



Hormozgan University of Medical Sciences

4th National and 1st International Congress on

Tobacco and Health

22-24 February 2023

Bandar Abbas



COVID-19 and hookah smoking behavior: a cross-sectional study



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- **Introduction**

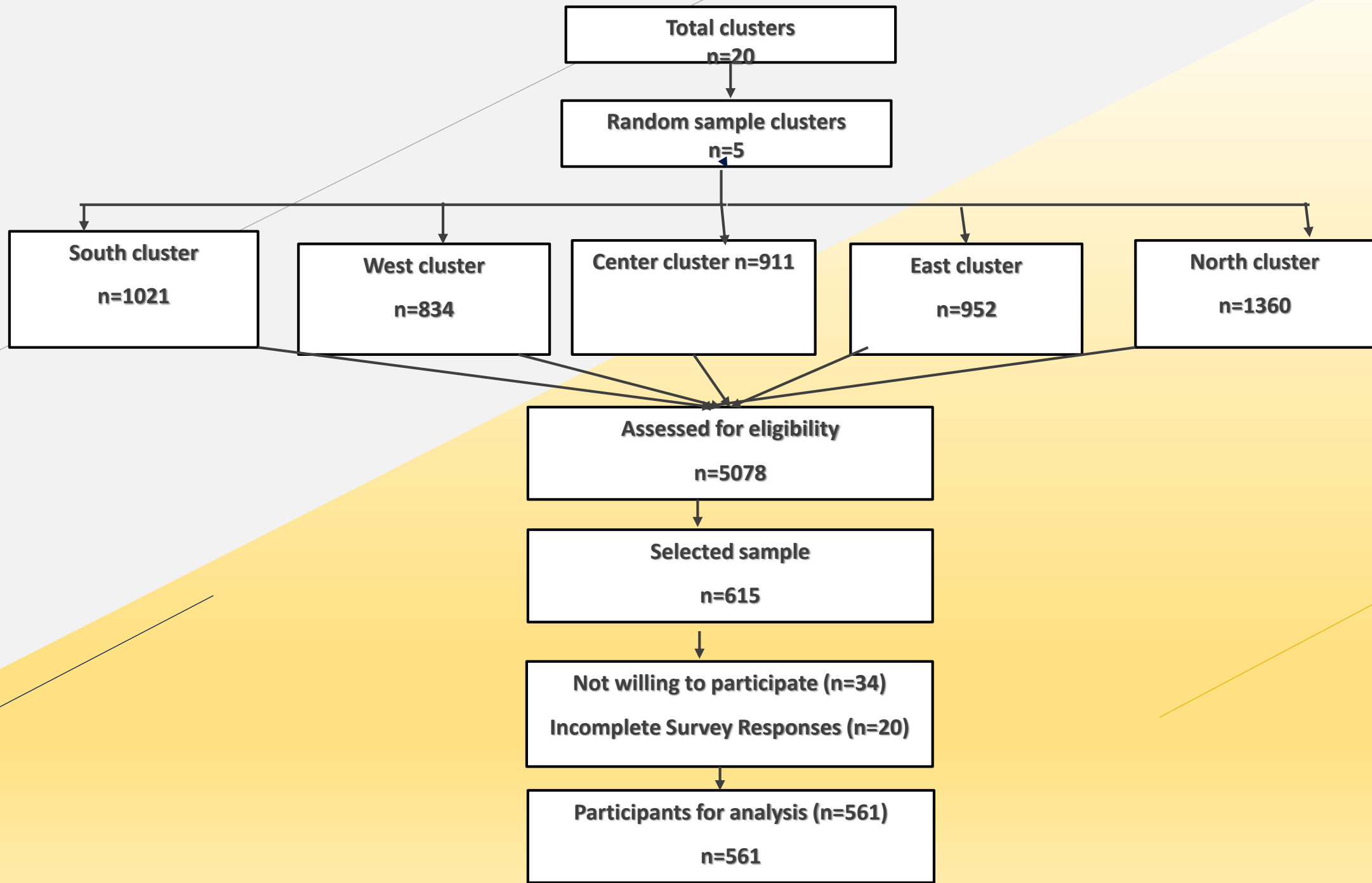
- Hookah smoking is a growing general health concern, that followed by other diseases and disabilities (1).
- In Iran which hosts a great many hookah smokers(2), hookah smoking is a socially acceptable behavior, and this behavior has turned into a family tradition in many households(3). The prevalence of hookah smoking among women in Hormozgan Province was estimated to be 10.3%, which is much higher than other provinces (4).
- According to the World Health Organization (WHO): “As hookah smoking is typically a behavior shown in public places and in groups, a shared use of pipes or oral tubes can increase the chances of affliction with the COVID-19 (5) .

