

Determining Community Lifestyle in Sumatra Island during COVID-19 Pandemic Time

Eliza¹, Sumarman², Andi Eka Yuniarto^{3*}, Windi Indah Fajar Ningsih⁴, Emy Yuliantini⁵, Miratul Haya⁵, Ahmad Faridi⁶

ABSTRACT

COVID-19 is a contagious disease caused by severe acute respiratory syndrome coronavirus-2. This study aims to look at factors related to the lifestyle of people on the island of Sumatra during the COVID-19 pandemic. This study used a cross-sectional design with 2020 respondents with age criteria over 16 who lived on the island of Sumatra. The questionnaire in this study was in the form of an e-survey using Google form media and distributed through social media (WhatsApp, Facebook, and Instagram). Chi-square test was used to analyze the relationship between lifestyle factors in men and women with a level of $P < 0.05$ and the logistic regression analysis test. The results of this study indicate that there was significant relationship between men and women on smoking behavior (odds ratio [OR] = 142.286; 95% confidence interval [CI]: 10.134–1997.783), duration of physical activity (OR = 0.473; 95% CI: 0.359–0.624), food consumption (OR = 3.356; 95% CI: 1.672–6.737), salt consumption (OR = 1.596; 95% CI: 1.131–2.251), oil consumption (OR = 1.463; 95% CI: 1.043–2.050), water consumption (OR = 0.652; 95% CI: 0.475–0.895), and hand washing (OR = 4.130; 95% CI: 1.567–10.883). The community is expected to reduce smoking habits, adopt a healthy lifestyle by doing physical activity, consuming salt, oil, and air according to balanced nutrition and implementing hand habits to prevent the impact of COVID-19.

Keywords: COVID-19, Lifestyle, Pandemic, Sumatera

Asian Pac. J. Health Sci., (2020); DOI: 10.21276/apjhs.2020.7.4.13

INTRODUCTION

A mysterious pneumonia case was first reported in Wuhan, Hubei Province, in December 2019. The source of the infection was unknown, but the first reported case was related to a fish market in Wuhan, China.^[1] This disease was initially named temporarily as 2019 novel coronavirus (2019-nCoV), then World Health Organization (WHO) announced a new name on February 11, 2020, namely coronavirus disease (COVID-19) caused by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) virus.^[2]

This virus can be transmitted from person to person and has spread widely in China and more than 190 other countries and territories.^[2] SARS-CoV-2 transmission from symptomatic patients occurs through droplets that come out when coughing or sneezing. Several case reports indicate that transfer from an asymptomatic carrier is suspected, but the exact mechanism of transmission is not known. Cases related to transmission from asymptomatic carriers generally have a history of close contact with a COVID-19 positive patient.^[3]

As an effort to deal with COVID-19, the Indonesian government implements social distancing for the community. It provides health protocol principles, including using masks, washing hands/hand sanitizers, maintaining distance/avoiding crowds, increasing endurance, consuming balanced nutrition, managing comorbid diseases, and paying attention to high-risk society, also clean and healthy living habits.^[4,5]

In fact, many people do not comply with the existing regulations; even the government created many efforts to break the chain of the spread of COVID-19. However, this requires more awareness and support from the community.^[6] The lifestyle practiced by the community during the COVID-19 pandemic, which was not in line with the current government instruction, became the reason for researchers to observe factors related to the lifestyle of the people on the island of Sumatra during the COVID-19 pandemic.

¹Department of Nutrition, Palembang Health Polytechnic, Palembang, South Sumatera, Indonesia

²Public Health Office of South Sumatera Province, Palembang, South Sumatera, Indonesia

³Department of Nutrition, Faculty of Health Science, Siliwangi University, Tasikmalaya, West Java, Indonesia

⁴Department of Nutrition, Faculty of Public Health, Sriwijaya University, Indonesia

⁵Department of Nutrition, Bengkulu Health Polytechnic, Bengkulu, Indonesia

⁶Department of Nutrition, Faculty of Health Science, Muhammadiyah Prof. Dr. Hamka University, Jakarta, Indonesia

Corresponding Author: Andi Eka Yuniarto, Department of Nutrition, Faculty of Health Science, Siliwangi University, Tasikmalaya, West Java, Indonesia. E-mail: andiekayuniarto@gmail.com

How to cite this article: Eliza, Sumarman, Yuniarto AE, Ningsih WIF, Yuliantini E, Haya M, Faridi A. Determining Community Lifestyle in Sumatra Island during COVID-19 Pandemic Time. *Asian Pac. J. Health Sci.*, 2020; 7(4):48-52

