

## Knowledge and attitude about botulinum toxins and dermal fillers among females attending the primary health care centers in Baghdad

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### Abstract

**Background:** Knowledge and attitude about botulinum toxins and dermal fillers need to be expanded in the community with the dramatic increase of these procedures nowadays in our country with financial burden and wrong practice and going to ineligible people.

**Objective:** To find out the prevalence of esthetic procedures and reasons behinds seeking these procedures and to measure the knowledge level and attitude about the use of botulinum toxins and dermal fillers among females.

**Methodology:** A cross sectional study was conducted in the primary health care centers in Baghdad. A questionnaire had been given to 400 females by direct interview to collect the needed information.

**Results:** Only 22% of studied sample practice filler and Botox for cosmetic reasons. 43.8% of them are within the age group of 30-39 years, 84.4% of them were married, 68.9% were employed. Mainly 31% to counteract the aging process, most of them performed these procedures in medical clinics; only 15.3% did it at beauty centers. 61.5% of the studied sample had an average level of knowledge about cosmetic procedures.

**Conclusion:** The prevalence of cosmetic procedures is relatively low as about one quarter of the participants underwent these procedures. The rate of poor knowledge is higher in subjects who did not undergo esthetic procedure.

**Keywords:** Botulinum toxins; Dermal fillers; Prevalence of esthetic; Cosmetic procedures

### 1. Introduction

Modern society has witnessed a remarkable competitive standard for beauty, changes in the modern society have pushed people to pay more attention to their bodies and how to attain and control it <sup>[1],[2]</sup>. Women are more afraid about how other people may judge them centered on their physical look.<sup>[3]</sup>

In the recent years, there was an upsurge in the number of cosmetic procedures “treatment intended to improve a person appearance”, either surgical, such as rhinoplasty and abdominoplasty or nonsurgical such as botulinum toxin and dermal fillers.<sup>[4]</sup>

There has been global increase in the number of those procedures performed over the last two decades, mainly due to more accessibility of minimally invasive procedures. Several personal, social, and psychological characteristics affect the increasing interest in cosmetic procedures. Dermatology and cosmetic outpatient clinics easily provide several minimally invasive cosmetic procedures (MICPs), such as injectable Botox, facial filler, platelet-rich plasma (PRP),

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mesotherapy, and chemical peels. The fact that MICPs are easy to reach for patients and quick to apply for physicians probably contributes to increase the demand and acceptance of middle-aged women to make such procedures and to have a natural look without significant difficulties as general anesthesia, surgical incisions and preoperative preparing are not needed.<sup>[4],[5]</sup>

Factors associated with growing interest in cosmetic procedures include older age, having children, higher household income, lower education, and greater acceptance of media images of draw.<sup>[6]</sup> . Non-surgical cosmetic procedures have increased by 51.6% from 2017 to 2021 for both men and women. The International Society of Plastic Surgeons (ISAPS) reported that approximately, 13 million cosmetic procedures were performed in 2021 <sup>[7]</sup>, with a total annual cost of around 4.4 US\$ billion in USA <sup>[8]</sup>. Botulinum Toxin-Type A Was first used on the face by Carruthers in the late 1980s. botulinum toxin was approved by the USA Food and Drug Administration (FDA) in 1990, This led to a revolution in treating ageing skin in recent years <sup>[9, 10]</sup>. With the dramatic increase and trends of Botox and filler nowadays in our country with financial burden on the community with wrong practice and going to ineligible people, this research was conducted to find out the knowledge and the attitude about the use of botulinum toxins and dermal fillers among females and to find out reasons behinds seeking esthetic procedures and the associated factors.