The present research aimed to explore the association between COVID-19 and hookah cessation among female hookah smokers.



- **Methods**
- **Study design and participants**
- Cross-sectional study was conducted between November 2020 - January 2021 among female hookah smokers, in Bandar Abbas, in the south of Iran (#IR.HUMS.REC.1399.060). informed consent was obtained from all participants.

- inclusion criteria :The inclusion criteria : female, smoking hookahs at least 4 times a week for 6 months before the outbreak of Covid-19, fully informed consent to participate in the research.
- The exclusion criteria : history of mental disorder, addiction to any drug besides hookahs





Data collection

structured questionnaire

1st part: Demographic information

2nd part: Hookah smoking behavior information

A single question: Did you cease hookah smoking when the pandemic began?

validity/Reliability: panel of 5 experts, test-retest with 30 participants -ICC 0.83

Expected Outcomes: Hookah cessation at the outset of COVID-19 pandemic -Changes in smoking behavior among current smokers

Statistical Analysis: Chi-squared test-univariate logistic regression analysis-multi-variate logistic regression -Paired-samples T-test (SPSS V20)

Table 1: Hookah cessation or non-cessation behavior across demographic variables (n=561)

Variables	Characteristic	Total sample	Non Smoker N (%)	N (%)Smoker	p
age(years)	20<	99(17.6)	16(16.2)	83(83.8)	0.506
	20-35	262(46.7)	36(13.7)	226(86.3)	
	35-50	134(23.9)	13(9.7)	121(90.3)	
	>50	66(11.8)	8(12.1)	58(87.9)	
marital status	Never married	168(29.9)	30(17.9)	138(82.1)	0.026
	Ever married	393(70.1)	43(10.9)	350(89.1)	
educational level	illiterate	109(19.4)	10(9.2)	99(90.8)	<0.001
	Below diploma	191(34.0)	17(8.9)	174(91.1)	
	Diploma	141(25.1)	15(10.6)	126(89.4)	
	University degree	120(21.4)	31(25.8)	89(74.2)	
profession	working outside home	101(18.0)	18(17.8)	405(88.0)	0.113
	not working	460(82.0)	55(12.0)	83(82.2)	
Socio-economic status	upper	101(18.0)	29(28.7)	72(71.3)	<0.001
	middle	285(50.8)	33(11.6)	252(88.4)	
	low	175(31.2)	11(6.3)	164(93.7)	
History of chronic disease	Yes	456(81.3)	59(12.9)	397(87.1)	0.914
	No	105(18.7)	14(13.3)	91(86.7)	
Age of beginning hookah smoking	<15	90(16.0)	9(10.0)	81(90.0)	0.001
	15-30	439(78.3)	53(12.1)	386(87.9)	
	>30	32(5.7)	11(34.4)	21(65.6)	
Duration of hookah smoking	<5	244(43.5)	43(17.6)	201(82.4)	0.008
	5-15	171(30.5)	20(11.7)	151(88.3)	
	>15	146(26.0)	10(6.8)	136(93.2)	
Type of tobacco	fruity	269(48.0)	40(14.9)	229(85.1)	0.347
	local	204(36.4)	25(12.3)	179(87.7)	
	both	88(15.7)	8(9.1)	80(90.9)	
History of hookah smoking among family members	yes	322(57.4)	32(9.9)	290(90.1)	0.012
	no	239(42.6)	41(17.2)	198(82.8)	



Results

Sociodemographic Characteristics

Table 2: Correlation between hookah smoking cessation and demographic variables (n=561)



