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KNOWLEDGE, ATTITUDE AND PRACTICE OF FEMALE STUDENTS TOWARD SMOKING: SAMPLE FROM IRAQI COLLEGES IN BAGHDAD CITY, 2024

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ABSTRACT

Background: The transition from adolescence to adulthood involves a variety of physical, behavioral, and social transformations, often including tobacco use. **Objective:** this study aimed to assess knowledge, attitude, and practice of female college students in Baghdad City toward smoking with examining the associations with some demographic features. **Methods:** a cross-sectional study with analytical element was conducted in multiple universities in Baghdad city, through the period (1st November\2023-31st August\2024) by using a pre-designed self-administered Arabic questionnaire which was modified from the **WHO Global Youth Tobacco Survey Questionnaire.[1]** The collected data reformulated by using Microsoft Excel to fit the coding, and analyzed by using SPSS v.27. Chi-square test for independence was used to test the significance of associations between discrete variables. Findings with P value less than 0.05 were considered significant. **Results:** The total sample was 182 participants with 20 smoking female student. The largest percentage of participants is from College of **Computer Engineering**, 32 (17.6%), from fourth grade 62 (34.1%), with Mean age 21.68 ±3.200, with most responding participants, 136 (74.7%), were between 21 and 24 years old, never married 175 (96.2%), lived in a family's house 179 (98.4%), and both parents alive and are living together 149 (81.9%). In terms of smoking status, 162 (89.0%) of the participants were non-smokers, 14 (7.7%) x smokers and only 6 (3.3%) were still smoking till the time of data collection. Most students, 156 (85.7%), answered D.M. incorrectly, 160 (87.9%) answered Lung Cancer correctly, when interviewed about the disease smoking can cause; 139 (76.4%) regarded smoking hookah as less harmful than smoking cigarettes, and 168 (92.3%) students regarded second-hand smoke as being harmful. Fair Overall knowledge, is the level of knowledge about smoking most female participants showed, which corresponds to 98 (53.8%), while 42 (23.1%) of participants had good overall knowledge and 42 (23.1%) of them had poor overall knowledge. The highest level of attitude toward smoking displayed through participants' support of a law that would prohibit smoking was established by 170 (93.4%) female students. While 12 (6.6%) did not prefer such a law. Most of them expressed a regretting feeling toward their own smoking behavior, which accounts for 13 (65.0%) students, while seven (35.0%) still proud of their smoking behavior. Displaying their perception about smoking, 168 (92.3%) students rejected the thought of a smoking future husband with similar value of students refusing to allow their future children to smoke, and half of the smoking participants, 11 (6.0%), mentioned the negative effect smoking causes on their pocket money. Seventeen, (85.0%) smoking students indicated that they did not encourage others to smoke despite their own smoking status. High attitude toward smoking had the greatest attitude level, with 160 (87.9%) students. "Friends" had the highest score (8 students, 40%) as the smoking motivating source; "psychological pressure" recorded by 10 (50%) students as the main reason for smoking initiation; the most popular smoking device among students was Cigarettes, 8 participants (40%); 15 (75%) chose to smoke in secret settings; 16 (80%) respondents stated not going to restaurants and coffee shops specifically to smoke; 15 (75%) smoking students stated less than a year smoking journey; 14 (70%) smoking students received no guidance from medical professionals about smoking cessation, and, 13 (65%) students, actually tried to quit smoking within the last 12 months.**Conclusion:** The highest percentage of smoking participants belonged to college of Literature, using Cigarettes, followed by E-Cigarettes then Hookah as the main tool of smoking.

Fathers, of most participants were smokers, whether previously or currently and regardless of smoking type with significant correlation with "Fair Knowledge Level". Friends were the main source of motivating participants toward smoking initiation; Psychological pressure, anxiety, depression, and curiosity were the main reasons of initiating smoking.

KEYWORDS: smoking, females, colleges, Hookah, E-cigarettes.

INTRODUCTION

A **KAP** survey means Knowledge, Attitude and Practices. **K:** Knowledge is a set of understandings, knowledge and of "science."." It is also one's capacity for imagining, one's way of perceiving. Knowledge of a health behavior considered to be beneficial, however, does not automatically mean that this behavior will be followed. The degree of knowledge assessed by the survey helps to locate areas where information and education efforts remain to be exerted.

A: Attitude is a way of being, a position. These are leanings or "tendencies to….". This is an intermediate variable between the situation and the response to this situation. It helps explain that among the possible practices for a subject submitted to a stimulus, that subject adopts one practice and not another.

P: Practices or behaviors are the observable actions of an individual in response to a stimulus. This is something that deals with the concrete, with actions. For practices related to health, one collects information on consumption of tobacco or alcohol, the practice of screening, vaccination practices, sporting activities, sexuality etc.[2]

Smoking behavior is the behavior that burns any of the tobacco products that are intended to be burned, smoked or inhaled including clove cigarettes, white cigarettes, cigars or other forms produced from the nicotina tabacum, nicotina rustica and other species or their synthetics whose smoke contains nicotine and tar, with or without additives.[3]

Young adulthood is a unique developmental period that occurs between the ages of 18 to 25 years, during the transition from adolescence to adulthood. This period is characterized by key developmental tasks that allow the young adult to participate in self-exploration to cultivate a personal identity and belief system, all the while gaining independence and autonomy. Young adults experience increased rates of preventable morbidity and mortality from motor vehicle accidents, homicide, sexually transmitted infections (STIs), substance use, and mental health issues.[4]

College students are challenged with having to keep up with the high demands required to thrive in the university environment. To meet these demands, students must be able to work and function under pressure. Generally, stressors are derived from academia load, classroom environment, faculty interaction, illness, and emotional concerns outside of the classroom. University students may be unprepared to face additional stressors associated with family, social, academic and financial burdens unique to this population. Stress further impacts students by negatively affecting a student's concept of self, e.g., self-worth, general health and immune factors.[5]

Smoking at an early age makes it difficult to stop smoking in adulthood. However, for those who quit using tobacco before the age of 30 years, many of the negative consequences of tobacco use are reduced.[6] In Korea, the decision to pursue the highest level of postsecondary education results in students completing their education more slowly, and the low employment rate in this age group delays their social transition into adulthood. Because of this, the period of time known as young adulthood—which denotes the passage from young adulthood to adulthood—is prolonged and delayed.[7]

Smoking is extremely addictive, and almost two thirds of those who try smoking eventually start smoking regularly. Most people start smoking before they turn 18 years old. Therefore, starting to smoke when young increase a person's risk of acquiring a smoking addiction and other smoking-related illnesses.[8]

Because tobacco use increases a person's risk of getting associated diseases, smoking reduces life expectancy by 10 years on average. People can also die from common health issues like pneumonia or from the surgical procedures included in the disease. Smoking is linked to aggressive behavior, criminality, theft, and higher medical expenses. There are evidently established links between smoking and disorders of the respiratory, cardiovascular, and cancer systems.[9]

Also, research has indicated that smoking cigarettes is linked to a higher risk of certain mental health conditions, such as suicide. Moreover, smoking and the risk of suicide have a dose-response connection, according to multiple meta-analyses of prospective studies.[10]

Thirty-One May is the World No Tobacco Day (WNTD). It is a theme conducted by WHO and public health champions from across the globe, coming together to raise awareness about the harmful influences of the tobacco industry on youth. The theme of WNTD 2024 is focused on advocating for an end to the targeting of youth with harmful tobacco products.[11]

Cigarettes are easily available in developing countries at relatively low prices. Cigarette ads in developing countries appear 81 times more frequently than in high-income countries.[3]

The smoking prevalence among university students in Erbil city/ Iraq, was considered to be high in 2022, which could be because the majority of students smoked for enjoyment or as a way to relieve stress, and it was higher among male students than female students, probably due to the un-acceptance of the community that prevents females from smoking. Also, students were more likely to use hookahs than other tobacco products.[12]

Although coffee shops with WPS facilities were once exclusively accessible to the wealthier segments of Iraqi society, young people can now easily access these establishments. Health officials and experts have not given the issue the required attention thus far, despite its growing severity and possible health consequences for smokers.[13]

Subjects and Methods

✿ 3.1. Study Design and Duration

A cross-sectional study with analytical element was conducted in multiple universities in Baghdad city, through the period (1st November\2023-31st August\2024), including 4 public universities (Baghdad University, Al-Mustansir-Iya University, Al-Nahrain University, and Iraqi University), and 4 private universities (Al-Mansour University College, Al-Rafi-Dain University College, Al-Maamoun University College, and Al-Salam University College).

