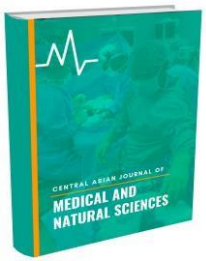

CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES
https://cajmns.centralasianstudies.org/index.php/CAJMNS
Volume: 05 Issue: 04 | October 2024 ISSN: 2660-4159

Article

Predictors of Self-Efficacy of Avoiding Exposure to Second-Hand Smoke Among Pregnant Women

Tabarak Laith Kadhim[1], Noor Alhuda Khaleel Ibrahim[2]

1. MScN (C), University of Baghdad, College of Nursing, Community Health Nursing Department, Baghdad, Iraq
* Correspondence: tabarak.laith2206m@conursing.uobaghdad.edu.iq
2. Ph.D., University of Baghdad, College of Nursing, Community Health Nursing Department, Baghdad, Iraq
* Correspondence: noorkh@conursing.uobaghdad.edu.iq

Abstract: Tobacco use is a major risk factor for over 20 different types or subtypes of cancer, cardiovascular and respiratory diseases, and numerous other debilitating health problems. Nicotine is also highly addictive. Over 7000 chemicals are found in smoked tobacco products, such as waterpipes, including at least 250 of those chemicals being known to be toxic or carcinogenic. People who do not smoke, exposure to secondhand smoke from burning tobacco products causes disease and premature death. Exposure to secondhand smoke has no safe level. Immediate harm can result from even a brief exposure. Roughly one-third of the global adult population engages in tobacco consumption. A significant proportion of individuals initiate smoking throughout their youth, and those who persist in smoking are at risk of succumbing to a smoking-related ailment. Smoking-related fatalities are increasing in the developing world, while smoking-induced diseases are believed to be the primary cause of premature deaths in developed countries. Pregnant women who are exposed to secondhand smoke are at risk of experiencing various complications that negatively impact on pregnancy and impede the growth of fetus. These complications include spontaneous abortion, miscarriage, fetal growth restriction, intrauterine growth restriction, preterm birth, low birthweight, sudden infant death syndrome and stillbirth. The presence of nicotine in cigarette smoke induces vasoconstriction, leading to a decrease in the delivery of vital oxygen and nutrients required for the development of the fetus. Exposure to secondhand smoke has been associated with sleep-disordered breathing during childhood. Suggested mechanisms for this result include increased inflammation from the chronic exposure to tobacco leading to tonsillar hypertrophy and mucosal edema. Exposure to secondhand smoke increases the likelihood of children developing asthma, experiencing a decline in lung function, and developing middle ear disease. Similar to infancy, the prenatal period is particularly susceptible to the harmful consequences of tobacco consumption. This study aims to identify the predictors of self-efficacy of avoiding exposure to secondhand smoke among pregnant women. A descriptive correlational study was carried out in Baghdad city for the period from October 1st 2023 to April 4th 2024. A non-probability (purposive sample) sample of (390) pregnant women who visited the health care centers in Baghdad, Iraq. A questionnaire composed of demographic and reproductive characteristics, exposure to cigarette smoke by smoking, self-efficacy scale, and perceived barriers scale. The data were analyzed by using statistical package for social science, version 27. The multiple regression model exhibits that the number cigarettes husband smokes per day, number of hours a day women think they are exposed to cigarette smoke, number of cigarettes husband smokes per day, perceived barriers predict more participants' Self-Efficacy respectively. On the other hand, the number of cigarettes husbands smoke in the car, in your home or near you, and number of cigarettes husband smokes per day respectively. Self-Efficacy of pregnant women predicts more likely to adopt avoidance behavior and it is necessary to develop educational programs to increase the self-efficacy of pregnant women and inform them about the effects of exposure to secondhand smoke on pregnancy and fetus.

Citation: Kadhim, T. L., & Ibrahim, N. A. K. Predictors of Self-Efficacy of Avoiding Exposure to Second-Hand Smoke Among Pregnant Women. Central Asian Journal of Medical and Natural Science 2024, 5(4), 387-398.