Source of support: Nil

Conflicts of interest: None

Received: 19/07/2020 **Revised:** 15/09/2020 **Accepted:** 26/09/2020

METHODS

This study used a cross-sectional study design conducted in June 2020. Respondents, in this study, were 2020 people using a purposive snowball sampling technique. The inclusion criteria, in this study, were those over 16 years old who live in Sumatra Island. This research was part of the leading research entitled "Knowledge, Attitudes, and Practices and Lifestyle of Indonesian Communities in Facing COVID-19 in Indonesia" by Yuniarto *et al.* The questionnaire was distributed using the Google form application through social media such as WhatsApp,

Facebook, and Instagram. Data were analyzed descriptively and inferentially using Microsoft Excel 2013 and SPSS version 25 for Windows. Chi-square test was applied to investigate the relationship between lifestyle factors in men and women with a level of $P < 0.05$ and logistic regression analysis.

RESULTS

Based on Table 1, it shows that the majority of female respondents younger than 19 years old were 89.0%, and women over 19 years old were 81.1%. Based on the marital status, the majority of unmarried respondents were women, as much as 86.0%. Regarding the married status, most of them were women as much as 72.0%, and in other states (widows/widowers), most were women as much as 86.7%. In terms of education, the high school graduates and equivalent were mostly women, about 86.8% and college graduates were mostly women, about 76.9%. Based on the work status, the majority of women were not working at about 87.7%, and work status were mostly women, about 65.4%.

In Table 2, it can be seen that based on the bivariate test with a significance level (α) of 0.05. It was found that smoking habits had a significant relationship between men and women with $P = 0.000$ ($P < 0.05$). On the frequency of smoking, there was a significant relationship between men and women with $P = 0.000$ ($P < 0.05$). In physical activity, there was no significant relationship between men and women with $P = 0.071$ ($P > 0.05$). In the duration of physical activity, there was a significant relationship between men and women with $P = 0.000$ ($P < 0.05$). In the food consumed, there was a significant relationship between men and women with $P = 0.000$ ($P < 0.05$). In instant food consumption, there was no significant relationship between men and women with $P = 0.081$ ($P > 0.05$). In the consumption of fresh food, there was no significant relationship between men and women with $P = 0.185$ ($P > 0.05$). Regarding the consumption of fruit and vegetables, there was no significant relationship between men and women with $P = 0.395$ ($P > 0.05$). In terms of salt consumption, there was a significant relationship between men and women with $P = 0.000$ ($P < 0.05$). In sugar consumption, there was no significant relationship between men and women with $P = 0.241$ ($P > 0.05$). In oil consumption, there was a significant relationship between men and women with $P = 0.000$ ($P < 0.05$). In terms of water consumption, there was a significant relationship between men and women with $P = 0.003$ ($P < 0.05$). Regarding the habit of washing hands, there was a significant relationship between men and women with $P = 0.004$ ($P < 0.05$). For the sunbathing,

there was no significant relationship between men and women with $P = 0.160$ ($P > 0.05$).

Table 3 shows that based on the multivariate regression test, it was found that the smoking lifestyle had a significant relationship between men and women, men who smoke were 142.286 times higher than women. The duration of physical activity had a meaningful relationship between men and women. The length of physical activity for women <30 min was 0.473 times higher than men. The food consumed had a significant correlation between men and women. The food consumed by women who prepared themselves was 3.356 times higher than men. Salt consumption gained a substantial relationship between men and women, women consuming salt ≤ 1 tsp was 1.596 times higher than men. Oil consumption had a significant correlation between men and women; women consuming oil ≤ 5 tablespoons was 1.463 times higher than men. Water consumption had a meaningful relationship between men and women; women drink ≥ 8 glasses of water was 0.652 times higher than men. Hand washing habits had a significant correlation between men and women; women wash their hands was 4.130 times more often than men.