✿ 3.2. Ethical Issues

After obtaining the ethical and scientific approval of the Arab Board of health specializations in Iraq, approval of the Ministry of Higher Education and Scientific Research comes next. A note was delivered from the Ministry of Higher Education and Scientific Research to all public universities of Baghdad city including: Baghdad University, Al-Mustansiriya University, Al-Nahrain University, and Iraqi University with a special note being sent to the Department of Private Education, and from there to the randomly selected private universities (Al-Mansour University College, Al-Rafi-Dain University College, Al-Maamoun University College, and Al-Salam University College). Then, for each university, whether private or public, to which the randomly selected college belongs, approvals also required. The time needed for each approval to be completed took from three days to one week.

✿ 3.3. The Instruments

! The Questionnaire

≅ **Data Collection**: data was collected from female college students using a pre-designed self-administered Arabic questionnaire. It was modified from the **WHO Global Youth Tobacco Survey Questionnaire[1]** by taking the opinion of two community physician experts (Dr. Riyadh Al-Jubouri, and Dr. Lujain Anwar). Their opinion was adopted to investigate the questionnaire built by the researcher to be used in the study. A pilot study was conducted through the period (1st January-10th February\2024) in two public Iraqi colleges, including, college of Civil Engineering\ Baghdad University, and college of Economics\Al-Mustansiriya University, including 20 participants to adjust the instruments and logistics, but no adjustments required and pilot was not included in sample taken. The code of confidentiality was kept throughout the study period. Data was collected through 1.5 months (26th of February-8th of April\2024) and the whole research period was done through the period (1st November/2023-31(St) August/2024).

≅ **Time**: the questionnaire took 15_20 minutes to finish answering.

≅ **Consent**: all participants were informed about their free will to or not to participate and that all of their answers will be switched to numbers reminding them of how fundamental their participation is to the community.

≅ The questionnaire consisted of the following **Parts** and their questions.

φ **PART ONE (Demographic Data)**

This part was built of **12** questions, including.

Q1\The college: eight colleges were selected randomly in a convenient way, including (College of Literature, College of Education, College of Tourism, and College of Computer Science, College of Law, College of Media, College of Administration and Economics, and College of Electricity Engineering). Four colleges were chosen from four public universities, including ((college of Education\Baghdad University, college of Literature\Al-Mustansiriya University, college of Computer Engineering\Al-Nahrain University, and college of Tourism\Iraqi University)) and four colleges were chosen from four private universities, including (school of Law\Al-Mansour University College, Economics\Al-Rafidain University College, college of Electric Engineering\Al-Maamoun University College, and college of Media\ Al-Salam University College).

Q2\Stage: the student should write the stage to which she belongs from stage one till stage four.

Q3\Age: which was categorized into 3 groups, as follows:

< 20 years old, (20_24) years old, and, ≥ 25 years old

Q4\ Marital Status: to be answered as:

Never married, currently married, or previously married

Q5\Residency: at family's house, at a relative's house, at a dormitory (a student's accommodation), or a private house.

Q6\ Questions regarding the student's parents' survival status

Both are alive and live together; Both are alive but separated; Only mother is alive; Only father is alive; Both are dead.

Q7\whether or not the student is a smoker

- Not a smoker (Never smoked before\smoked less than a 100 cigarettes)
- currently smoking (smoked 100 cigarettes and now smoking every day or somedays); or,
- previously smoking (smoked at least 100 cigarettes and quit for at least 1 month at time of interview)

Q8\ Level of education and smoking practice of the student's parents

Level of education (of both parents)

- Cannot read or write
- Elementary
- Intermediate
- Junior high
- University
- Higher certificate

Smoking practice (of both parents):

- Father's smoking practice (cigarettes; hookah; other types); answers for each choice are either: **(YES), (NO),** or **(PREVIOUSLY).**
- Mother's smoking practice (cigarettes; hookah; other types), answers for each choice are either: **(YES), (NO)**, or (**PREVIOUSLY).**

Q9\Smoking practice of other family members (brothers, sisters)

- Siblings' smoking practice (cigarettes; hookah; other types); answers for each choice are either: **(YES), (NO),** or **(PREVIOUSLY).**

Q10\ Number of smoking friends: No one; only one; or more than one

φ **PART TWO (Knowledge of female college students about smoking)**

This part was built out of **10** questions, Q11 (subdivided into questions), Q12, and Q13, as follows.

Q11,12,13\ Knowledge of female students about smoking.

- Whether smoking causes the following diseases, including (Stroke; Heart Attack; Asthma; D.M.; Infertility; Pregnancy Complications; Lung Cancer; Other cancers such as bladder and cervical cancer), answering all as **(YES), (NO),** or **(Do NOT KNOW).**
- whether the female student knows that smoking Hookah is as harmful as smoking cigarettes, answering as **(YES),** or **(NO).**
- Whether the female student knows the harmful effects of second-hand smoking, answering as **(YES),** or **(NO).**

Q14\Source of student's information

PHC center; friends and colleagues; books or magazines; private doctors' clinic; Doctors of specific clinics; studying; radio or TV; family and relatives; women conferences; internet and others.

φ **PART THREE (Attitude of female college students toward smoking)**

Q15,16,17,18,19,20\Attitude of female students toward smoking

(Does she support a law against smoking?); (Does she encourage others to smoke, if she is\was a smoker); (whether she is proud or regretting smoking if she is/was a smoker); (Does she accept her future husband to be a smoker); (Does she accept that her future kids be smokers?); (whether or not smoking affects students' financial status, if she is\was a smoker), answering as.

Q15	Yes, or No
Q16, 17, 20	Yes, No, Non-smoker
Q18, 19	Yes, did not think about, No

φ **PART FOUR (Practice of smoking of female college students)**

Q21-31\Questions for smoking female students only

(When did she start smoking?); (Does she still smoke or stopped smoking?); (If she stopped smoking, when?); (What does she smoke, cigarettes? E-cigarettes? Cigar? Hookah? Vape?); (Who encouraged her to smoke? A friend? A brother? A sister? Her mother? Her father? A relative? A neighbor? Others?); (Where does she smoke? A secret or a public place?); (Does she go specifically to restaurants or coffee shops to smoke?); (What motivated her to smoke? Because she enjoys it? Because smoking helps her focus better? Because of a psychological pressure? Anxiety? Depression? Curiosity? Feeling of maturity? Others?); (Did she get an advice to quit smoking from a doctor or a health care provider?); (Did she try to quit through the last 12 months?); and (How long did she quit the last time she tried?).

φ **PART FIVE (Questions for all female college students) …**

Q32/Any question or suggestion?

✿ 3.4. Sampling Technique

Upon obtaining the consents from the Head of a certain department of the randomly, conveniently selected college, by Lottery, with subsequent selection of a specific filled of study of each department, again in a randomized, convenient method through Lottery, with all four stages included, sufficient copies of the questionnaire and schedule of the students' lectures should be ready so that the researcher would know the time of beginning and end of each lecture. Before the teacher starts his\her lecture the researcher meets the teacher, taking his\her consent to talk to the female students. Upon receiving the consent, the researcher would meet the students, introducing herself, excluding the male students, explaining the whole process to the female students and that upon finishing answering the questions they should gather all the copies and give them to the responsible teacher.

There were four public colleges from the four public Iraqi universities (Baghdad University, Al-Mustansiriya University, Al-Nahrain University, and Iraqi University) where one public college was randomly chosen from each public university and they included, College of Literature, College of Education, College of Tourism, and College of Computer Science. On the other hand, four randomly selected colleges were chosen from four private universities which were also randomly selected. The randomly selected private universities were Al-Mansour University College, Al-Rafi-Dain University College, Al-Maamoun University College, and Al-Salam

University College and the randomly selected colleges were College of Law, College of Media, College of Administration and Economics, and College of Electricity Engineering. So, totally there were eight colleges, four public colleges and four private colleges.