Received: 16th July 2024
Revised: 23rd July 2024
Accepted: 30th July 2024
Published: 6th August 2024

Keywords: Pregnant Women, Secondhand Smoke, Self-Efficacy

1. Introduction

Smoking remains a major public health issue as it is a leading cause of preventable morbidity and mortality globally [1]. Cigarette smoking has been considered as a risk factor for the development of several cancers, including the gastrointestinal, urogenital, and respiratory systems [2]. Cigarette smoking is one of the most prevalent intemperance issues in the modern world [3]. Despite of intense campaigns for health promotion in underdeveloped and industrialized nations, smoking remains a significant public health impendence in these days [4]. Persons who smoke heavily have an increased risk of cardiovascular, gastrointestinal, and respiratory problems, as well as several types of cancer [5]. There is a significant connection between tobacco consumption and bladder cancer; around (50%) of conditions occur in males, and (33%) of cases in females have been linked to tobacco use [6]. It is reported that smoking severely damages the reproductive organs [7].

Cigarette smoke is highly harmful and poisonous to person health [8]. Cigarette smoke contains around 4000 compounds, including serious elements such as nicotine, free radicals, carbon monoxide, and other gaseous substances [9]. Tobacco used is commonly because of its low cost, high marketing, lack of acquaintance about its hazardous effects and poor laws against its use [10].

According to the world Health Organization, a total of (22.3%) of people in the world used tobacco in 2020, including (36.7%) of men and (7.8%) of women. Around 80 percent of the 1.3 billion tobacco smokers worldwide are in low-and middle-income nations. More than 8 million people die from tobacco related illnesses every year [11].

Second-hand smoke (SHS) is resulted by the combustion of cigarettes, other tobacco products, and the exhalation of smoke by smokers, and it affects non-smokers who exposed to it [12]. The prevalence of second-hand smoking exposure in industrialized nations may further raise the risk of smoking-related diseases in non-smokers [13]. Around (40%) of children, (33%) of men who do not smoke, and (35%) of women who do not smoke are exposed to second-hand smoking globally [14].

Expectant women who are exposed to second-hand smoking (SHS) are at risk of experiencing various complications that can negatively impact both the mother and the developing fetus. These complications include fetal growth restriction, intrauterine growth restriction, spontaneous abortion, miscarriage, stillbirth, preterm birth, low birthweight (LBW), and sudden infant death syndrome [12]. The presence of nicotine in cigarette smoke result in vasoconstriction, leading to a decrease in the delivery of vital oxygen and nutrients required for the growth of the fetus [15]. Health workers, specifically nurses and midwives, in underdeveloped nations frequently ignoring the recommendation to protect oneself from second-hand smoking because they do not view smoking as a serious issue among their patients [16].

According to the most recent surveys conducted in Iraq show that tobacco usage is highly prevalent in Iraq, with 20% of the population smoking tobacco products. Additionally, according to the most recent Global Youth Tobacco Survey recently completed in Iraq, 11% of young people currently smoke [17]. Despite the low prevalence of female smokers in Middle-Eastern nations, specifically Iran, women are nevertheless at risk for secondhand smoke effects due to the high prevalence of smoking among men. Over half of Iranian women (56.3%) were exposed to second-hand smoking during pregnancy [18].

Because there are no anti-smoking intervention or restriction policies in place, many women in Jordan, a developing nation in the Middle East, are exposed to secondhand smoking. Jordan has one of the highest smoking rates in the world, with (80%) of males consume nicotine. Due to their husbands' active smoking, many expectant women and

newborn in Jordan are exposed to second-hand smoking [19]. In Egypt, where (50%) of the population is exposed to secondhand smoke in their own homes and 24.3% of adults use tobacco products, tobacco control is a big problem. Additionally, there are increasing tobacco usage patterns among young women, as well as an increase in shisha use overall. The increased prevalence of chronic diseases such as lung disease, lung cancer, ischemic heart disease, and stroke in Egypt is mostly due to tobacco use [20].

The prevalence of daily SHS exposure at home was found to be higher among pregnant women than non-pregnant women in most nations, according to a recent study in 2022 that examined the prevalence of SHS exposure among women in 57 low- and middle-income countries. The prevalence was highest in the Eastern Mediterranean countries (41.8%, range: 41.2%- 42.7%). Data from separate studies reveals that a significant fraction (more than 80%) of pregnant women in Middle Eastern nations are exposed to secondhand smoke [21].

According to a 2013 study, 47.3% of Chinese men smoke, making it the country with the greatest tobacco production and consumption rates in the world [22]. Therefore, as more people smoke, more non-smokers, especially pregnant women, children, and older adults, are more likely to be exposed to secondhand smoke. According to two cross-sectional studies done in the provinces of Henan and Sichuan, between 60 to 70 percent of pregnant women are exposed to SHS, and (75.1%) of non-smoking pregnant women have chronic SHS exposure via their partners [23].