Table 2: Community lifestyle in Sumatera Island during COVID-19 pandemic time

Life style	Male		Female		Total		P value
	n	%	n	%	n	%	
Smoking							
No	272	13.9	1681	86.1	1953	100	0.000*
Yes	66	98.5	1	1.5	67	100	
Smoking frequency							
Rarely	282	14.4	1681	85.6	1963	100	0.000*
Often	56	98.2	1	1.8	57	100	
Physical activity							
No	61	13.8	381	86.2	442	100	0.071
Yes	277	17.6	1301	82.4	1578	100	
Duration of physical activity							
<30 min	202	13.3	1317	86.7	1519	100	0.000*
≥ 30 min	136	27.1	365	72.9	501	100	
Food consumed							
Buy	17	38.6	27	61.4	44	100	0.000*
Self-cooking	321	16.2	1655	83.8	1976	100	
Instant food consumption							
Rarely	177	15.5	968	84.5	1145	100	0.081
Often	161	18.4	714	81.6	875	100	
Fresh food consumption							
Rarely	12	23.5	39	76.5	51	100	0.185
Often	326	16.6	1643	83.4	1969	100	
Vegetables-fruit consumption							
Rarely	19	20.2	75	79.8	94	100	0.395
Often	319	16.6	1607	83.4	1926	100	
Salt consumption							
≤ 1 tsp	273	18.6	1194	81.4	1467	100	0.000*
> 1 tsp	65	11.8	488	88.2	553	100	
Sugar consumption							
≤ 4 tbsp	297	16.4	1514	83.6	1811	100	0.241
> 4 tbsp	41	19.6	168	80.4	209	100	
Oil consumption							
≤ 5 tbsp	269	18.6	1181	81.4	1450	100	0.000*
> 5 tbsp	69	12.1	501	87.9	570	100	
Water consumption							
< 8 glass	80	13.0	534	87.0	614	100	0.003*
≥ 8 glass	258	18.3	1148	81.7	1406	100	
Washing hands							
Rarely	9	42.9	12	57.1	21	100	0.004*
Often	329	16.5	1670	83.5	1999	100	
Sunbathing							
Rarely	102	18.6	445	81.4	547	100	0.160
Often	236	16.0	1237	84.0	1473	100	

Table 1: Characteristics of respondents (n=2020)

Respondent characteristics	Male		Female		Total	
	n	%	n	%	n	%
Age						
<19 years	62	11.0	501	89.0	563	100
≥ 19 years	276	18.9	1181	81.1	1457	100
Marital status						
Single	226	14.0	1386	86.0	1612	100
Married	110	28.0	283	72.0	393	100
Others (widow/widower)	2	13.3	13	86.7	15	100
Education						
<Senior high school	172	13.2	1130	86.8	1302	100
College/university	166	23.1	552	76.9	718	100
Occupation						
Not working	119	12.3	1419	87.7	1618	100
Working	139	34.6	263	65.4	402	100

Table 3: Analysis of factors related to community lifestyle between men and women in Sumatra Island during the COVID-19 pandemic time

Life style	OR	P value
Smoking	142.286 (10.134–1997.783)	0.000
Duration of physical activity	0.473 (0.359–0.624)	0.000
Food consumed	3.356 (1.672–6.737)	0.001
Salt consumption	1.596 (1.131–2.251)	0.008
Oil consumption	1.463 (1.043–2.050)	0.027
Water consumption	0.652 (0.475–0.895)	0.008
Washing hands	4.130 (1.567–10.883)	0.004

DISCUSSION

Smoking is a growing problem, and no solution has been found in Indonesia until now. Based on the bivariate test on smoking habits, there was a significant relationship between men and women on the island of Sumatra ($P = 0.000$). Men who smoke were 142.286 times higher than women. Research from China shows that the chances of developing a severe illness are 14 times higher among people with a history of smoking compared with those who do not smoke.^[7] Another study in China documented that 58% of people who infected COVID-19 and in critical condition were men. This may be due to more male than female smokers in China.^[8] Smokers have a higher susceptibility to COVID-19 because smoking means that the fingers (and possibly contaminated cigarettes) are in contact with the lips, which increases the possibility of hand-to-mouth transmission of the virus.^[9]

Nicotine has the effect of decreasing ACE2 compensation in adipose tissue, thus contributing to the development of pulmonary and cardiovascular disease.^[10] ACE-2 is the receptor used by viruses to enter host cells, predisposing to an increased risk of infection in patients exposed to COVID-19.^[11,12] Another study proves that not only cigarettes derived from tobacco can affect an increased risk of COVID-19 infection but the use of e-cigarettes also has the same effect. What is more, the risk rises twice when a person smokes both types of cigarettes.^[13]

Physical activity/sports should be done during the COVID-19 pandemic; people must remain active even though they work and study from home. Social distancing and work from home tend to drive a person to have a sedentary lifestyle. Based on the bivariate test, it shows that the duration of physical activity has a significant relationship between men and women ($P = 0.000$). The length of physical activity for women <30 min was 0.473 times higher than men. Physical activity/sports, in general, have the benefit of increasing stamina, reducing the risk of degenerative diseases, and increasing the body's immune system.^[14] Routine exercise and maintaining body fitness can increase endurance; by maintain it, the body will be less risky to disease. Resistance to disease depends on the quality of the immune system; if it is in optimal conditions, it will avoid disease, whereas if it decreases, it will be susceptible to disease.^[15] The COVID-19 pandemic has brought about behavioral changes that are considered essential for the health and sustainability of society.^[16] Access to food consumed, there was a significant relationship between men and women with $P = 0.000$. The food consumed by women who cooked themselves was 3.356 times higher than men. The physical restriction policy during the COVID-19 pandemic helped the change of people's consumption patterns, by trial and carried out new activities such as cooking at home. This was consistent with previous research, which showed that more than half of the respondents cooked food at home more often during the pandemic than before the

pandemic.^[16,17] Cooking activities at home are useful in providing opportunities to prepare healthier meals, and food practices with families have an impact on increasing social interaction between household members.^[18]