✿ 3.5. Data entry and analysis

The study population included all female college students enrolled in chosen colleges. The total number of college students were 182, which was collected conveniently. These colleges were randomly selected. After data collection, all variables were checked for accuracy and completeness, coded and entered into a personal computer and analyzed using the SPSS program ver.27. Frequencies & percentages of variables calculated and tabulated. Also, some of them changed to figures, by using chi square test, and the association was tested (p value less than 0.05 considered as statistically significant)

✿ 3.6. Inclusion Criteria

all female college students of non-medical schools who present at the visiting day and accept to participate freely, whether smoking or not.

✿ 3.7. Exclusion Criteria

≅ any female college students of non-medical schools who present at the visiting day, but refused to participate

≅ Subjects not presenting at time of data collection

✿ 3.8. Female Students' coding data

≅ Knowledge questions (Q11-Q13) were coded as:

Incorrect answer	**1**	**no**	**No answer**	**Do not know**
Correct answer	**2**	**Yes**		

≅ overall knowledge scored as bellow

✓ Poor Knowledge **(10-13)**

✓ Fair Knowledge **(14-16)**

✓ Good Knowledge **(17-20)**

≅ Attitude questions (Q15-Q20) were coded as below.

Question No.	Answer 1	Answer 1 code	Answer 2	Answer 2 code
15	No	1	Yes	2

Question No.	Answer 1	Answer 1 code	Answer 2	Answer 2 code	Answer 3	Answer 3 code
16	Yes	1	No	2	Non-smoker	3
17	Yes	1	No	2	Non-smoker	3
18	Yes	1	Did not think about it	2	No	3
19	Yes	1	Did not think about it	2	No	3
20	Yes	1	No	2	Non-smoker	3

≅ And overall attitude scored as below:

✓ Low Attitude **(7-9)**

✓ Medium Attitude **(10-13)**

✓ High Attitude **(14-16)**

✿ 3.9. Strength and Limitations

≅ **Strength …**

This study could act as a baseline for other larger studies and could help stakeholders and decision-makers to strengthen smoking prevention strategies.

≅ **Limitations …**

 Time of data collection coincided with midterms exams of college students; so, most students were either reading or anxious from the tests.

 Many students did not answer all or some of the questions despite accepting to participate, and those have been excluded from the study sample.

 Fourth grade in many colleges, were not available at their colleges. They had clinical practice in schools, as in college of Education.

 Some of the professors refused to allow the researcher to explain the questions to the female students and data collection was done by them not the researcher herself.

RESULTS

Female college-students were distributed throughout the various academic fields. Every college's number of responders is displayed **(Table 1)**. The largest percentage of participants is from College of **Computer Engineering**, 32 (17.6%), from fourth grade 62 (34.1%), with Mean age 21.68 ±3.200, with most responding participants, 136 (74.7%), were between 21 and 24 years old, never married 175 (96.2%), lived in a family's house 179 (98.4%), and both parents alive and are living together 149 (81.9%).

Table NO. 1: Characteristics of the survey respondents (Demographic Data).

			Frequency	Percent%
Colleges	**1**	Literature	30	16.5
	2	Administration & Economics	24	13.2
	3	**Computer Engineering**	**32**	**17.6**
	4	Law	29	15.9
	5	Media	17	9.3
	6	Education	17	9.3
	7	Tourism	19	10.4
	8	Electricity Engineering	14	7.7
Each college smokers (out of the total sample)	**1.1**	**Literature's smokers**	**9**	**4.9**
	2.1	C. Engineering smokers	1	.5
	4.1	Law's smokers	4	2.2
	5.1	Media's smokers	3	1.6
	6.1	Education's smokers	2	1.1
	7.1	Tourism's smokers	1	.5
Grade	**1**	First grade	51	28.0
	2	Second grade	35	19.2
	3	Third grade	34	18.7
	4	**Fourth grade**	**62**	**34.1**
marital status	**1**	**Never married**	**175**	**96.2**
	2	Previously married	3	1.6
	3	Currently married	4	2.2
Marital Status of smoking participants	**1**	**Never married**	**20**	**100.0**
	2	Currently or previously married	0	0.0
Residency	**1**	**Family's house**	**179**	**98.4**
	3	Dormitory	2	1.1
	4	Private house	1	.5
parents living status	**1**	Both are dead	25	13.7
	3	Only mother is alive	4	2.2
	4	Both are alive, but separated	4	2.2
	5	**Both are alive and live together**	**149**	**81.9**
Age Categories	**1**	(18-20)	31	17.0
	2	**(21-24)**	**136**	**74.7**
	3	more than 24	15	8.2
		Total Sample	182	100.0

Seventy-one students (39.0%) have their fathers finished University as the highest level of education, and 46 students (25.3%) have their mothers finished Elementary as the highest percentage of education **(Table 2).**

Table NO. 2: Distribution of the female college students according to the level of education of their parents.

		Frequency	Percent%
Father's level of education	cannot read or write	6	3.3
	Elementary	24	13.2
	Intermediate	27	14.8
	Junior high	38	20.9
	University	**71**	**39.0**
	Higher certificate	16	8.8
Mother's level of education	cannot read or write	11	6.0
	Elementary	**46**	**25.3**
	Intermediate	42	23.1
	Junior high	41	22.5
	University	39	21.4
	Higher certificate	3	1.6

Regarding **students' fathers' smoking practice**, there were only 80 (44.0%) smoking fathers in total, with 61 (33.5%) fathers currently smoking cigarettes, 11 (6.0%) fathers currently smoking hookah, and 8 (4.4%) fathers currently smoking other types. While 16 (8.8%) fathers previously smoked cigarettes, 5 (2.7%) previously smoked hookah, and 3 (1.6%) previously smoked other types.

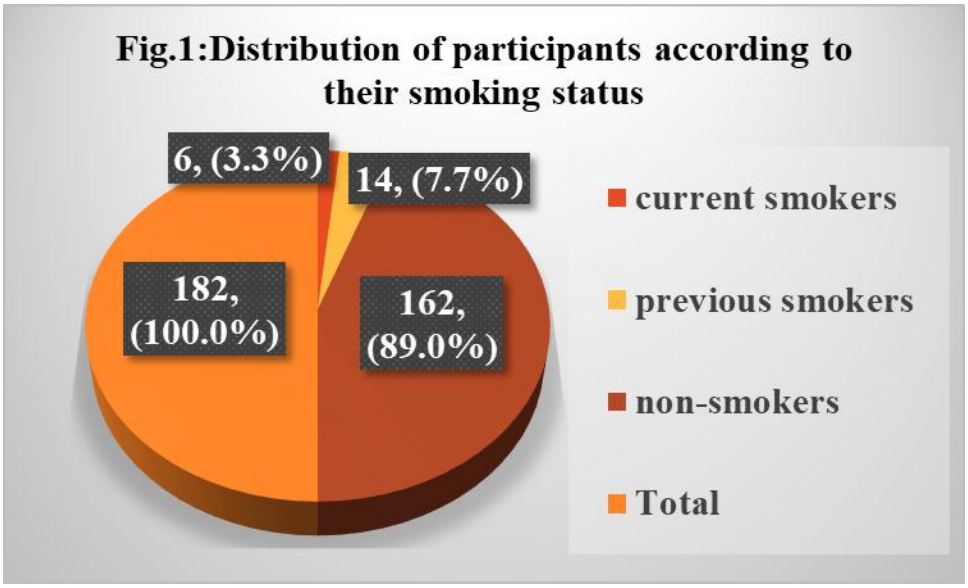
Regarding **students' mothers' smoking practice,** 177 (97.3%) participants' mothers did not smoke any type of tobacco products, while the remaining were still smoking cigarettes 3 (1.6%), and only 1 (0.5%) of them currently smoking hookah & other types equally. Also, only 2 (1.1%) of them previously smoked cigarettes, hookah & other types, each.