2. Materials and Methods

A descriptive correlational study was carried out from October 1st, 2023 to April 4th, 2024 at the health care centers in Baghdad City, Iraq. The study included a purposive sample of 390 pregnant women who are exposed to secondhand smoke. The inclusion criteria include all pregnant women in all age groups, and hose husbands are smokers. The exclusion criteria, pregnant women who are illiterate and those whose husbands are non-smokers.

An approval was obtained from the ethics committee of College of Nursing/University of Baghdad and approval obtained from healthcare sectors for data collection.

The researchers presented an explanation of the context of the study and its purposes before starting data collection. Pregnant women in healthcare centers were told of the study purposes and asked to voluntarily participate and fill out the questionnaire. The researchers precisely adhered to the confidentiality of the data of the participants and used them only for research purpose.

The study instrument includes participants' sociodemographic and reproductive characteristics, exposure to cigarette smoke by smoking, Self-Efficacy Scale and Perceived Barriers Scale.

The sociodemographic characteristics include woman's age and spouses' level of education. The reproductive characteristics include number of children and fetus sex. The exposure to cigarette smoke includes number of cigarettes husband smokes per day, number of cigarette husband smokes at home, and number of hours of exposure to cigarette smoke.

The Perceived Barriers Scale consists of two components; The Personal Barriers subscale is composed of (7) items are measured on a 5-point Likert scale of 1 for (*Strongly disagree*), 2 for (*Disagree*), 3 for (*Not decided*), 4 for (*Agree*), 5 for (*Strongly agree*). The total score of the Personal Barriers Scale ranges from 7-35 with a higher score indicates greater Personal Barriers. The Perceived Barriers Scale demonstrated very good internal consistency reliability (Cronbach's alpha = 0.89) [24].

The Environmental Barriers Scale that is composed of (5) items. The Self-Efficacy Scale assesses pregnant women's Self-Efficacy which consists of (6) items that are measured a 5-point Likert scale of 1 for (*Strongly disagree*), 2 for (*Disagree*), 3 for (*Not decided*), 4 for (*Agree*), 5 for (*Strongly agree*). The total score of the Environmental Barriers Scale ranges from 5-25 with a higher score indicates greater environmental barriers. The Self-Efficacy Scale demonstrated good internal consistency reliability (Cronbach's alpha = 0.74) [24].

The validity of study instrument was examined through content validity ratio (CRV > 0.49) and content validity index (CVI > 0.79) [24]. The study instrument was forward-translated into Arabic language by two bilingual faculty members. Other two bilingual faculty members backward-translated it to English language. Other two bilingual faculty members matched the two versions and eliminated the trivial discrepancies between these two versions.

Data were collected using a self-reported instrument for the period from January 10th, 2024 to March 3rd, 2024. The questionnaire was distributed for study participants. The time required completing the study instrument by respondents ranges between (15-20) minutes.

Data were analyzed using the statistical package for social science (SPSS) version [27], IBM for windows. The descriptive statistical measures of frequency and percent were used to describe participants' sociodemographic and reproductive characteristics. The arithmetic mean and standard deviation were also used. The Multiple regression analysis was used to identify factors that can predict Self-Efficacy of avoiding exposure to second-hand smoke.

3. Results

Table 1. Participants' sociodemographic characteristics (N = 390)

Variable	Frequency	Percent
Wife's Age (Years): Mean (SD): 27.14 ± 6.28		
17-22	102	26.2
23-28	137	35.1
29-34	93	23.8
35-40	47	12.1
41-46	11	2.8
Husband's Age (Years): Mean (SD): 31.94 ± 6.46		
19-26	73	18.7
27-34	196	50.3
35-42	94	24.1
43-50	25	6.4
51-59	2	0.5
Number of Children		
1	195	50.0