## 2. Material and methods

A cross sectional study was conducted in two primary health care center (PHCC) in Al Rusafa district (Hay Ur and AL shaheed Taher centers), Baghdad, Iraq during a period from 1<sup>st</sup> of January 2022 to end of May 2023. The study population was involved all females (15-60 years age) attending the two primary health care centers mentioned above, which were the most accessible to the researcher geographic area. The questionnaires were distributed to those who agreed to be recruited in the study, and then were recollected from them. A questionnaire had been given to the 400 participants by direct interview to collect needed information; the questionnaire was filled by the participants in Arabic language. The questionnaire consists of 3 parts: 1. The prevalence and reasons behind seeking esthetic procedures and the associated factors: which include 9 closed questions with yes or no and multiple-choice question: 2. Assessment of the knowledge: which include 2 division, the first division contain 8 closed questions with yes and no responses. The second division consist of 4 multiple choice questions. 3. Assessment of the attitude: which include 7 closed questions with yes or no and MCQ.

### 2.1. Statistical Analysis

Collected data were reviewed and entered into Microsoft Excel Sheet **2016** and loaded into SPSS software version 25 for statistical analysis.

Descriptive statistics were presented as frequencies and percentages. Continuous variables were presented as (Means  $\pm$  SD). Chi-square test was used to find out significance of association between related categorical variables. P-value < 0.05 was considered as significance.

## 3. Results

Results revealed that about 5% of studied subjects aged less than 20 years, while 25.5% and 38% and 31.5% aged 20-29 years, 30-39 years, 40years and above respectively.

About 39.5% of studied subjects had primary level of education, while 38.5% and 22% had secondary and university level of education respectively. Studied subjects who had jobs formed 40.5% of our sample. Married ladies formed 74.5%, while single and other marital statuses formed 12% and 13.5% respectively (table 1).

**Table 1** Distribution of studied sample according to demographic data

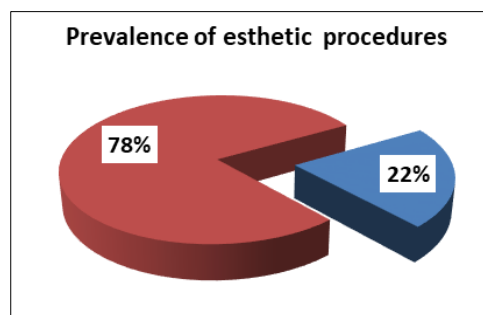
		N	%
Age	<20	20	5.0
	20-29	102	25.5
	30-39	152	38.0
	40 year and above	126	31.5

Education	Primary	158	39.5
	Secondary	154	38.5
	University	88	22.0
Occupation	Employed	162	40.5
	Unemployed	238	59.5
Marital status	Single	52	13.0
	Married	298	74.5
	Other	50	12.5

**3.1. The prevalence and reasons behind seeking esthetic procedures and the associated factors:**

A proportion of 22% had history of Botox and/or filler procedure, which is considered as underestimated results, because the primary health care centers lie in area can be considered as low socioeconomic level. About 43.8% of subjects aged 30-39 years had positive past history of esthetic procedures, which is significantly higher than other age group, (P value=0.003)

Employed subjects which formed (68.9%) had positive history of esthetic procedures, which is significantly higher than unemployed subjects, (P value=0.015) And about (84.4%) of married subjects underwent such procedures, which is significantly higher than other marital status group, (P value=0.002) And as shown in figure (1) and table (2)



**Figure 1** Proportion of subjects according to have history of esthetic procedures or not

**Table 1** Association between demographic data and past history of esthetic procedures of the studied subjects

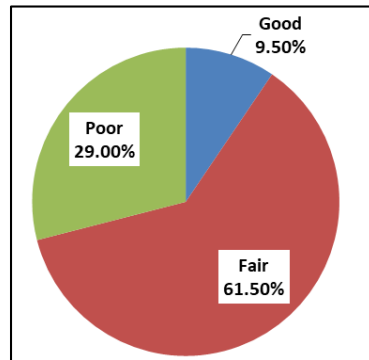
		+ve past history (no.=86)		-ve past history (no.=314)		P value
		n	%	N	%	
Age	<20	9	11.1	10	3.2	0.003
	20-29	18	20.7	93	29.7	
	30-39	38	43.8	79	25.2	
	40 year and above	21	24.4	132	41.9	
Education	Primary	8	8.9	120	38.1	0.150
	Secondary	38	44.4	113	36.1	
	University	40	46.7	81	25.8	
Occupation	Employed	59	68.9	136	43.2	0.015
	Unemployed	27	31.1	178	56.8	
Marital status	Single	8	8.9	45	14.2	0.002
	Married	73	84.4	224	71.6	
	Other	5	6.7	45	14.2	

**3.2. The knowledge**

About the knowledge levels about botulinum toxins and dermal fillers, 29% of studied subjects had poor knowledge, while 61.5% had fair knowledge, and only 9.5% had good knowledge.