About **students' siblings' smoking practice,** 84 (46.2%) siblings were smokers, with 59 (32.4%) currently cigarettes-smoking siblings, 56 (30.8%) currently hookah-smoking siblings, and 19 (10.4%) siblings currently smoking other types. While 1(0.5%) sibling previously smoked cigarette, 2 (1.1%) siblings previously smoked hookah, and 3 (1.6%) siblings previously smoked other types. **(Table 3).**

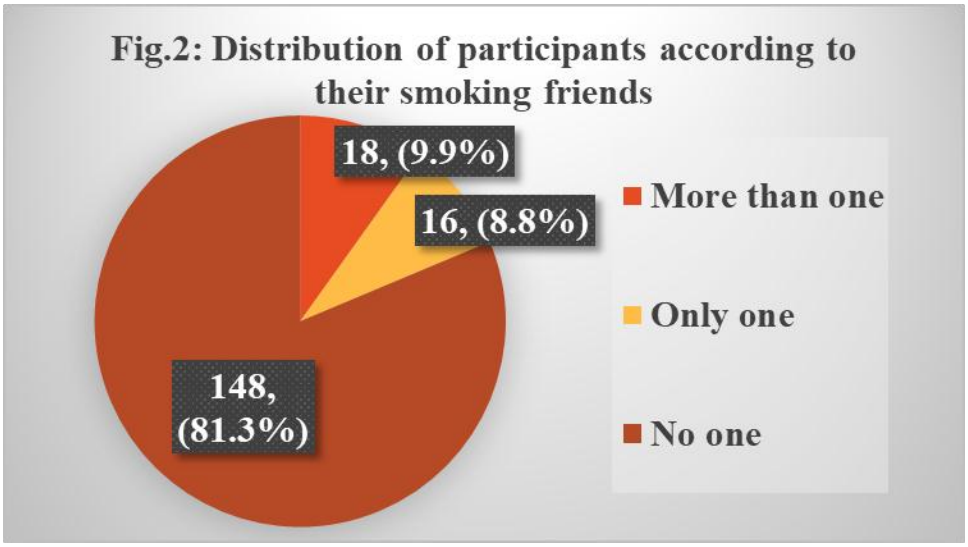
Table NO. 3: Distribution of respondents according to the smoking practice of their family members (Fathers, Mothers, Siblings).

		father's		mother's		Siblings'	
		N	**%**	**N**	**%**	**N**	**%**
Smoking any type now or previously	Yes	**80**	**44.0**	5	2.7	84	46.2
	No	102	56.0	**177**	**97.3**	**98**	**53.8**
Smoking cigarettes	No answer	4	1.9	1	0.5	4	1.9
	Yes	**61**	**33.5**	3	1.6	**59**	**32.4**
	Previously	16	8.8	2	1.1	1	.5
	No	105	57.7	177	97.3	122	67.0
Smoking hookah	No answer	10	4.6	8	3.7	5	2.3
	Yes	11	6.0	1	.5	**56**	**30.8**
	Previously	5	2.7	2	1.1	2	1.1
	No	166	91.2	179	98.4	124	68.1
Smoking other types	No answer	12	5.6	8	3.7	12	5.6
	Yes	8	4.4	2	1.1	**19**	**10.4**
	Previously	3	1.6	1	.5	3	1.6
	No	171	94.0	181	99.5	160	87.9

In terms of smoking status, 162 (89.0%) of the participants were non-smokers, 14 (7.7%) x smokers and only 6 (3.3%) were still smoking till the time of data collection. **(Figure 1).**



According to their smoking friends, most participants mentioned having no smoking friends 148 (81.3%), contrary to 34 (18.6%) having smoking friends: 18 (9.9%) with more than one friend smoking, and 16 (8.8%) have only one smoking friend (**Figure 2).**



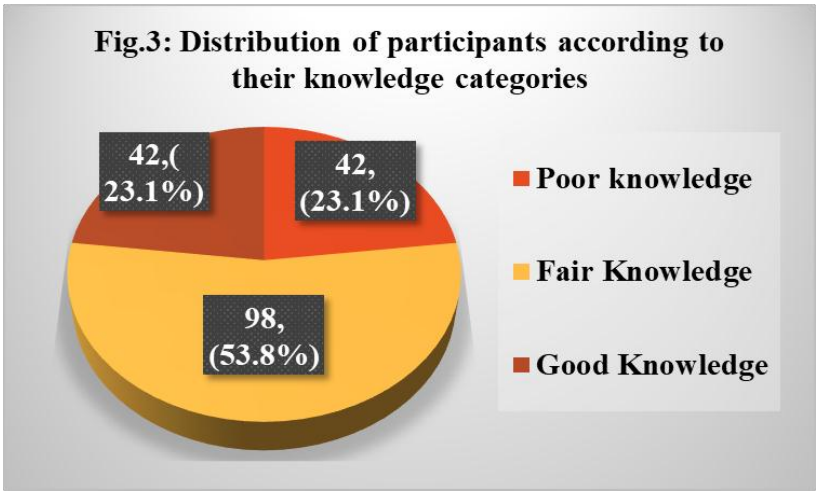
Knowledge of participants about smoking was tested through questions about diseases which smoking can cause, about which is less harmful if smoked, Hookah or cigarettes, and about the effects of second-hand smoking. Most students, 156 (85.7%), answered D.M. incorrectly, 160 (87.9%) answered Lung Cancer correctly, 139 (76.4%) regarded smoking hookah as less harmful than smoking cigarettes, and 168 (92.3%) students regarded second-hand smoke as being harmful. **(Table 4).**

Table NO. 4: Distribution of female students according to their knowledge about diseases caused by smoking.

		Incorrect answer		Correct answer	
		N	**%**	**N**	**%**
Diseases which smoking can cause	**Stroke**	**131**	**72.0**	51	28.0
	Heart attack	90	49.5	92	50.5
	Asthma	47	25.8	**135**	**74.2**
	Diabetes Mellites	**156**	**85.7**	26	14.3
	Infertility	**121**	**66.5**	61	33.5
	Pregnancy Complications	56	30.8	**126**	**69.2**
	Lung cancer	22	12.1	**160**	**87.9**
	bladder Ca. & uterus Ca.[1]	**128**	**70.3**	54	29.7
Hookah versus Cigarettes[2]		**139**	**76.4**	43	23.6
Others' smoke[3]		14	7.7	**168**	**92.3**

Total = 182
1= Ca=cancer
2= whether smoking hookah is less harmful than smoking cigarettes
3= whether smokers' smoke is harmful or not to other individuals including the student herself

Fair Overall knowledge, is the level of knowledge about smoking most female participants showed, which corresponds to 98 (53.8%), while 42 (23.1%) of participants had good overall knowledge and 42 (23.1%) of them had poor overall knowledge, as shown in **(Figure 3).**



P-value represents the statistical significance of the data. Having smoking fathers indicated a strong correlation with the female participants' fair knowledge about smoking with a P-value equals to (0.04). **(Table 5).**

Table NO. 5: Distribution of participants according to the association between students' family members' smoking practice and students' level of knowledge.

		Overall, Knowledge			Total	P value
		Poor	Fair	Good		
		42	**98**	**42**	182	
number of smoking friends	More than one	3	9	6	18	0.123
	One only	3	7	6	16	
	No one	36	82	30	148	
Father smoker	Yes	11	45	24	80	0.04
	No	31	53	18	102	
Mother smoker	Yes	0	3	2	5	0.184
	No	42	95	40	177	
Sibling smoker	Yes	16	45	23	84	0.127
	No	26	53	19	98	

Internet was the primary information source of participants, with 137 (73.3%) relying mostly on the network to obtain the information they require. The second highest percentage of students, 96 (52.7%), cited their **Relatives and Families** as their primary information source. **(Table 6).**

Table NO. 6: Distribution of participants according to their sources of information about smoking.