Predictor Variables		Un adjusted				adjusted			
		OR	95% CI		P	OR	95% CI		P
			Lower	Upper			Lower	Upper	
Age	20<	1(reference)							
	20-35	1.210	.638	2.296	.559	1.264	.468	3.409	.644
	35-50	1.794	.820	3.927	.144	1.193	.221	6.446	.838
	>50	1.398	.561	3.481	.472	.449	.034	5.937	.543
Education	Illiterate	1(reference)							
	Below diploma	1.034	.456	2.345	.936	1.346	.347	5.225	.668
	Diploma	.848	.365	1.970	.702	1.006	.253	4.002	.993
	University	.290	.135	.625	.002	.310	.080	1.204	.091
Profession	Working outside home	1(reference)							
	housewife	.626	.350	1.121	.115	1.301	.537	3.150	.560
Marital status	single	1(reference)							
	married	1.769	1.067	2.935	0.27	2.286	1.099	5.230	.045
SES	low	1(reference)							
	middle	3.076	1.751	5.403	.000	4.421	2.271	8.608	.000
	upper	6.005	2.844	12.678	.000	10.140	4.282	24.013	.000
Age of beginning to smoke hookahs	<15	1(reference)							
	15-30	.809	.384	1.706	.578	.703	.288	1.717	.439
	>30	.212	.078	.578	.002	.142	.029	.680	.015
Duration of smoking hookahs	<5	1(reference)							
	5-15	1.615	.913	2.859	.100	1.157	.548	2.441	.702
	>15	2.909	1.414	5.987	.004	4.158	.640	27.020	.136
Type of tobacco	fruity	1(reference)							
	local	1.251	.731	2.139	.414	.594	.271	1.302	.193
	both	1.747	.784	3.890	.172	.776	.299	2.016	.603
hookah smoking among family members	Yes	1(reference)							
	No	.533	.324	.875	.013	.533	.301	.943	.031
History of chronic diseases	Yes	1(reference)							
	No	.966	.517	1.806	.914	.746	.271	2.057	.572

Comparison of the daily, weekly and monthly hookah smoking before and after the pandemic showed a statistically significant difference ($p<.001$). The detailed information is summarized in Table 3.



Table 3: The frequency of hookah smoking before and after the pandemic

Variables	time	Mean	SD	Mean Difference	95% Confidence Interval of the Difference		p-value
Daily hookah smoking	Before the pandemic	1.827	0.971	-.697	-.786	-.608	<0.001
	After the pandemic	1.130	0.694				
Weekly hookah smoking	Before the pandemic	12.113	6.126	-4.722	-5.820	-3.624	<0.001
	After the pandemic	7.391	5.093				
Monthly hookah smoking	Before the pandemic	44.805	11.617	-15.321	-22.592	-8.050	<0.001
	After the pandemic	29.484	9.598				



As the participants commented, the fear of COVID-19 infection had the highest frequency of involvement in hookah cessation or reduction. The other factors are illustrated in Figure2.