The WHO recommends limiting table salt consumption to 5 g a day (2000 mg sodium).^[19,20] Excess sodium intake, especially in the form of sodium chloride, can disrupt the balance of body fluids, causing hypertension.^[21] Based on the bivariate test, it shows that salt consumption had a significant relationship between men and women with $P = 0.000$. Women who consumed salt ≤ 1 tsp a day were 0.652 times higher than men. This was in line with previous research, which showed that women consumed more salt than men.^[22] The incidence of hypertension is more frequently found in respondents whose consuming salt was higher than those consuming low salt.^[23,24]

The recommended fat consumption/person/day is 20–25% of total energy (702 kcal) or the equivalent of fat 5 tablespoons/person/day (67 rams/person/day).^[25] Following the bivariate test, it shows that oil consumption had a significant relationship between men and women with $P = 0.000$. Women consume ≤ 5 tablespoons of oil a day 1.463 times higher than men. Consumption of high fat in the long term can increase the risk of obesity (overnutrition and obesity) and increase body weight, so the fat content in food needs to be considered.^[26] It is better to avoid saturated fatty acids (SFA) and replace them with unsaturated fats. The replacement of 5% energy from SFA with monounsaturated fatty acids or polyunsaturated fatty acids leads to the lowering of obesity.^[27] Fulfilling the body's nutritional needs is affected by the selection of diverse and balanced foods following balanced nutrition guidelines.^[28]

Water needs vary and fluctuate over time. This is influenced by various factors, such as gender, age, activity level, and environmental factors.^[29,30] Water is essential for metabolism, transport of substrates across membranes, cellular homeostasis, temperature regulation, and circulatory function.^[31] Water also serves as an essential nutrient associated with preventing non-communicable diseases.^[32] Lack of water in the body can cause dehydration. Dehydration can cause decreased attention, concentration, and other cognitive and motor functions, as well as feeling tired and headaches.^[33,34] Based on the bivariate test, it shows that water consumption had a significant relationship between men and women with $P = 0.003$. Women who drink ≥ 8 glasses of water a day were 1.596 times higher than men. This was different from the previous research, which showed that men's water consumption was higher than women's.^[35] Drink at least eight glasses of water is related to a person's hydration level and can make kidneys healthier.^[36] The quality of drinking water is influenced by the higher mineral content of Mg, Sr, and Se, which has a significant impact on people's health and longevity.^[37] Water consumption is also beneficial for improving moods such as calmness, satisfaction, positive emotions, and enthusiasm for the activity. Besides that, consuming enough water can reduce fatigue.^[38]

Hand hygiene is crucial to prevent the spread of COVID-19. Hand washing behavior is one of prevention against the transmission of COVID-19.^[39] Hand washing behavior had a significant relationship between men and women with $P = 0.004$. Women who wash their hands were 4.130 times higher than men. Washing hands using soap are known as an effort to prevent disease and blocked disease transmission. This is due to the hands

are agents that carry germs and cause pathogens to pass from one person to another, either by indirect contact or direct contact (using other surfaces such as towels and glasses).^[40] According to the previous research, washing hands using soap or using alcohol-based hand washing are effective in reducing the microbes on the hands.^[41] The WHO recommends washing hands with running water and using soap in preventing transmission of the COVID-19 viruses.^[2] Wash hands with rubbing alcohol for 20–30 s, whereas if hands are visibly dirty, hands should be washed with soap and running water for 40–60 s using the appropriate method.^[42]

CONCLUSION

Smoking, duration of physical activity, food consumed, hand washing, salt consumption, water consumption, and oil consumption showed a significant relationship between men and women. A high smoking lifestyle can increase the risk of COVID-19 transmission, so it expected people to reduce smoking by adopting a healthy lifestyle. The duration of physical activity, food consumed by cooking, washing hands using soap, drinking eight glasses of water a day, and consuming salt and oil as recommended are parts of a healthy lifestyle that become an effort to prevent the transmission of the COVID-19 disease.

Limitation of the Study

This study needs to be replicated in various ways larger settings and populations to be able to generalize the results.

ETHICAL APPROVAL

This study was approved by the Health Research Ethics Committee of Health Polytechnic of Health Ministry, Bengkulu No. KEPK/063/06/2020.

ACKNOWLEDGMENTS

The authors thank all respondents who were involved for their cooperation and support in this study.

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