	Information source			
	Yes		No	
	Frequency	Percent	Frequency	Percent
PHC centers	37	20.3	**145**	**79.7**
Doctors of private clinic	35	19.2	**147**	**81.8**
Family and relatives	**96**	**52.7**	86	47.3
Friends and colleagues	65	35.7	**117**	**64.3**
Studying	82	45.1	**100**	**54.9**
Women conferences	24	13.2	**158**	**86.8**
Books or magazines	72	39.5	110	60.4
Radio or TV	52	28.6	**130**	**71.4**
Internet	**137**	**73.3**	45	24.7
Others	5	2.7	**177**	**97.3**

The highest level of attitude toward smoking displayed through participants' support of a law that would prohibit smoking was established by 170 (93.4%) female students. While 12 (7.4%) did not prefer such a law. **(Figure 4)**

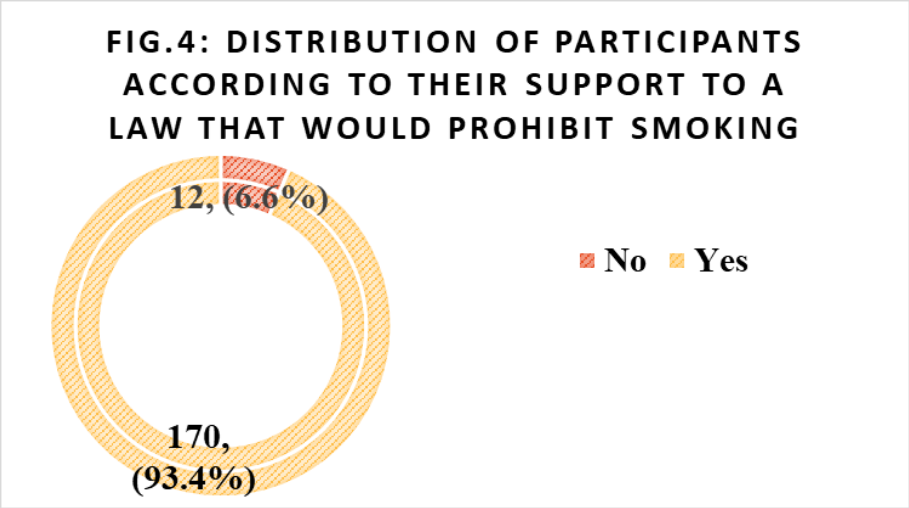


Figure 5 is explaining the attitude of the smoking participants toward their smoking behavior represented by them feeling proud or regretful. Most of them expressed a regretting feeling toward their own smoking behavior, which accounts for 13 (65.0%) students, while seven (35.0%) still proud of their smoking behavior.

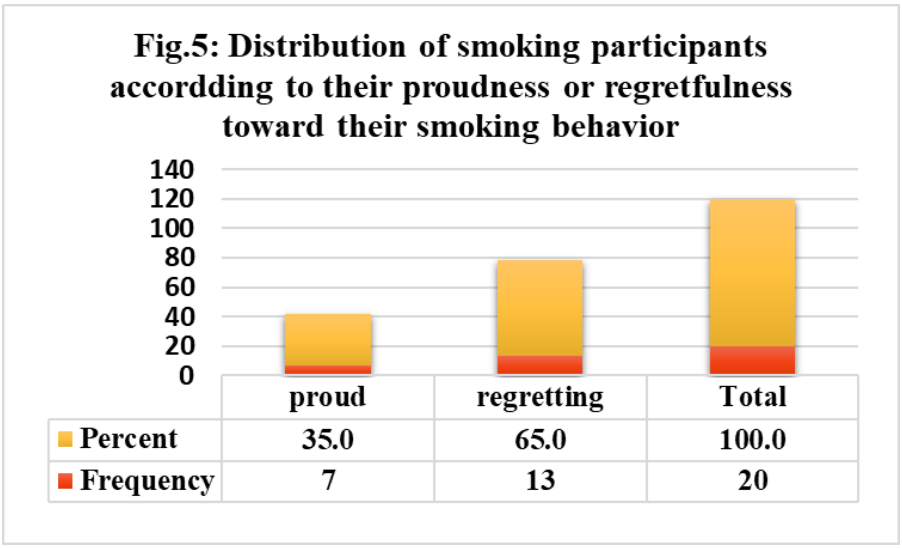


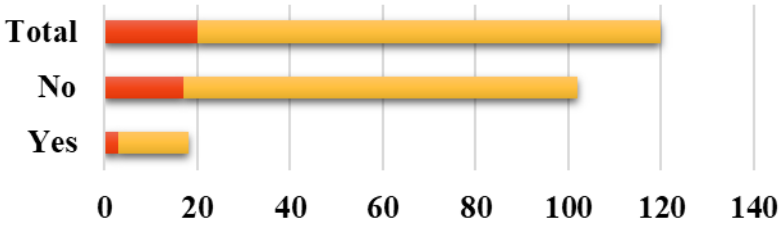
Table 7 displays the participants' perceptions about smoking and how those perceptions are expressed in their attitudes. Out of the female students, 168 (92.3%) rejected the thought of a smoking future husband, 168 (92.3%) expressed their refusal to allow their child to smoke, and half of the smoking participants, 11 (6.0%), mentioned the negative effect smoking causes on their pocket money.

Table NO. 7: Distribution of participants according to their attitude toward smoking.

		N	%
Accepting a smoking future husband	Yes	12	6.6
	I did not think about it	2	1.1
	No	168	92.3
	Total	**182**	**100.0**
Accepting a smoking future child	Yes	5	2.7
	I did not think about it	9	4.9
	No	168	92.3
	Total	182	100.0
whether or not, smoking affects the smoking female student financially	Yes	11	55.0
	No	9	45.0
	Total	**20**	**100.0**

The total number of smoking participants is 54 and are classified into two groups based on whether or not they promote smoking among others. Seventeen 17 (85.0%) of the responding female smoking students indicated that they did not encourage others to smoke despite their own smoking status. **(Figure 6)**

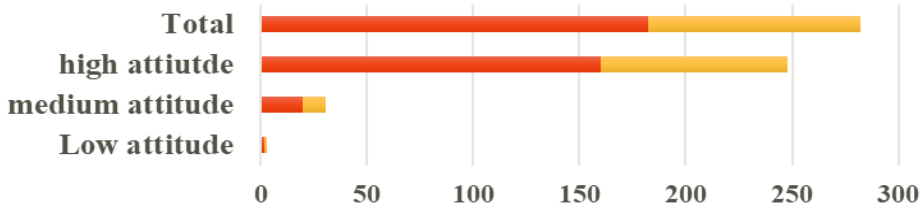
Fig.6: Distribution of smoking participants according to them encouraging others to smoke



	Yes	No	Total
Frequency	3	17	20
Valid Percent	15.0	85.0	100.0

The attitude of the participants regarding smoking is explained furtherly in **Figure 7**. As depicted in the picture, the levels fall into three categories: **Category One** denotes a **low** attitude level, **Category Two** denotes a **medium** attitude level, and **Category Three** denotes a **high** attitude level. Figure 6 makes it evident that Category Three had the greatest attitude level, with 167 (77.3%) students.

Fig.7: Distribution of participants according to their overall attitude level



	Low attitude	medium attitude	high attiutde	Total
Frequency	2	20	160	182
Percent	1.1	11.0	87.9	100.0

Three smoking practices—motivation sources, reasons to start smoking, and forms of smoking—are described in **Table 8\Part 1.** In terms of **Smoking Motivation**, which measures the persons who might have encouraged smokers to take up the habit, friends had the highest score (8 students, 40%).

The second item that Table 8 displays is the **reasons why people initially start smoking.** According to the data, psychological pressure was the most frequent reason given by 10 (50%) of the participants for starting to smoke.

The **types of smoking** that the respondents utilized was the third and final topic that the table addressed. The smoking students who responded most frequently used Cigarettes, E-cigarettes, and Hookah, in that order. Most of them, 8 participants (40%) utilized Cigarettes; 7 students (35%) used E-cigarettes; and 5 students (25.0%) used Hookah. Thus, the most popular smoking device among the female college participants was Cigarettes.

Table NO.8\Part 1: Distribution of smoking participants based on their smoking habits, motivations, and reasons for initiating smoking.