Included subjects aged 30-39 year had significantly higher rate of knowledge than that of other age group. (P value=0.011). Regarding the education, the rate of good knowledge among university level of education were found to be significantly higher than the rate of good knowledge among other educational group, (P value=0.001). Employed ladies showed significantly higher level of knowledge than the unemployed, (P value=0.011). Married ladies showed significantly higher level of good knowledge than other groups, (P value=0.003).

The rate of poor knowledge is 87.9% in subjects who did not undergo esthetic procedures, which was significantly higher than that in those who underwent these procedures, (P value=0.008) and as shown in figure (2) and table (3 and 4).



**Figure 2** Distribution of studied subjects according to knowledge level about botulinum toxins and dermal fillers

**Table 3** Association between demographic data and knowledge level about botulinum toxin and dermal filler

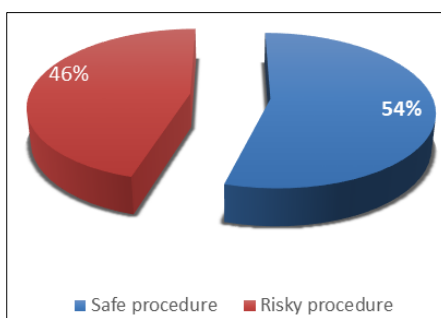
		Knowledge level						P value
		Good (no.= 38)		Fair (no.= 246)		Poor (no.=116)		
		n	%	n	%	n	%	
Age	<20 year	0	0.0	14	5.7	6	5.2	0.011
	20-29 year	10	26.3	62	25.2	30	25.9	
	30-39 year	22	57.9	98	39.8	32	27.6	
	40 year and above	6	15.8	72	29.3	48	41.4	
Education	Primary	6	15.8	106	43.1	46	39.7	0.001
	Secondary	10	26.3	92	37.4	52	44.8	
	University	22	57.9	48	19.5	18	15.5	
Occupation	Employee	24	63.2	92	37.4	46	39.7	0.011
	Unemployed	14	36.8	154	62.6	70	60.3	
Marital status	Single	4	10.5	38	15.4	10	8.6	0.003
	Married	34	89.5	182	74.0	82	70.7	
	Other	0	0.0	26	10.6	24	20.7	

**Table 4** Association between: knowledge level about botulinum toxin and dermal filler, and having history of esthetic procedures

		Good knowledge		Fair knowledge		Poor knowledge	
		no.=38	%	no.=246	%	no.=116	%
Did esthetic procedure previously	Yes	12	31.6	60	24.4	14	12.1
	No	26	68.4	186	75.6	102	87.9
	P value	0.008					

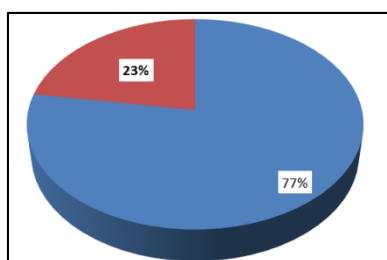
### 3.3. The Attitude

About 54% (218) of studied sample think that Botox and filler are safe procedures, that they might do it or already did it, while 46% (182) of studied subjects think that it is risky and would never do it (figure 3).



