

REVIEW ARTICLE

Health Impact of Preservative Food Consumption in Karachi, Pakistan

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ABSTRACT

Consumption of foods that contain preservatives is on the rise in Karachi due to increased lifestyle pressures, urbanization, and the growing trend of convenience foods. Such food products are favored by the public since they are easily accessible and durable. Nevertheless, health risks associated with such consumption are of great concern. Studies suggest that excessive consumption of preservatives may result in gastrointestinal problems, allergies, obesity, hormone disturbances, and many more illnesses. Although there is increased awareness of their dangers, many people continue to consume food products containing preservatives. This calls for a research study of the health impacts of consuming these foods among Karachi's residents. The objective of this study is to investigate the effects of consuming preservative foods on health in the city of Karachi. This study aims to find out the most common preservative-containing food products that people consume, the motivation behind the consumption of such products, and the effects that preservatives have on consumers' health. The research is conducted using a quantitative approach. In order to collect data, a structured questionnaire survey was distributed among people living in Karachi and consuming foods containing preservatives. A total of 59 participants provided their information for analysis using SPSS. Frequencies, percentages, mean scores, and regression analysis have been utilized. The study concentrated on respondents' answers in order to examine the preservatives consumed. Three key points emerged from the results. Firstly, food containing preservatives is frequently consumed due to their availability and long shelf life. Secondly, many respondents recognized possible health risks associated with consumption of these foods, including stomach problems, allergies, and weight gain, among others. Finally, participants who understand the negative consequences of preservatives on health were more prone to examine label information prior to purchasing. It can be assumed that frequent consumption of food with preservatives may be associated with reduced consumption of fresh products. The study has concluded that people of Karachi regularly consume foods with preservatives and suffer from various health issues. Suggestions in this regard encompass consumer education towards the health impact of these foods, following healthy diets, food labeling, and introducing higher proportions of fresh food items for consumption.

Keywords: Food preservatives; Health impact; Consumer awareness

INTRODUCTION

The fast lifestyle that is prevalent nowadays causes a lot of people in Karachi to rely upon fast foods, which not only contain preservatives but also chemicals, leading to disastrous consequences on one's health. Studies propose that frequent intake of such foods might also contribute to obesity, digestive problems, hypersensitive re-

actions, and chronic illnesses. Understanding the health impact of preservative foods is critical for raising public attention and promoting healthier dietary choices. This study focuses on analyzing the connection between preservative food intake and its potential impacts on the health of citizens in Karachi.

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Overconsumption of food additives can cause harmful effects like vomiting, dizziness, headache, abdominal cramps, irritable bowel syndrome, migraine, hyperactivity, eczema, nausea, and other behavioral disorders. Processed foods are to blame for obesity and metabolic disorders and also serve as a poor source of diet. (Monda et al., 2024). In Pakistan, even the imagination of natural food is impossible. There are some notable gaps in existing studies. They did not address the hormonal imbalances and endocrine disruptions that may result from regular consumption of preservatives. They also did not discuss the long-term effects such as infertility or chronic diseases. Moreover, they did not suggest healthier dietary alternatives that could minimize these risks (MR et al., 2026; Singh et al., 2025). Food safety remains a concern in Pakistan, where food contamination may occur through chemical, biological, and physical sources, posing potential risks to human health (Ali et al., 2023). For university students, eating habits are formed during a critical transitional phase marked by increased independence, changing social environments, and financial constraints, which together influence long-term consumption patterns (Nemeth et al., 2019; Almoraie et al., 2024); (Díaz-Pichardo, R., Vota, V., & Tettamanzi, P. 2026). Economic factors can influence students' food choices, despite growing awareness and positive attitudes toward healthier options. (Aprile and Punzo, 2022; Cavallo et al., 2020). Antimicrobial preservatives may disrupt gut microbiota, yet human evidence on their health effects remains limited (Almoraie et al., 2024).

RESEARCH QUESTIONS

- 1) What types of preservative foods are most commonly consumed in Karachi?
- 2) Why do residents depend on preserved foods?
- 3) What are the impacts of food additives and preservatives on consumer health in Karachi?