		Yes	%	Not	%
Smoking motivation source (encouraged to smoke by …)	Friend	8	40.0	12	60.0
	Brother, Relative	2	10.0	18	90.0
	Neighbor	1	5.0	19	95.0
	Father, mother, a sister, or a colleague	0	0	20	100.0
	Others	4	20	16	80
Causes of smoking initiation	Because I enjoy it	8	40	12	60
	Helps me focus better	1	5.0	19	95.0
	Psychological pressure	10	50	10	50
	Anxiety	9	45	11	55
	Depression	7	35	13	65
	Curiosity	9	45	11	55
	Feeling of maturity	3	15	17	85
	Others	1	5.0	19	95
Smoking type	Cigarettes	8	40	12	60
	smoking E- cigarettes	7	35	13	65
	Smoking cigar	2	10	18	90
	smoking hookah	5	25	15	75
	smoking vapes	0	0.0	20	100
	Smoking others	0	0.0	20	100
	Total	**20**		**100.0**	

The remaining questions that smokers had to respond to in order to finish the survey are included in **Table 8\Part 2.** There were two generic terms used to describe possible smoking locations for female participants: secret and public. Of the 20 smoking participants, 15 (75%) chose to smoke in secret settings.

Students were then required to provide more precise answers about their relationship to their occasional visits to restaurants and coffee shops where they share their habit of smoking, and 16 (80%) respondents stated they would not do such an act even though they are smokers themselves.

The table's third section describes the moment when smoking started, and 15 (75%) smoking participants stated the beginning of smoking journey by less than a year duration.

Getting helps to stop smoking is a crucial component of quitting smoking, and this responsibility falls on medical professionals. The community's attempts to save smokers are reflected in the information obtained from people who smoke. Of the 20 participants that smoked in total, 14 (70%) smoking female students said that they had not received such guidance, either from a physician or from a health care professional.

People who smoke have a positive health-related mindset that stems from their extensive research and understanding of smoking's negative effects on health, which is demonstrated when they attempt to quit. If one were to pay closer attention to the table, one would see that the question is asking about two different aspects: the time period—the last 12 months—and any attempts to quit, if ever tried. Giving specific timeframes is crucial for evaluating a smoker's motivation and preparedness for a permanent stop, and a smoker who has attempted to quit in the past year may be more receptive to different types of support.

The table shows that the smoking participants are split into three groups based on the choices they made. The group with the highest value was made up of smokers who had actually tried to quit within the last 12 months which included 13 (65%), **(Table 8\Part 2).**

Table NO. 8: Part 2: Distribution of the participants according to their smoking practice.

		Frequency	Percent
When started to smoke?	less than a year	15	75.0
	(1-6) years	5	25.0
Still smoking?	Yes	5	25.0
	Previously	15	75.0
Stopped? When?	still smoking	5	25.0
	less than a month	2	10.0
	(1-6) months	11	55.0
	6 months- 1year	2	10.0

Smoking place	Public	5	25.0
	Secret	15	75.0
Restaurants and coffee shops	Yes	4	20.0
	No	16	80.0
got an advice to quit?	No	14	70.0
	Yes	6	30.0
tried to stop last 12 months?	No	7	35.0
	Yes	13	65.0
	Total	20	100.0

DISCUSSION

This study illustrated the awareness, perspective, and behavior of–Iraqi female college students on smoking. The purpose of the study was to evaluate the knowledge, attitudes, and practices of female college students in Baghdad regarding smoking and to investigate any correlations that may exist between these variables and certain demographic characteristics. The results of this study show that, 182 female college students enrolled in this study, with 20 smoking female students out of the total sample √Regarding age … More than three quarters of participants fell between the 20–24 age group, per the study's findings. When someone looks more closely at the educational system in our nation, this is highly expected. Students in our nation often graduate from high school between the ages of 17 and 19, begin their college careers in their early 20s, and finish most Iraqi colleges in their mid-20s.

√According to college distribution … College of **Computer Engineering** included the largest number of participating student (32 female responders), followed by **College of Literature**, which included 30 participants. Most smoking participants belonged to **College of Literature** (9 smokers), followed by **School of Law** (4 smoking participants). This could be explained by the effect of field of study. A study done by **Department of Sociology and Department of Psychology, National Chengzhi University, Taipei City, Taiwan, 2020**[14], analyzed the associations between college fields of study and trajectories of three substance use behaviors: smoking, heavy alcohol use, and marijuana use. According to the study, not all college majors exhibit the same degree of substance use behaviors throughout time, and the relationships also differ depending on (1) the particular substance use behavior that was looked at and (2) the gender of the participant. These results imply that it is crucial to take into account the possibility that the various learning and educational environments offered by college majors may potentially be more or less conducive to particular health behaviors, such substance abuse.

√According to grade distribution … As the results have displayed, fourth grade recorded the largest number of students, followed by the first grade. First and fourth grades represent the extremes of important transitional periods. First grade represents a transitional time from adolescence to young adulthood, and fourth grade represents a transitional time from young adulthood to adulthood; both periods are associated with a lot of stress and maturity, presenting an important factor to initiate smoking. This finding is not in agreement with an investigation performed in **Hodeida University, Yemen, 2019**[15]**,** according to which, smoking prevalence rose noticeably with academic years; as a result, third- and fourth-year senior students smoked more frequently than junior students did. This conclusion might be the result of senior students' extended exposure to older smokers in the university setting, including friends, instructors, staff, and other people who could have a large impact on their opinions.

√According to Marital Status distribution … all of the 20 smoking participants were never married. Smoking rates tend to be higher among those who are not married, which could be explained by single students having high level of stress or by peer's influence. Therefore, it is important to understand whether this factor influences smoking cessation. Previous research on the role of marital status suggests that being married or living with a partner lead to a higher likelihood of quitting smoking and that having a non-smoking partner also increases the chances of quitting. There is also some suggestive evidence that having a partner who quits smoking may have a greater influence over smoking cessation than having a partner who is a non-smoker; agreed with a study in **UK, 2019**[16]**,** which showed that smoking cessation is strongly influenced by the smoking behavior of spouses and partners. Similar findings agreed with in a study in **Hodeida University, Yemen, 2019.**[17]

√According to Residency … To highlight this factor's impact on young adults' and teenagers' smoking behavior, it must be linked to other factors. A female student living in a dorm or other type of student housing may have easy access to cigarettes and consequently exhibit negative smoking behaviors. A female college student who lives with her family will undoubtedly be influenced by the smoking habits of her parents and other family members. **Gfroerer et al.** also came to the conclusion that college students in the US who lived with their parents were less likely to smoke than students who did not. The reason may be that students who live with their families are less socially, emotionally and psychologically stressed than those who live abroad in dormitories and hence more susceptible to smoking.

√Parents living status … More than half of the participants have both parents alive and live together and

this finding has a positive preventive effect in smoking behavior. parental presence decreases risk taking, associated with decreased reward-related activity and increased cognitive control. Parental absence, due to death or separation from a parent, has been associated with smoking and alcohol consumption in adolescence and adulthood. A cohort study that was done in **University College London, UK, 2016[18],** agreed with this finding. Another study agreed with this finding was done in **Department of Psychology and Neuroscience, University of North Carolina, USA, 2018.[19]**

√Parents' Level of Education … While one third of participants' mothers have completed the "elementary" level of education, about one quarter of participates' fathers have earned a "university" level of education. Accordingly, earlier results on the associations between parents' level of education (as a part of a family's socioeconomic background) (SES) and adolescent smoking behavior are inconsistent. Some studies show no or slight associations; others report that low socioeconomic status correlates with higher smoking frequencies. This could be explained by that even though higher parental education and higher family income are protective against adolescent smoking, their influences might be indirect and mediated by other factors.