2	117	30.0
3	30	7.7
4	30	7.7
5	11	2.8
6	2	.5
7	5	1.3
Husband's level of education		
Unable to read and write	5	1.3
Read and write	2	0.5
Elementary school	149	38.2
Middle school	121	31.0
High school	53	13.6
Diploma	31	7.9
Bachelor's degree	26	6.7
Master's degree	2	0.5
Doctoral degree	1	0.3
Wife's level of education		
Read and write	1	0.3
Elementary school	134	34.4
Middle school	111	28.5
High school	84	21.5
Diploma	21	5.4
Bachelor's degree	39	10.0
Wife's Occupation		
Housewife	336	86.2
Employee	37	9.5
Student	17	4.4
Family's monthly income (Iraqi Dinar)		
< 300.000	197	50.5
300.000 – 600.000	79	20.3
601.000 – 900.000	68	17.4
901.000 – 1.200.000	30	7.7

1.201.000 – 1.500.000	16	4.1
Housing Type		
House	374	95.9
Apartment with balcony	3	0.8
Apartment without balcony	13	3.3
Internal Area		
Small, without ventilation	57	14.6
Small, well ventilated	246	63.1
Large, not ventilated	17	4.4
Large, well ventilated	70	17.9

SD: Standard deviation

The wives' mean age is 27.14 ± 6.28; more than half age 23-28-years (*n = 137*; 35.1%), followed by those who age 17-22-years (*n = 102*; 26.2%), those who age 29-34-years (*n = 93*; 23.8%), those who age 35-40-years (*n = 47*; 12.1%), and those who age 41-46-years (*n = 11*; 2.8%).

The husband's mean age is 31.94 ± 6.46; around half age 27-34-years (*n = 196*; 50.3%), followed by those who age 35-42-years (*n = 94*; 24.1%), those who age 19-26-years (*n = 73*; 18.7%), those who age 43-50-years (*n = 25*; 6.4%), and those who age 51-59-years (*n = 2*; 0.5%).

Concerning number of children in the family, a half reported that they have one child (*n = 195*; 50.0%), followed by those who have two children (*n = 117*; 30.0%), those who have both three and four children (*n = 30*; 7.7%) for each of them, those who have five children (*n = 11*; 2.8%), those who have seven children (*n = 5*; 1.3%), and those who have six children (*n = 2*; 0.5%).

Regarding husband's level of education, less than two-fifths are elementary school graduates (*n = 149*; 38.2%), followed by those who are middle school graduates (*n = 121*; 31.0%), those who are high school graduates (*n = 53*; 13.6%), those who hold diploma degree (*n = 31*; 7.9%), those who hold bachelor's degree (*n = 26*; 6.7%), those who are unable to read and write (*n = 5*; 1.3%), those who each read and write, hold master's degree (*n = 2*; 0.5%), and one who holds doctoral degree (*n = 1*; 0.3%).

With respect to wife's level of education, more than a third are elementary school graduates (*n = 134*; 34.4%), followed by those who are middle school graduates (*n = 111*; 28.5%), those who are high school graduates (*n = 84*; 21.5%), those who hold bachelor's degree (*n = 39*; 10.0%), those who hold diploma degree (*n = 21*; 5.4%), and one who reads and writes (*n = 1*; 0.3%).

As per women's occupation, the majority are housewives (*n = 336*; 86.2%), followed by those who are employees (*n = 37*; 9.5%), and those who are students (*n = 17*; 4.4%).

Concerning family's monthly income, it is less than 300.000 ID for more than a half of participants (*n = 197*; 50.5%), followed by those whose income ranges between 300.000-600.000 ID (*n = 79*; 20.3%), those whose income ranges between 601.000-900.000 ID (*n = 68*; 17.4%), those whose income ranges between 901.000-1.200.000 ID (*n = 30*; 7.7%), and those whose income ranges between 1.201.000-1.500.000 ID (*n = 16*; 4.1%).

Regarding housing type, the clear majority reported that they live in courtyard (*n = 374*; 95.9%), followed by those who live in apartment without balcony (*n = 13*; 3.3%), and those who live in apartment with balcony (*n = 3*; 0.8%).

With respect to the internal area, most reported that their housing is small, well ventilated (*n = 246*; 63.1%), followed by large, well ventilated (*n = 70*; 17.9%), small, without ventilation (*n = 57*; 14.6%), and large, not ventilated (*n = 17*; 4.4%).

Table 2. Women's reproductive profile (N = 390)

Variable	Frequency	Percent
Fetus's Sex		
Male	115	29.5
Female	150	38.5
Uncertain	125	32.0
Pregnancy Type		
Planned	222	56.9
Not planned	168	43.1
Gestational Age (Weeks)		
7-13	24	6.1
14-27	248	63.6
28-38	118	30.3

The study results display that less than two-fifths of fetuses are females (*n = 150*; 38.5%), followed by those who are uncertain (*n = 125*; 32.1%), and males (*n = 115*; 29.5%).