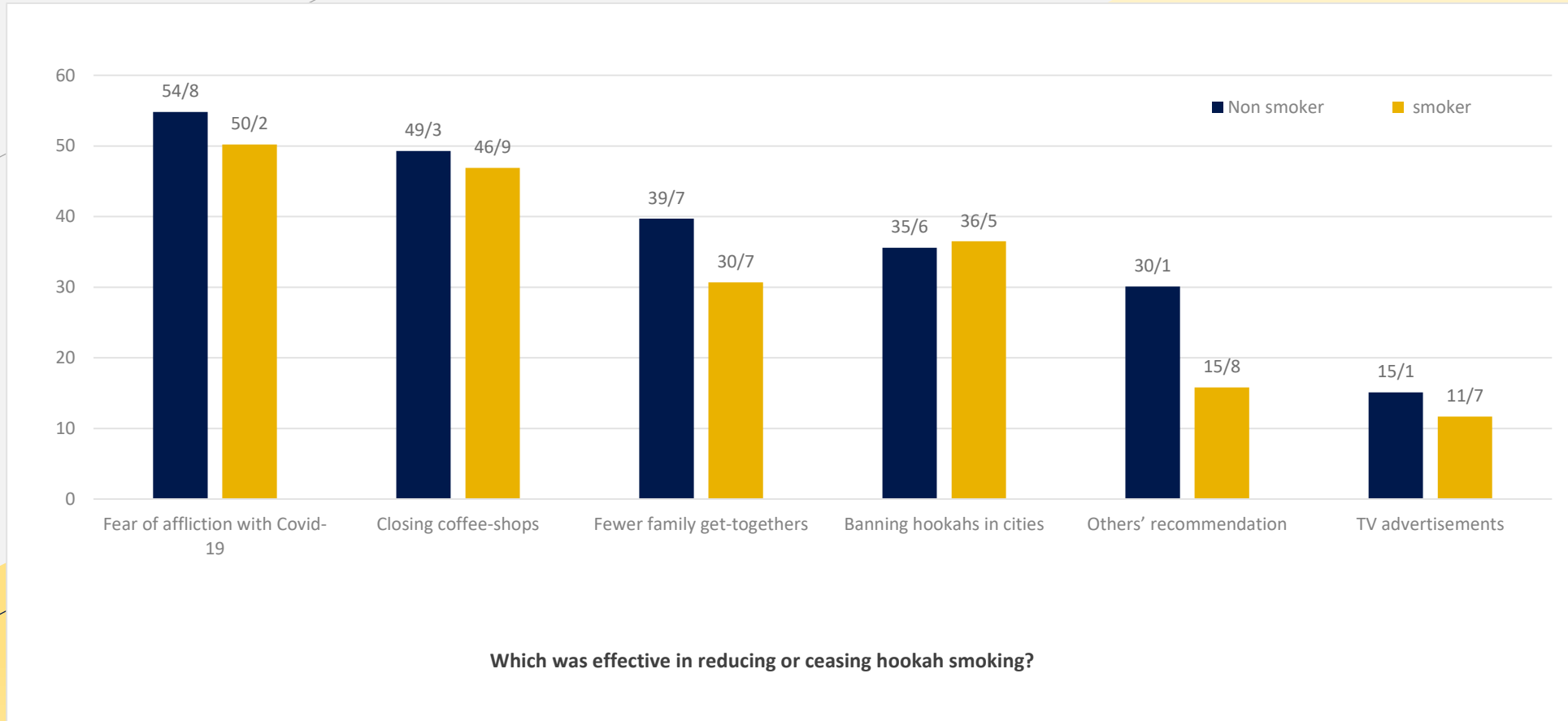


Figure 2: Comparison of smokers and non-smokers in terms of the hookah smoking cessation and failed cessation



As the results show, among the barriers to a successful cessation, entertainment was the most frequent factor. The other relevant information is indicated in Figure 3.