√Parents' and siblings' smoking practice … In contrast to their mothers' smoking practice, which did not appear to have as much influence, the study's findings indicate that the smoking practices of fathers and siblings have a significant impact on the knowledge of the participating females. This is actually expected. In our country, it is, especially to the second generation, a stigma for a woman to smoke, making the number of smoking mothers slight and maybe none, thereby, for a female to be openly smoking, it requires the acceptance from a male guardian, a father or a brother, and both recorded the highest values of currently or previously smoking family members in this study. Disagreed with this finding was in a study in **Turkey, 2021[20]**, where the effect of parental attitudes in boys compared to girls were not as consistent. Adolescents were at a greater risk of smoking where one parent smoked rather than both. The effect was higher in magnitude where the smoking parent was the mother and not the father, which may be related to their culture.

√Smoking Status … Only 20 students of the participants have been found to be smokers in this study, ranging between currently smoking and previously smoking who recorded the highest value. This could be explained by the disparities in our culture and nation's societal acceptance of smoking among men and women and also by the sample size. Additionally, smoking patterns, attempts, and intentions to stop are influenced by religious beliefs. Moreover, a study that was conducted in Saudi Arabia, 19 April, 2019, added one more reason to the previously mentioned in the present study, which was a limited access to female participants in the KSA, as it was culturally unacceptable for a male investigator to survey female students.[21]

√Smoking Friends … Three-fourth of the responding female students, mostly non-smokers, had no smoking friends when the survey divided the students based on how many they had. According to data from the remaining quarter, mostly are smokers, most female college students who were part of the survey had more than one smoking companion, which makes sense. This means that the participants are sensitive to friends who smoke, and also within a wider network of friends. This finding is agreed upon in a study in **Indonesia, 2021.[22]** A study in **Jakarta, 2021[23],** also agreed with this study by finding a significant relationship between respondents' knowledge and peer influence with smoking behavior in AL-Hasra Senior High school. Another study in **USA, 2021[24],** agreed that most teens get their first vaping product from a friend and recount that their first vaping experience was with friends and older friends and acquaintances play an advisory role to the newly initiated vaper. A report from the Centers for Disease Prevention and Control **(CDC), 2019[25],** indicated that peer pressure to use harmful substances is an example of the circumstances that affect college students' health.

√Knowledge about diseases caused by smoking … Asthma and Lung Cancer were the diseases caused by smoking listed in this study which held the highest record as to be known by the participants indicating good knowledge of the respondents about the diseases most commonly caused by smoking. However, when focusing on the other diseases, most students expressed poor knowledge. This finding highlights the necessity of health-promoting and bolstering initiatives to maintain and grow Iraqi university students' already-present unfavorable sentiments regarding smoking. Health Literacy ***"representing the personal knowledge and competencies that accumulate through daily activities, social interactions and across generations; Personal knowledge and competencies are mediated by the organizational structures and availability of resources that enable people to access, understand, appraise, and use information and services in ways that promote and maintain good health and well-being for themselves and those around them"*** was studied by the **University of Science and Technology, Jordan, 2019[26],** as college students often find themselves in high-pressure environments, making it essential for them to possess a sufficient level of health literacy to make appropriate decisions regarding their health.

√Knowledge of students regarding the harmful effects of smoking Hookah compared to smoking cigarettes … Three-quarters of them displayed incorrect answer, acknowledging that smoking Hookah is less harmful than smoking cigarettes. The remaining one quarter, however, held the correct answer, which could be explained by the poor knowledge those students have regarding the harmful effects of Hookah compared to other tools of

smoking. Also, it is more socially acceptable and attractive form of tobacco use when compared with cigars and cigarettes, especially for females. This finding is agreed with in a study in **UAE, 2019[27],** where peer influence and enjoyment were the two most significant reasons of smoking Hookah. Another study that was performed in **Department of Nutrition and Food Science, Wayne State University, Michigan, USA, 2020[24],** discovered several justifications for the young adult population's perception that hookah smoking is less dangerous than cigarette smoking. These investigations revealed that the tobacco mixture used in hookahs contains fruit tastes and molasses, which give the smoke a safe, pleasant scent. This may give the idea that smoking hookah is safer than smoking cigarettes, together with the notions that the water in the hookah filters the noxious components of tobacco smoke and that hookah smoking is less addictive. Manufacturers of accessories for hookahs fail to properly label their packets with warnings about the dangers of smoking. Internet hookah advertisements also typically omit the tobacco-related warning. Education, gender, and income are some variables that have been proven to affect how hazards associated with smoking are perceived. Additionally, the definition of smoking dangers differs from person to person and is impacted by the social and cultural makeup of a community.

√Knowledge about second hand smoking … More than three-quarters of participants choose the correct answer regarding the harms of secondhand smoke indicating adequate knowledge about secondhand smoke (SHS) or passive smoke. Similar findings found in research in **Jeddah, Saudi Arabia, 2020.[28]** And study conducted in **Jakarta, Indonesia 2020.[29]**

√Students' Overall Knowledge … "Fair Knowledge" was the highest level the participants recorded, constituting a little more than half of the respondents, followed by "Poor Knowledge" level and 'Good Knowledge' level, both recording the same value. This finding is unfortunate, since the population the study delt-with was college students, indicating that Iraqi college students require specific education programs regarding smoking-related issues.

√Correlation between SHS exposure and level of overall knowledge … Smoking fathers and smoking brothers were the only source of SHS exposure that had a significant correlation with participants' overall knowledge, with a P-value of (<0.05). The indoor versus outdoor exposure hypothesis could help to explain this. Given that females are more likely than males to spend their time indoors and that fathers and brothers are perceived as family members who smoke more frequently than mothers and sisters, especially in our culture, it makes sense that the participants would have learned more about SHS from their fathers and siblings—particularly their brothers, and the greater the number of smokers living at home, the greater the intensity of SHS exposure, while the absence of correlation between mothers' smoking and the participants' knowledge indicates that mothers are more likely to be protective factor against smoking. However, an investigation that was carried out in **Kobe university, Japan, 2020[30]**, showed a noticeable peer influences on adolescents' smoking and drinking behaviors, in contrast to the minimal connection observed between the behaviors, attitudes, and knowledge regarding smoking and drinking among parents or guardians and the adolescents' experiences with smoking and drinking. A study in **USA, 2019[31],** concluded that concordance with sibling use is generally stronger than with parental use, likely due to the more peer-like relationship between siblings. Indeed, sibling effects may be larger for same-gender siblings, siblings close in age and those with a strong sibling relationship. Additionally, older siblings may be an important source of substances for younger siblings, particularly at early ages when adolescents and their same-age peers have more limited access to substances. Another study in **Bangladesh, 2021[32],** found students whose mothers were in business had a 4.1-fold higher chance of starting to smoke than students whose mothers were housewives or in the service. This could be the case because women in business might not have as much time as housewives or those in the service to care for their children.

√Students' sources of information about smoking … Internet was the source of information participants used mostly. This is actually expected as technological revolution has taken place in recent years, especially internet access, and consequently, the easy access to health-related information. In addition to that, females spend less free time compared to males, with more parental restrictions and supervision, making them spend more time at home, and more time spending on internet resources. In a study performed in **China, 2021[33],** using the internet to obtain a health-related information was termed as HISB (Health Information Seeking Behavior) which comes in agreement with this study finding, with another study in **USA, 2018[34],** which investigated the resources college students use when exercising health information seeking behavior (HISB). Females were more likely to use the Internet for health information, to consult a health or medical professional, and to confirm the health information.

√A law prohibiting smoking … More than two-thirds of the participants showed favorable attitude toward the presence of a law prohibiting smoking, especially in public spaces. This correlation implies the possibility of achieving more extensive enhancements in the wellbeing of students. Policies are more likely to be accepted and followed when pertinent health messages are made more widely known and the negative effects of SHS exposure are emphasized. This finding was observed in **UK, 2020[35],** coming in agreement with this study. Another study that was performed in **Hong Kong, China, 2020[36],** showed that support for tobacco control policies

in Hong Kong adolescents was weak to moderate and for most of the tobacco control policies, support in girls was stronger than that in boys.