Concerning pregnancy type, it was planned for more than a half of women (*n = 222*; 56.9%) compared to that was not planned (*n = 168*; 43.1%).

Regarding gestational age, most were in their second trimester of pregnancy (*n = 248*; 63.6%), followed by those who were in their third trimester (*n = 118*; 30.3%), and those who were in their first trimester (*n = 24*; 6.1%).

Table 3. Smoking profile (N = 390)

Variable	Frequency	Percent
Does your husband smoke?		
Yes	390	100.0
Number of cigarettes husband smokes per day: 29.30 ± 17.3		
1-5		
6-10	7	1.8
11-15	64	16.4

16-20	20	5.1
≥ 21	95	24.4
	204	52.3
Number of cigarettes husband smokes in the car, in your home or near you: 8.81 ± 8.5		
1-5	201	51.6
6-10	95	24.4
11-15	27	6.9
16-20	45	11.5
≥ 21	22	5.6
Number of hours a day do you think you are exposed to cigarette smoke: 4.34 ± 4.1		
1-5	268	68.7
6-10	115	29.5
11-15	4	1.0
≥16	3	0.8
Frequency of your exposure to secondhand smoking in one day: 4.85 ± 4.1		
2-3	36	9.2
4-5	64	16.4
6-7	290	74.4
What if you asked your partner not to smoke around you?		
He throws the cigarette	93	23.8
Opens the window of the room or car	81	20.8
He is going somewhere else	145	37.2
He wants me to go somewhere else	12	3.1
He does not care and he smokes	59	15.1

The study results reveal that all husbands are smokers (*n = 390*; 100.0%). The mean cigarettes the husbands smoke per day is 29.30 ± 17.3; more than a half reported that they smoke 21 cigarettes or more per day (*n = 204*; 52.3%), followed by those who smoke 16-20 cigarettes per day (*n = 95*; 24.4%), those who smoke 6-10 cigarettes per day (*n = 64*; 16.4%),

those who smoke 11-15 cigarettes per day (*n = 20*; 5.1%), and those who smoke 1-5 cigarettes per day (*n = 7*; 1.8%).

The mean of cigarettes husband smokes in the car, in home or near about is 8.81 ± 8.5; more than a half reported that husbands smoke 1-5 cigarettes (*n = 201*; 51.6%), followed by 6-10 cigarettes (*n = 95*; 24.4%), 16-20 cigarettes (*n = 45*; 11.5%), 11-15 cigarettes (*n = 27*; 6.9%), and 21 cigarettes or more (*n = 22*; 5.6%).

The mean of hours of women's exposure to cigarettes smoke is 4.34 ± 4.1; most reported that they expose to cigarettes smoke for 1-5 hours (*n = 286*; 68.7%), followed by those who expose to smoking for 6-10 hours (*n = 115*; 29.5%), those who expose to cigarettes smoke for 11-15 hours (*n = 4*; 1.0%), and those who expose to cigarette smoke for 16 hours or longer (*n = 3*; 8.0%).

The mean of hours women's exposure to secondhand smoke is 4.85 ± 4.1; most reported that they expose to secondhand smoke for 6-7 times per day (*n = 290*; 74.4%), followed by those who expose to it for 4-5 times per day (*n = 64*; 16.4%), and those who expose to it for 2-3 times per day (*n = 36*; 9.2%).

When women ask their partner not to smoke around them, the anticipated answer would be "He is going somewhere else" (*n = 145*; 37.2%), followed by "He throws the cigarette" (*n = 93*; 23.8%), "Opens the window of the room or car" (*n = 81*; 20.8%), "He does not care and he smokes" (*n = 59*; 15.1%), and "He wants me to go somewhere else" (*n = 12*; 3.1%).