RESEARCH OBJECTIVES

- 1: To identify the types of preservative- and additive-containing foods most commonly consumed in Karachi.
- 2: To analyze the key reasons behind residents' dependence on preserved foods.
- 3: To evaluate the impacts of food additives and preservatives on consumer health in Karachi.

SCOPE OF THE STUDY

This study focuses on the health impact of preservative food consumption among residents of Karachi,

Pakistan. It examines consumption patterns across different age groups, including children (5–12), adolescents (13–18), young adults (19–35), middle-aged adults (36–55), and the elderly (>55), as well as across genders, income levels, and occupation types such as students, working professionals, homemakers, and unemployed individuals. The study analyzes the relationship between preservative food intake and health outcomes, such as digestive disorders, obesity, allergies, and other chronic conditions. It focuses only on Karachi's population and does not extend to other cities or regions. The research is limited to commonly consumed preservative-laden foods available in local markets and does not cover homemade or naturally preserved foods. The study also incorporates insights from the food industry to understand consumer preferences and market trends related to additives).

SIGNIFICANCE OF THE STUDY

The significance of this research lies in the fact that it can help determine the effect of frequent consumption of preservatives on the health of residents of Karachi. The impact of common preservatives on health is manifested in various negative effects on the body, including the risk of allergies, hormonal imbalance, digestive problems, and even obesity and chronic diseases in the long term. Through the study, one can understand the effects of specific preservatives and take certain measures to reduce or prevent negative consequences. The study raises awareness among people regarding what preservatives are used in food packages. In turn, knowing the effects of preservatives on human health helps consumers avoid products containing them. Thus, people will not only be informed but will be more attentive in choosing food. It will also provide policymakers with valuable information to update legislation on food security issues in the city.

LITERATURE REVIEW

Based on the research topic, this study explains the endocrine disruption theory.

Endocrine Disruption Theory

The endocrine system of our body, which is involved in hormone regulation and production, is one of the key aspects of our body functioning correctly. However, it is unfortunate that the chemicals in food preservatives have the potential to interfere with the endocrine function of our body. These food preservatives are known as endocrine-disrupting chemicals (EDCs). EDCs are known to interfere with hormone function by either mimicking them or inhibiting them from functioning correctly. For example, some of these food preservatives are known to increase estrogen levels in our body, which could lead to hormone-related disorders such as breast

cancer, early puberty in girls, and fertility issues. Additionally, these food preservatives are also known to interfere with thyroid and insulin hormone regulation and could lead to disorders such as obesity and diabetes. Though most of these EDCs have been tested on animals, it is unfortunate that we are still unsure of the long-term effects on humans, especially considering that we consume these food preservatives regularly. The endocrine and hormonal disruption could lead to serious consequences on our body, especially during critical developmental stages of children and during pregnancy (Gore, A. C., Chappell, V. A., Fenton, S. E., et al., 2015).

RESEARCH VARIABLE

Health Impact

Health impact, in this case, refers to the physical, biological, and long-term effects on the human body due to certain food consumption habits, such as the consumption of food products that contain preservatives. The effects include digestive problems, allergies, and an increased risk of acquiring certain diseases, among other physiological changes that occur in the human body due to the consumption of chemical-based food preservatives. In this research, health impact is used as an independent variable in assessing the effects of food consumption habits on the general well-being of human beings.

Consumption of Preservative-Containing Foods

Preservative-containing foods are preserved food items consumed by an individual on a daily basis. Preserved food items include canned food items, packaged food items, processed meat products, frozen food items, and other ready-to-eat food items that are preserved using chemical preservatives to enhance their longevity. The variable helps to measure the frequency. The variable under consideration pertains to the quantity and frequency with which an individual consumes preserved food items.

