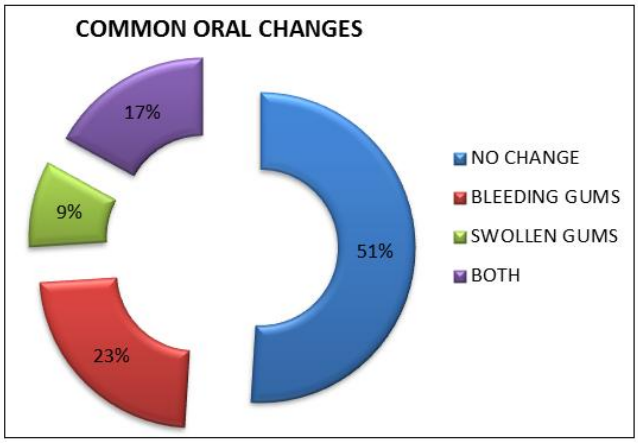
	Score	Socio-economic status				
		2	**3**	**4**	**5**	Total
Question 1 Brushing frequency	1- once	16	13	20	25	74
	2- twice	10	11	5	0	26
	Total	26	24	25	25	100
	P value	**0.001**				
Question 2 cavities caused by infection	1 - yes	14	16	12	0	42
	2 - no	12	08	13	25	58
	Total	26	24	25	25	100
	P value	**0.000**				
Question 7 Treatment willingness	1 - yes	25	22	23	16	86
	2 - no	1	2	2	9	14
	Total	26	24	25	25	100
	P value	**0.003**				

Table-4: Cross tabulation against different Educational Level

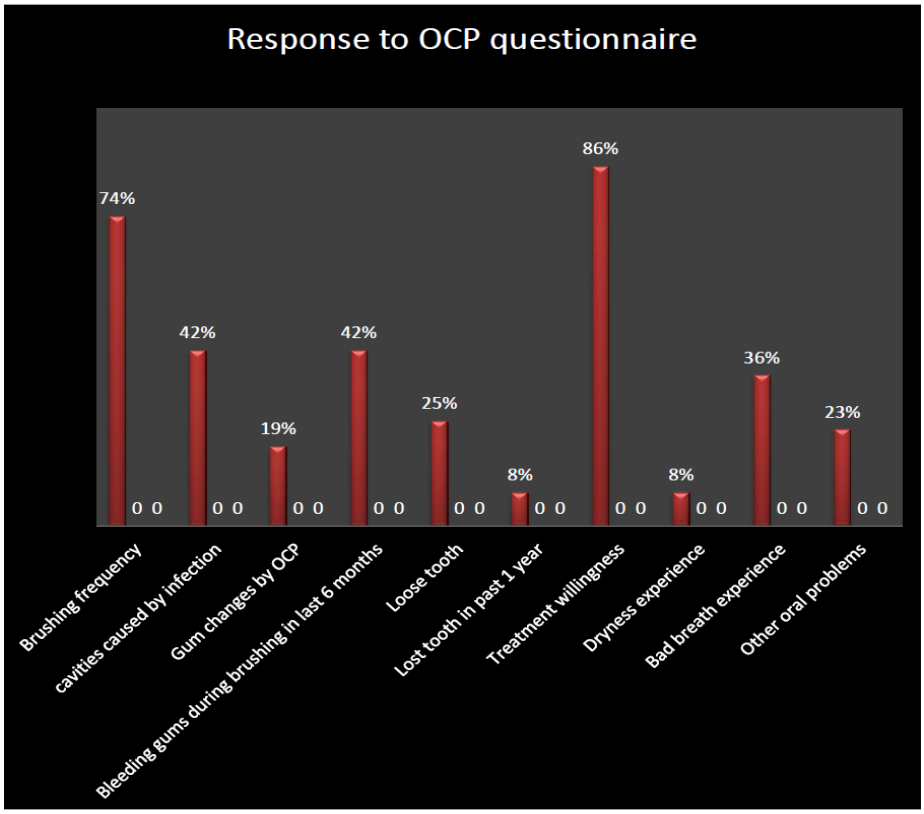
	Score	Educational level				
		1	**2**	**3**	**4**	Total
Question 1 Brushing frequency	1- once	11	21	27	15	74
	2- twice	0	1	7	18	26
	Total	11	22	34	33	100
	P value	**0.000**				
Question 2 cavities caused by infection	1 - yes	1	4	13	24	42
	2 - no	10	18	21	9	58
	Total	11	22	34	33	100
	P value	**0.000**				
Question 3 Gum changes by OCP	1 - yes	0	0	9	10	19
	2 - no	11	22	25	23	81
	Total	11	22	34	33	100
	P value	**0.008**				
Question 6 Lost tooth in past 1 year	1 - yes	5	1	2	0	8
	2 - no	6	21	32	33	92
	Total	11	22	34	33	100
	P value	**0.000**				
Question 7 Treatment willingness	1 - yes	2	20	33	31	86
	2 - no	9	2	1	2	14
	Total	11	22	34	33	100
	P value	**0.000**				



Graph-1: Percentage of Common Side Effects



Graph-2: Percentage of Common Oral Changes



Graph-3: Response to OCP Questionnaire

DISCUSSION

Administration of systemic drugs like Phenytoin, Cyclosporine and Nifedipine have known to cause a compromised in oral hygiene and shown to alter the gingival health such as gingival inflammation, enlargement and increased bleeding tendency. There is lack of awareness regarding the ill effect of such drugs until they visit dentist for some other complaints such as tooth ache, food lodgement or bleeding gums. Oral Contraceptive is one such drug which has been associated with the gingival enlargement in females using OCP. Assessment of knowledge of OCPs and its effect on oral health is very much necessary in order to maintain good oral hygiene.