Table 5. Multiple regression model for predicting participants' Self-Efficacy

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.883	.923		23.698	.000
	Wife Age	.018	.021	.042	.833	.406
	Gestational Age	-.013	.018	-.037	-.732	.464
	Number cigarettes does he smoke per day	.034	.010	.224	3.562	.000
	Number of cigarettes does he smoke in the car, in your home or near you	-.094	.022	-.306	-4.353	.000
	Number of hours a day do you think you are exposed to cigarette smoke	.096	.037	.149	2.555	.011
	Frequency of exposure to secondhand smoking in one day	-.004	.043	-.005	-.092	.927
	Number of days a week do you think you are exposed to cigarette smoke	-.082	.092	-.046	-.892	.373
2	(Constant)	22.989	1.178		19.513	.000
	Wife Age	.018	.021	.042	.827	.409
	Gestational Age	-.004	.018	-.010	-.201	.841

Number of cigarettes husband smokes per day	.030	.010	.199	3.175	.002
Number of cigarettes does he smoke in the car, in your home or near you	-.101	.021	-.328	-4.705	.000
Number of hours a day do you think you are exposed to cigarette smoke	.126	.038	.198	3.332	.001
Frequency of exposure to secondhand smoking in one day	.009	.043	.013	.220	.826
Number of days a week of exposure to cigarette smoke	-.159	.093	-.090	-1.709	.088
Personal Barriers	.403	.128	.599	3.159	.002
Perceived environmental barriers	.213	.142	.226	1.506	.133
Perceived Barriers	-.368	.137	-.727	-2.676	.008

a. Dependent Variable: Self-Efficacy

B: Beta, Sig.: Significance, Std. Error: Standard Error, t: T-statistics

The multiple regression model exhibits that the number cigarettes husband smokes per day, number of hours a day woman think they are exposed to cigarette smoke, number of cigarettes husband smokes per day, perceived barriers predict more participants' Self-Efficacy (p-value = .000, .001, .002, .008) respectively.

On the other hand, the number of cigarettes husbands smoke in the car, in your home or near you, and number of cigarettes husband smokes per day (p-value = 0.000, .088) respectively.

4. Discussion

Table 5 the statistical analysis of multiple regression model exhibits that the number cigarettes husband smokes per day, number of hours a day women think they are exposed to cigarette smoke, number of cigarettes husband smokes per day, perceived barriers predict more participants' Self-Efficacy (p-value = .000, .001, .002, .008) respectively.

In the same line with this study, Chen et al. [25] revealed that overall avoidance of environmental tobacco smoke was positively associated with self-efficacy. On other study Artzi-Medvedik et al. [26] emphasized the need for educate pregnant women about second-hand smoke risks and strategies for avoid exposure to second-hand smoke and to enhance pregnant women's self-confidence in advocating for themselves. According to Chi et al. [27] explained effectiveness of a second-hand smoke prevention program in raising knowledge, self-efficacy, and preventative behaviors among expectant women. Also, Chi et al. [28] demonstrated the group-based intervention considerably improved health beliefs, self-efficacy, and refuse behaviors.

The current study reveals that the number cigarettes husband smokes per day, number of hours a day women think they are exposed to cigarette smoke, number of cigarettes husband smokes per day, perceived barriers predict more participants' self-efficacy which this demonstrate that pregnant women are aware of the dangers of secondhand smoke exposure and more likely to adopt the avoidance behaviors.

5. Conclusion

The more the number cigarettes husband smokes per day, the greater the Self-Efficacy pregnant women enjoy. The greater the number of hours a day woman think they are exposed to cigarette smoke, the greater the Self-Efficacy pregnant women enjoy. The more the number of cigarettes husband smokes per day, the greater the Self-Efficacy pregnant women enjoy. The greater the Perceived Barriers, the greater the Self-Efficacy pregnant women enjoy.

The more the number of cigarettes husbands smoke in the car, the greater the Self-Efficacy pregnant women enjoy.

The less the number of cigarettes husbands smoke in your home or near you, the greater the Self-Efficacy pregnant women enjoy. The less the number of cigarettes husband smokes per day, the greater the more participants' Self-Efficacy.

REFERENCES

[1] E. F. Afolalu, E. Spies, A. Bacso, E. Clerc, L. Abetz-Webb, S. Gallot, C. Chrea, "Impact of Tobacco and/or Nicotine Products on Health and Functioning: A Scoping Review and Findings From the Preparatory Phase of the Development of a New Self-Report Measure," *Harm Reduction Journal*, vol. 18, pp. 1-5, Dec. 2021. doi: 10.1186/s12954-021-00526-z.

[2] M. Long, Z. Fu, P. Li, Z. Nie, "Cigarette Smoking and the Risk of Nasopharyngeal Carcinoma: A Meta-Analysis of Epidemiological Studies," *BMJ Open*, vol. 7, no. 10, p. e016582, Oct. 2017. doi: 10.1136/bmjopen-2017-016582.