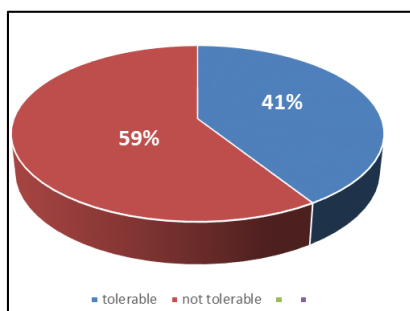
**Figure 3** Distribution of subjects according to their attitude regarding safety of esthetic procedures

Nearly 77% (310) of the studied subjects like to select high quality and cost injected material for esthetic procedures, while 23% (90) of subjects would choose average quality low cost, and as shown in figure (4).



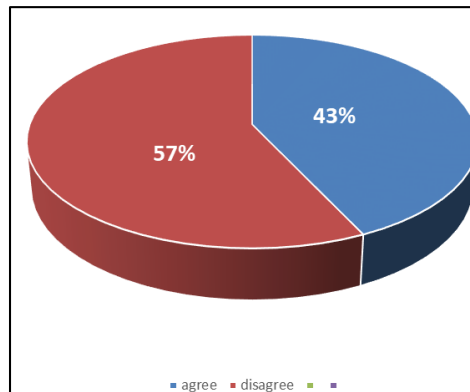
**Figure 4** Distribution of subjects according to quality selection of the injected material for esthetic procedures

About 41% (164 of the studied subjects), would prefer to suffer from injection pain just for more beautiful appearance, while 59% (236 of the studied subjects) would not, and as shown in figure (5).



**Figure 5** Distribution of subjects according to their tolerability to injection pain just for more beautiful appearance

Approximately 43% (172 of the studied subjects) agreed to spend a lot of money just for more beautiful appearance, while 57% (228 of the studied subjects) disagreed, and as shown in figure (6).



**Figure 6** Distribution of subjects according to their readiness to spend money for more beautiful appearance

Unfortunately, 27% of the studied subjects agreed to do esthetic procedures by person who had only experience in this field not a doctor.

The majority 51.9% of them think that the experience is above the academic certificate, while 29.6% of them, the cause behind their choice that, the cost is less and 18.5% of them the cause was that the beauty expert applies all client requests without objection (Table 5 and 6).

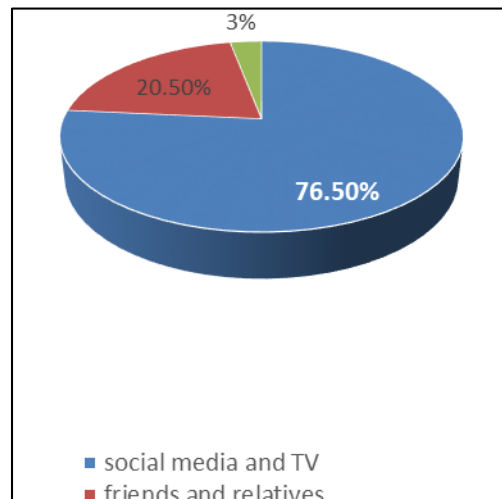
**Table 5** Distribution of studied subjects according to their attitude about the experience of esthetic procedures operator

		(No.=400) N	%
Agree to undergo esthetic procedures by person who had only experience in this field, not a doctor	Agree	108	27.0
	Not agree	292	73.0

**Table 6** Causes of the subject's choice for person who had only experience, not a doctor to operate their esthetic procedures

	(no.=108) n	%
Cost is less	32	29.6
The beauty expert applies all their requests without objection	20	18.5
Think that the experience is above the academic certificate	56	51.9

Television and social media formed 76.5% of the information sources and 20.5% from friends and relatives, while books reading, and academic education formed only 3%.and as shown in figure (7).