√ Proud or regretting smoking …Two-thirds of the smoking female participants demonstrated regret toward smoking. This could be explained by that most smokers do so in situations they consider emotionally difficult, which means smoking help them to calm down and reduce the negative effect such as sadness or anxiety. Thereby, they depend on smoking to regulate the negative effect a certain situation may exert, then returning back to subject social stigmatization represented by regret. This comes in agreement with a study performed in **Poland, 2019[37],** which demonstrated that individual psychological health factors may play a key role in the development of the smoking negative behavior. Another study about the consumer emotions in the marketplace that was researched about in **April, 2019, Florida, USA.[38]** The purpose of this research is to investigate the reasons behind consumers' failure to feel regret following unhealthy consumption. The study specifically examined how regret is felt differently after unhealthy consumption than it is anticipated before.

√Accepting the idea of having a smoking future husband and children … More than two thirds and a half participant refused the idea of having a future smoking husband and/or child. This is actually referred to as "Social Control". Social Control can be defined as an interaction that involves explicit attempts to regulate, influence and constrain the other's behavior. Social control has been proposed as one of the mechanisms that could explain the benefits of marriage on health. Because non-smoking spouses are more supportive of attempts to quit than smoking spouses are, having a non-smoking spouse may influence one's smoking behavior. A study conducted in **Indonesia, 2020[39],** and another performed in **Scotland, UK, 2019[40],** both demonstrated how wives and husbands exert social control to accommodate and adapt their smoking.

√Smoking-related financial outcomes … According to the study, there is no discernible link between a female college student's financial situation and smoking. This discovery is mostly the consequence of an Iraqi female student's dependence on her parents, if she was still single, or on her spouse, if she was married. In addition, she would primarily not be working because she is still a student. However, students can easily afford the inexpensive price of cigarettes. This facilitates the purchase of cigarettes by students, allowing them to experiment with smoking and eventually become regular smokers, without being noticed by their families. A well-known tactic employed by the tobacco industry to target youth is to keep cigarette pricing low.

√ Encouraging others to smoke … Almost all of the smoking female participants displayed their refusal to encourage others to smoke. This finding could be explained by the fact that in our culture and society, it is a stigma for a female to smoke, making a smoking female student unable to motivate her friends to smoke, where they may even do not know about her smoking behavior. Secondly, she would be a good source for others to learn the negative consequences of being a smoking female. A study in **Indonesia, 2021[30],** showed that teenagers who have friends who smoke also tend to act similarly since they feel more at ease sharing similar traits with them.

√ High attitude and Fair-Poor knowledge about smoking of female college students … Responders recorded about three-quarters and a half percentage of "high level attitude", compared to about half percentage of "fair knowledge" in regard to smoking. The hypothesis of cultural expression, especially, being a Muslim and a female, could be the main reason behind the high level of female students' attitude. Coming in agreement with this study's finding is research that was studied in **Indonesia, 2021.[30]**

√Students' motivation of smoking initiation … 'friends' was the main motivation source to initiate smoking in participants.

√Students' personal reasons for initiating smoking … College students are usually under stressful pressure, being under all those aspects of that transitional period from their families' close supervision to a new environment. Students are heavily influenced by expectations and abilities to cope with and to adjust to the highly competitive and challenging new environment. A study in **U.S., 2019[41],** displayed that curiosity and susceptibility were significantly higher in females than in males. The study also showed that curiosity and susceptibility toward a certain tobacco product such as hookah, were higher in students who have never smoked but indicated a household member that used tobacco product than in never smoked before students who did not indicate usage of tobacco product by any household member. These socio-demographic differences emphasize how crucial it is to make sure that teaching initiatives about the risks associated with using alternative tobacco products successfully reach all demographic groups, especially those who are most susceptible and have the largest burden of curiosity.

√Types of smoking … Hookah was the most common type of tobacco product participating female students used in this study. According to what was previously demonstrated about respondents' knowledge, more than three quarters of students mentioned that smoking hookah is less harmful than smoking cigarettes, and so, poor knowledge about the harmful effects of smoking hookah explains the reason why it was the most common smoking type among participants. This comes in agreement with a study in **Turkey, 2020.[42]** Hookah smoking college students were less aware of its harmful effects, and cigarettes smoking students were more likely

to smoke hookah. Similarly, a study in **Brazil, 2022[43],** discovered that smoking cigarettes greatly raised the likelihood of trying and using hookah, suggesting that one smoking modality predisposes one to the beginning and maintenance of another smoking modality. Apart from stating that hookah can be unhealthy, the collected data indicated that misconceptions regarding the toxicity, addictive potential, and harmfulness of hookah were linked to the act of trying and, more importantly, to being a user. Students who had previously tried hookah and those who identified themselves as users tended to think that smoking hookah would not be as addictive as smoking cigarettes, that people could quit smoking it whenever they wanted, that water could filter the toxins in the smoke, and that they would be less harmful than smoking cigarettes overall. Smoking E-cigarettes comes next in the present study, which might also be explained by poor knowledge students may have about the harmful effects of E-cigarettes. A study in **China, 2021[44],** revealed that undergraduates had the highest rate of cigarette and e-cigarette use.

√The place where students smoke … Choosing a private location to smoke was stated by more than two-thirds of smoking participants who smoke. This is to be anticipated; as was previously noted, smoking in public is stigmatized in our culture, particularly for Muslim women. A study that was performed in **Jordan, 2021[45],** disclosed that smoking Muslim, female university students smoked 'in secret', hiding their smoking behavior, but were stubborn to continue because they were not able to cope with stress that was coming from university environment and examinations.

√Going to restaurants or coffee shops specifically to smoke … More than two thirds of the smoking participants reported refusal to go to restaurants or coffee shops mainly to smoke. Being indoors most of the time, under their families' supervision, most smoking female smokers rarely go outside to smoke. If they would like to practice smoking, they would not be able to do so in public places due to society and cultural policies.

√Got an advice to quit … Less than one-quarter only mentioned getting an advice to quit smoking from a specialist physician or a primary health care professional. This finding reflects weak smoking cessation intentions of students despite knowledge of the harmful effects smoking has on health. A study in **Korea, 2021[46],** showed that that verbal encouragement to stop smoking was proposed as one form of explicit social influence among the many social influence elements that may affect smoking behaviors. One instance of overt verbal social influence is when someone advises a smoker to give up. The most powerful individuals who could advise giving up tobacco usage are health experts and significant others, such as friends, family, and coworkers.

√Smoking cessation attempts in the last 12 months … Two factors could account for the finding that 7 (3.8%) of smoking individuals attempted to stop in the previous 12 months. In the first instance, it indicates that smoking participants intend to stop, which is a positive behavior; however, in the second instance, it indicates that they are unable to handle the stress that comes with being a college student, which leads to their relapse. This finding is agreed upon with a study performed in **Korea, 2019[47],** demonstrated the association between failure to stop smoking and stress, which was more common in females than in males, and reports revealed those who had previously tried to stop smoking experienced increased levels of stress after quitting. As a result, those who had relapsed after trying to quit could require greater effort to stop smoking, and those pressures may have an impact on their addiction to smoking. Another study in **Germany, 2020[48],** found that smokers who used more tobacco and were more dependent on nicotine made more frequent attempts to quit. A different study that was researched about in many **European countries, 2019[49],** showed that the likelihood that non-medical students would plan to quit smoking in the future was lower which was hypothesized by educational background in the field of medicine and life sciences determining personal behaviors towards smoking including willingness to quit smoking and the likelihood that older students would attempt or be willing to give up smoking in the future was higher, which may indicate that as they grew older, their awareness of the negative effects of smoking increased along with their readiness to give it up.

CONCLUSION

1. The study found one-quarter of participants either current and previous smoking among female college students.
2. The highest percentage of participants aged 20-24 years old, not married, were of the first and fourth grades
3. The highest percentage of participants belonged to college of Computer Engineering, and most smoking participants belonged to College of Literature.
4. Fathers of most participants were smokers, whether previously or currently and regardless of smoking type with significant correlation with "Fair Knowledge Level".
5. Friends were the main source of motivating participants toward smoking initiation. And the internet was the main source of smoking information.
6. Psychological pressure, anxiety, depression, and curiosity were the main reasons of initiating smoking.
7. Cigarettes, followed by E-cigarettes, then Hookah were the most commonly used smoking tools by smoking participants.

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