[3] N. S. Jaafar, "The Effect of Cigarette Smoking on Blood and Biochemical Parameters: A Comparative Study Among Male Smokers and Non-Smokers in Baghdad City," *Iraqi Journal of Science*, pp. 727-731, Apr. 2020. doi: 10.24996/ijs.2020.61.4.3.

[4] S. Al-Fayyadh, A. H. A. Al-Ganmi, M. M. Abdulwahhab, S. M. Hussein, L. Cook, A. Al-Solais, et al., "Targeting Smoking Triggers: A Nurse-Led Intervention for Tobacco Smoking Cessation," *Nurse Media Journal of Nursing*, vol. 12, no. 3, pp. 437-451, 2022. doi: 10.14710/nmjn.v12i3.47107.

[5] M. Alramadany, L. S. Yas, "Effects of Hypertension With and Without Smoking on Salivary Electrolytes Concentration," *Journal of the Faculty of Medicine Baghdad*, vol. 65, no. 1, pp. 59-64, 2023. doi: 10.32007/jfacmedbagdad.6512046.

[6] K. Mohammed, B. Al-Ani, "Assessment of Factors That Contribute to Bladder Cancer," *Iraqi National Journal of Nursing Specialties*, vol. 18, no. 2, pp. 32-40, 2005. doi: 10.58897/injns.v18i2.31.

[7] S. Humadee, I. Abbas, "Risk Factor of Urinary Incontinence Among Menopausal Women at Babylon City," *Iraqi National Journal of Nursing Specialties*, vol. 25, no. 3, pp. 130-140, 2018. doi: 10.58897/injns.v25i3.150.

[8] M. H. Karbon, F. H. Ali, E. J. Hasan, D. E. Znad, S. K. Zamil, A. F. Lafi, "Evaluation of the Level of Some Heavy Metals in Tobacco of Domestic and Imported Cigarette Brands Used in Iraq," *Baghdad Science Journal*, vol. 12, no. 3, pp. 582-590, 2015. doi: 10.21123/bsj.2015.12.3.582-590.

[9] W. Q. Turki, "The Effect of Cigarette Smoking on Serum Liver Enzymes in Baghdad," *Ibn AL-Haitham Journal for Pure and Applied Sciences*, pp. 52-56, 2021. doi: 10.30526/2021.IHICPAS.2651.

[10] F. Jawad, "Effectiveness of the Health Action Process Approach on Promoting the Health Behaviors of Male High School Students in Al-Rusafa District," *Iraqi National Journal of Nursing Specialties*, vol. 35, no. 1, pp. 58-69, 2022. doi: 10.58897/injns.v35i1.620.

[11] World Health Organization (WHO), "Tobacco. Second-Hand Smoke Kills," 2023. [Online]. Available: https://www.who.int/news-room/fact-sheets/detail/tobacco.

[12] A. M. Hawsawi, L. O. Bryant, L. T. Goodfellow, "Association Between Exposure to Secondhand Smoke During Pregnancy and Low Birthweight: A Narrative Review," *Respiratory Care*, vol. 60, no. 1, pp. 135-140, Jan. 2015. doi: 10.4187/respcare.02798.

[13] Yasir, H. B. H. Hassan, "Prevalence of Smoking Among Health Workers and Effectiveness of Instructional Booklet Concerning Risks of Smoking on Health Workers' Knowledge in Baghdad Teaching Hospital," *Iraqi National Journal of Nursing Specialties*, vol. 34, no. 1, pp. 38-49, Jun. 2021. doi: 10.58897/injns.v34i1.458.

[14] G. Carreras, A. Lugo, S. Gallus, B. Cortini, E. Fernández, M. J. López, J. B. Soriano, A. Lopez-Nicolas, S. Semple, G. Gorini, Y. Castellano, "Burden of Disease Attributable to Second-Hand Smoke Exposure: A Systematic Review," *Preventive Medicine*, vol. 129, p. 105833, Dec. 2019. doi: 10.1016/j.ypmed.2019.105833.

[15] R. J. Bonnie, K. Stratton, L. Y. Kwan, "Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products," Washington, D.C., National Academies Press, 2015.