This cross-sectional study evaluated knowledge and oral health status among female participants using oral contraceptives pills (OCPs) in a wide age range (18–45 years). The study used a reliable and valid questionnaire to assess the common oral complications, awareness regarding the complications of OCP on gingiva. Various studies have shown a varied relationship between altered sex hormonal levels and gingival inflammation. Increased probing depth of gingiva, inflammation in gingiva and bleeding on probing may be seen during menstruation, pregnancy and menopause which are associated with physiological hormonal imbalances [5].

Tilakaratne *et al*., in their research investigated for any gingival changes in 32 women taking hormonal contraceptives for less than 2 years, 17 women for 2-4 years and a matched control group of 39 non users' women. The results obtained suggested that women taking pills had similar oral hygiene levels than women who did not take. They concluded that usage of contraceptive preparations containing estrogen and progesterone resulted in hormonal changes similar to those seen in pregnancy, associated with increased prevalence of gingivitis. There was significantly higher attachment loss with prolonged usage of hormonal contraceptives, compared with controls [6].

In the present study the duration of OCP usage ranged from 2 months to 90 months among the participants. Common complications reported by participants included bleeding gums (23%), swollen gums (9%). About 17% of the participants reported with combined bleeding gums and swollen gums in the participants who used medication for more than 30 months period.

The present study also revealed a good response to the questionnaire regarding the knowledge and oral health status. The association between OCP use and gingival disease was first described in relation to high concentrations of sex steroids by Lindhe and Björn in 1967 [7]. Various studies have identified that there is an increase in circulating sex steroid hormones levels which can have an impact on the gingival and periodontal tissues. The most common oral manifestation of increased levels of ovarian hormones is gingival inflammation, associated with gingival crevicular exudate. During the course of OCP usage, it was shown that a gingival tissue contains receptor for androgens, estrogens and progestins [8]. Presence of these receptors might provide evidence that periodontal tissues are a target for the gestational hormones. Crevicular fluid containing these hormones is in close proximity to microbial colonies; these hormones act as growth factors, thereby contributing to exacerbation of plaque-associated gingivitis [9]. Progesterone causes increased vascular permeability and an increased synthesis of prostaglandin. Prostaglandin E, a mediator of inflammation, appears to rise significantly with increasing levels of sex hormones [10]. 49% of the participants had gingival problems during the course of OCP usage which included gingival bleeding; gingival swelling and 42% had bleeding gums in the last six months.

There was difference of opinion among the various socio economic status with respect to frequency of brushing, awareness of cavities caused by infections and willingness to treatment. All the participants in the Class V were brushing once daily compared to that of other class participants. None of the class V participants were aware about causes of cavities and effects of OCP on gums. Class II and III participants had a highest knowledge of 53% and 66% respectively regarding these issues. Educational levels also made a difference in brushing frequency, awareness of cavities caused due to infections. OCP usage can cause gingival changes, loss of tooth due to compromised periodontium. Few of the participants experienced bad breath, which is mainly because of poor oral hygiene along with food lodgement and increased gingival inflammation. These results suggest that there is a lack of knowledge among the low socioeconomic status participants as well as in the illiterate participants.

As the present study lacks the clinical examination of oral cavity. Questionnaire studies designed with clinical examination of oral cavity are required to assess the oral health status, to create awareness and knowledge regarding oral hygiene.

Conflicts of Interest: No conflicts of interest.

REFERENCES

1. Chaurasia AR. "Contraceptive Use in India: A Data Mining Approach." Int J Popul Res vol 2014:821436, 11 pages. doi:10.1155/2014/821436
2. Hatcher RA, Trussell J, Stewart F, Willard C Jr, Stewart GK, Guest F, Kowal D. Contraceptive technology. 17th ed. New York: Ardent Media; 1999. p. 405-6.
3. Ganiswarna SG, Setiabudi S, Suyatna FD, Purwantyastuti, Nafrialdi. Farmakologi dan terapi. 4th ed. Jakarta: FK UI; 1995. p. 439-55.

4. William JM, Weinberg MA. Periodontal changes in females. US Pharm 2007;32(9):54-6.
5. Amar S, Chung KM. Influence of hormonal variation on the periodontium in women. Periodontology 2000. 1994;6:79-87.
6. Tilakaratne A, Soory M, Ranasinghe AW, Corea SMX, ekanayake SL, Silva M. effects of hormonal contraceptives on the periodontium, in a population of rural Sri-Lankan women. J Clin Periodontol 2000;27:753-7
7. Lindhe J, Björn AL. Influence of hormonal contraceptives on the gingiva of women. J Periodontal Res 1967; 2(1):1-6.
8. Mariotti A. Sex steroid hormones and cell dynamics in the periodontium. Crit Rev Oral Biol Med 1994; 5(1):27-53.
9. Mohan S, Govila V, Qureshi S, Saini A, Prabha C, Gupta A. Assessment of the putative effects of Oral Contraceptives on Gingival tissues. J Biol Sci Med 2016:2(2):1-6
10. Miyagi M, Morishita M, Iwamoto Y. Effects of sex hormones on production of prostaglandin E2 by human peripheral monocytes. J Periodontol 1993; 64(1):1075-8.