**Figure 7** Main source of information of the studied subjects about esthetic procedures.

#### 4. Discussion

It is worth noting that not all subjects involved in this study underwent cosmetic procedures, as only 22% of them claimed to practice filler and Botox for cosmetic reasons, this could be underestimated results because the primary health care centers attendants mainly unemployed and low socioeconomic status. The current study showed that 43.8% of those had cosmetic intervention are within the age group of 30-39 years, this might be attributed to that, this age is the time when people concern more about their look and appearance and the start of aging changes. It is comparable result to the local study in Baghdad 2021 which found 86% of those had cosmetic intervention are within the age group of 20-40 years [11]. The results showed that 84.4% of the women who underwent cosmetic procedures were married, this might be attributed to direct or subtle, indirect coercion by a spouse, or way for husband attraction, this goes with the results of the local study which showed 61% of the women who underwent cosmetic procedures were married [11]. In the present study, most women who underwent cosmetic procedures were employed (68.9%), the high rate of cosmetic procedures among employees may reflect the role of employment in this intervention as higher economic status among subjects may reflect a greater ability to access cosmetic procedures. This agrees with the results obtained by the local study which found most women who underwent cosmetic procedures were employed (74.3%) [12].

This study results were not significant to the educational level whether having history of esthetic procedures or not, this may be because most of the primary health care centers attendants are housewives and had relatively low education level. It is contrasting a study in Saudi Arabia which found most of the participants who underwent esthetic procedures were university level of education [13]. Also, 57 percent of the subjects with positive history of esthetic procedures in study in China were bachelors [14], and 60% of Iranian study subjects were bachelors [15]. Furthermore, this research result revealed that most of the women who underwent cosmetic procedures (76%) of them, considered as frequent practice of these procedures, and (24%) did it for one time only. This might mean that the first experience for some women was not very satisfactory. Probably it's faraway result to the local study in Baghdad 2021 which showed that 56% of the women had undergone cosmetic intervention for one time, 44% for two times and more [11]. Also, a study in Saudi Arabia showed that 46.6% of the sampled women reported having cosmetic procedures for three to six times, 24.6% less than three times and 28.8% for more than six times [14].

In this study, it was determined that most of participants had average level of knowledge about cosmetic procedures, constituting 61.5% of the studied subjects. Those with poor knowledge comprised 29.0% of the studied subjects; and only 9.5% had excellent knowledge level, which was expected finding, given that the majority of our participants held a primary degree. Comparable results were found at Saudi Arabia study Al Hindi et al. [15].

This study reported that most of the women (77%) preferred to use high-quality and cost injected materials, while only 23% of them chose to use injected materials of average quality and low cost, Actually, safety concerns and the quality of the injected material are major concerns, as this may affect the result of the procedures and carry a risk of complications. These study findings suggest a good level of practice among most of the studied subjects; According to the literature, patient safety in the unregulated world of esthetic procedures and plastic surgery is now an extremely serious global issue [16].

Furthermore, we reported that some of the women (41%) prefer to suffer from the pain of injection in order to get a better appearance, this is probably reflecting a lower sense of self-esteem among these subjects and their affection for the mass media and public figures, and as a result, they tried to search for such procedures to increase their self-confidence. A study conducted in Iran, revealed that young females were more likely to tolerate pain of cosmetic procedures in order to get prettier.<sup>[17]</sup> Regarding money expenditure and cosmetic procedures, in this study, about 43% of the studied subjects ready to spend a lot of money for more beautiful shape, which is comparable result to a Saudian study which found the majority of Saudi Arabians getting cosmetic procedures regardless to money expenses<sup>[13]</sup>.

Seventy-six percent of the 400 women who participated in this study had gained their information about cosmetic procedures from social media, which was the most common source of information as reported by participants. This result is comparable to that of a study conducted in Saudi Arabia where social media was found to be the most common source among their respondents<sup>[18]</sup>. Also, it is consistent with the findings of Al Hindi et al.<sup>[15]</sup> Most of the primary health care centers attendance is married unemployed women which differ in their attitude about Botox and fillers from universities students and employed women.

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## 5. Conclusion

The current study concludes that about one-quarter of the studied women (22%) performed Botox and filler procedures. The majority (96.8%) of subjects have positive past history of esthetic procedures. About (76%) of subjects with positive past history of esthetic procedures, have frequent practice.

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## Compliance with ethical standards

### *Acknowledgments*

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### *Disclosure of conflict of interest*

The authors declare no conflict of interest.

### *Statement of ethical approval*

Ethical approval for this study was done.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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