[16] Z. Karimiankakolaki, "Do Not Ignore the Participation of Smoking Men in Caring for Their Pregnant Wives From Exposure to Secondhand Smoke," *Journal of Social Behavior and Community Health*, vol. 6, no. 1, pp. 773-775, May 2022. doi: 10.18502/jsbch.v6i1.9514.

[17] World Health Organization (WHO), "World No Tobacco Day/Iraq in Focus," 2023. [Online]. Available: https://www.emro.who.int/irq/iraq-in-focus/world-no-tobacco-day.html.

[18] S. S. Mahmoodabad, Z. Karimiankakolaki, A. Kazemi, N. K. Mohammadi, H. Fallahzadeh, "Exposure to Secondhand Smoke in Iranian Pregnant Women at Home and the Related Factors," *Tobacco Prevention & Cessation*, vol. 5, 2019. doi: 10.18332/tpc/104435.

[19] J. Hamadneh, S. Hamadneh, "The Impact of an Online Educational Program to Reduce Second-Hand Exposure to Smoke Among Nonsmoking Pregnant Women; A Hospital-Based Intervention Study," *Heliyon*, vol. 9, no. 4, 2023. doi: 10.1016/j.heliyon.2023.e13148.

[20] World Health Organization (WHO), "Tobacco/Programs/Egypt," 2023. [Online]. Available: https://www.emro.who.int/egy/programmes/tobacco-free-initiative.html.

[21] Z. M. Hassanein, "Prevention of Second-Hand Smoke Exposure Among Pregnant Women and Children in Egypt and the Rest of the Middle East: A Mixed-Methods Investigation (Doctoral Dissertation, University of Nottingham)," 2023. [Online]. Available: https://eprints.nottingham.ac.uk/73887.

[22] M. Wang, X. Luo, S. Xu, W. Liu, F. Ding, X. Zhang, L. Wang, J. Liu, J. Hu, W. Wang, "Trends in Smoking Prevalence and Implication for Chronic Diseases in China: Serial National Cross-Sectional Surveys From 2003 to 2013," *The Lancet Respiratory Medicine*, vol. 7, no. 1, pp. 35-45, Jan. 2019. doi: 10.1016/S2213-2600(18)30432-6.

[23] W. Zhou, X. Zhu, Z. Hu, S. Li, B. Zheng, Y. Yu, D. Xie, "Association Between Secondhand Smoke Exposure in Pregnant Women and Their Socioeconomic Status and Its Interaction With Age: A Cross-Sectional Study," *BMC Pregnancy and Childbirth*, vol. 22, no. 1, p. 695, Sep. 2022. doi: 10.1186/s12884-022-04968-6.

[24] S. S. Mahmoodabad, Z. Karimiankakolaki, A. Kazemi, H. Fallahzadeh, "Self-Efficacy and Perceived Barriers of Pregnant Women Regarding Exposure to Second-Hand Smoke at Home," *Journal of Education and Health Promotion*, vol. 8, no. 1, p. 139, Jan. 2019.

[25] M. Chen, P. H. Lee, Y. H. Chou, S. F. Kuo, Y. H. Hsu, "Avoidance of Environmental Tobacco Smoke Among Pregnant Taiwanese Women: Knowledge, Self-Efficacy, and Behavior," *Journal of Women's Health*, vol. 16, no. 6, pp. 869-878, Jul. 2007. doi: 10.1089/jwh.2006.0198.

[26] R. Artzi-Medvedik, N. Mohamed, I. R. A. Chertok, "Pregnant Women's Perception of Secondhand Smoke Exposure," *MCN, The American Journal of Maternal/Child Nursing*, vol. 47, no. 6, pp. 353-358, Nov./Dec. 2022. doi: 10.1097/NMC.0000000000000863.

[27] Y. C. Chi, C. L. Wu, C. Y. Chen, S. Y. Lyu, F. E. Lo, D. E. Morisky, "Randomized Trial of a Secondhand Smoke Exposure Reduction Intervention Among Hospital-Based Pregnant Women," *Addictive Behaviors*, vol. 41, pp. 117-123, Feb. 2015. doi: 10.1016/j.addbeh.2014.10.001.

[28] Y. C. Chi, F. Sha, P. S. Yip, J. L. Chen, Y. Y. Chen, "Randomized Comparison of Group Versus Individual Educational Interventions for Pregnant Women to Reduce Their Secondhand Smoke Exposure," *Medicine*, vol. 95, no. 40, p. e5072, Oct. 2016. doi: 10.1097/MD.0000000000005072.