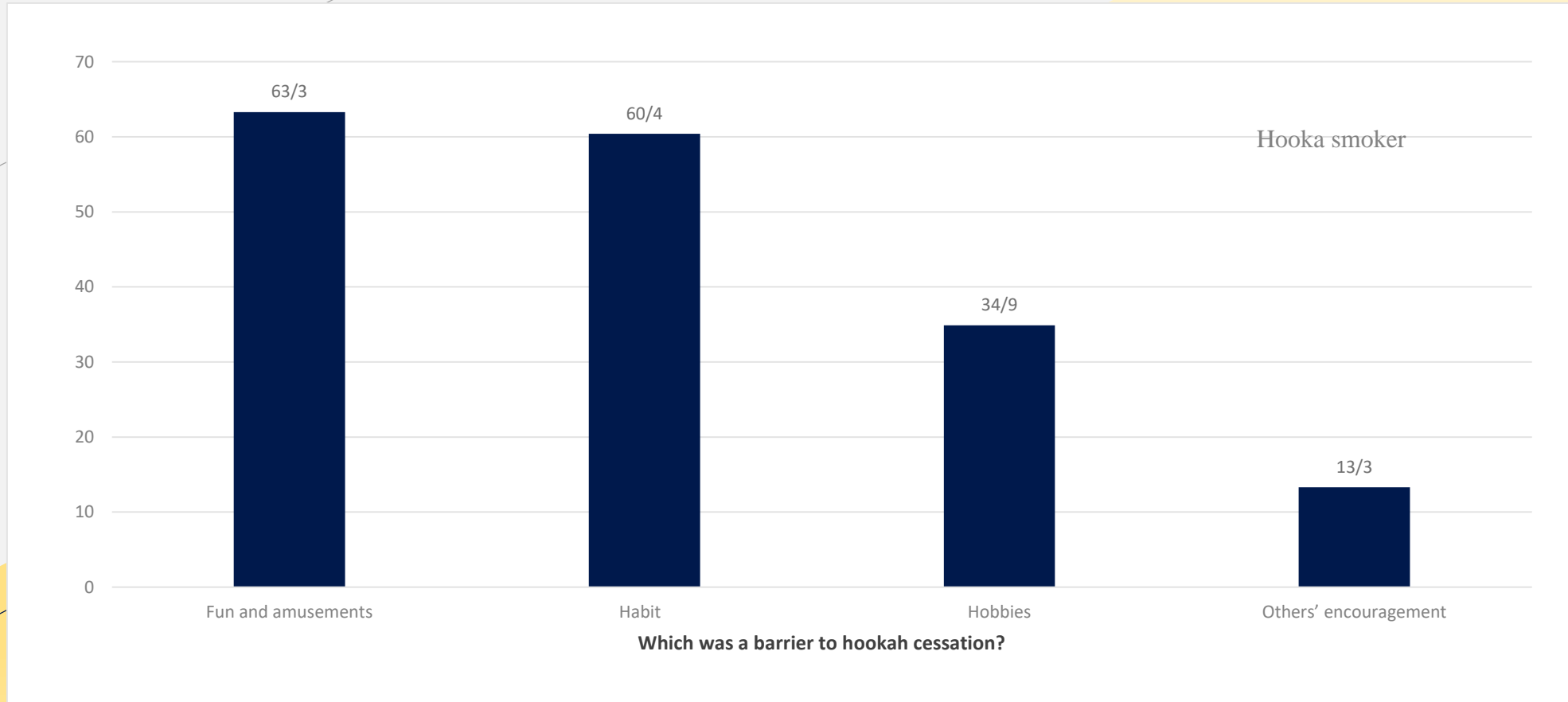


Figure 3: Distribution of barriers to hookah smoking cessation among hookah smokers

Discussion



Odds ratio of cessation was higher among women of a high SES than the low.

Odds ratio of cessation was lower among those who had begun to smoke hookahs at a lower age.

Odds ratio of cessation was lower in those with a hookah smoking family member.

The never married women enjoyed better chances of cessation than the ever married group.

Fear of covid-19, closure of coffee-shops, fewer get-togethers, removal of hookahs from the city, others' recommendation and public warnings on TV were, respectively, the foremost factors affecting the frequency of hookah cessation.

Though a great many women did not manage to cease hookahs, the rate of smoking was significantly reduced in 72% of them compared to the pre-COVID-19 era.



Strengths : pioneering in investigating the effect of COVID-19 pandemic on hookah smoking behavior in a vulnerable population-precise identification of the correlates of cessation and the barriers to a successful cessation during the pandemic

limitation: cross-sectional type- self-reports-women in Bandar Abbas - disrupted reminders



Conclusion

The present findings give us a preliminary insight into the change of hookah smoking pattern during the COVID-19 pandemic. It shows that the disease managed to directly (e.g. by increasing the fear of severe symptoms of disease through smoking) and indirectly (e.g. by setting limits) reduce the rate of hookah smoking.



References

- 1-Organization, W. H., & Regulation, W. S. G. o. T. P. (2015). Advisory note: waterpipe tobacco smoking: health effects, research needs and recommended actions by regulators.
- 2-Sighaldehy, S. S., Baheiraei, A., Dehghan, S., & Charkazi, A. (2018). Persistent use of hookah smoking among Iranian women: A qualitative study. Tobacco Prevention & Cessation, 4.
- 3-Baheiraei, A., Sighaldehy, S. S., Ebadi, A., Kelishadi, R., & Majdzadeh, S. R. (2015b). Psycho-social needs impact on hookah smoking initiation among women: a qualitative study from Iran. International Journal of Preventive Medicine, 6(1), 79.
- 4-Nemati, S., Rafei, A., Freedman, N. D., Fotouhi, A., Asgary, F., & Zendehdel, K. (2017). Cigarette and water-pipe use in Iran: Geographical distribution and time trends among the adult population; a pooled analysis of national steps surveys. Archives of Iranian Medicine (AIM), 20(5), 2006–2009.
- 5-World Health Organization Smoking and COVID-19. (2020). Retrieved from. <https://www.who.int/news-room/commentaries/detail/smoking-and-covid-19>.



Thank you for your attention