Reduction in Natural Food Consumption

Reduction in natural food consumption implies the reduction of the amount of natural, fresh, and organic, or minimally processed foods such as fruits, vegetables, and homemade meals. As the availability of preserved and processed foods increases, people may gradually reduce their natural food consumption. This variable would enable the analysis of whether the consumption of preserved foods results in the reduction of natural and nutritious foods. It refers to decreased intake of fresh, organic, or unprocessed foods due to higher consumption or availability of preserved foods.

THEORETICAL FRAMEWORK

Figure 1 shows the research variables.

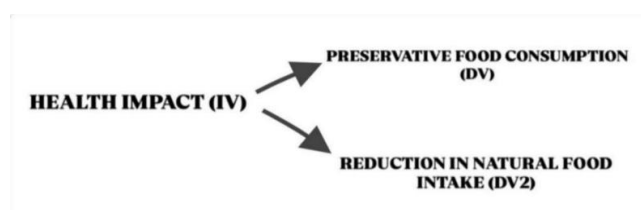


Figure 1. Research variable

HYPOTHESIS

Preservative Food Consumption and Health Outcomes

Increased consumption of food products with preservatives is linked to negative health outcomes such as allergies, digestive problems, obesity, and other chronic health conditions.

H1: As preservative intake increases, health risks increase.

Natural Food Consumption and Health Outcomes

Decreased consumption of natural and fresh food products such as fruits, vegetables, and home-cooked meals is linked to negative health outcomes and reduced overall well-being.

H2: As natural food consumption decreases, health risks increase.

Preservative Food Consumption and Natural Food Intake

Increased consumption of food products with preservatives is linked to a considerable decrease in the overall consumption of natural and fresh food products.

H3: Greater dependence on preserved foods leads to lower consumption of natural foods, amplifying negative health outcomes.

RESEARCH METHODOLOGY

This section is focused on research design, area of study, population, sample of the population, sampling technique, instrument for data collection, validation of the questionnaire, administration of the instrument, and method of data analysis.

RESEARCH DESIGN

In this study, a quantitative research design is employed in investigating the impact of preservative food consumption.

tion on health in Karachi, Pakistan. Quantitative research is employed because it will enable the researcher to obtain numerical data from a large sample of respondents and will help in properly analyzing the relationship between food habits and health outcomes. This study will have a descriptive and analytical research purpose because it will attempt to describe the existing food habits of preservative food consumers and will attempt to analyze their health impact on consumers in Karachi. The data collection methods include the use of structured questionnaires to obtain data from selected respondents across different age groups, genders, and backgrounds. The research design is important in understanding the level of awareness and attitudes towards the use and consumption of preservative foods and their impact on health. By using this research design, the study can present the findings in an easy and measurable manner to make reliable conclusions regarding the impact of preservative foods on the health of the population in Karachi.

DELIMITATION OF THE STUDY

This study has been carried out within certain limits to keep the research focused and within manageable limits. Firstly, the study has been carried out among a certain number of respondents in Karachi only, so the findings of the study may not be representative of the total population of Pakistan. Secondly, the study has been carried out only on the health effects of food items containing preservatives, without looking into other factors as well. The study has been carried out on the basis of data collected through questionnaires, which means the findings of the study would be dependent upon the understanding of the respondents as well as their honesty in responding to the questionnaire. Keeping these limitations in mind, the study has been carried out to give a useful insight into the eating habits of the population of Karachi regarding food items containing preservatives.

POPULATION OF THE STUDY

The population of this study includes the residents of Karachi who regularly consume food containing preservatives, such as packaged, canned, or processed food products. This group of people is selected on the basis that their eating habits have a direct influence on evaluating the health impacts of food preservatives. The target audience consists of people of varying ages, educational levels, and occupations. Through studying this group of people using questionnaire distributed to 70 people, it becomes easy for the researcher to evaluate how well people know about food preservatives, what affects the usage of these food preservatives, and also the possible impact of their use on the physical condition of the population. This population is chosen to provide a clear and appropriate basis for the assessment

of the relationship between the consumption of food containing preservatives and health outcomes, considering the context of Karachi, Pakistan.

SAMPLE OF THE POPULATION

The sample consisted of people in Karachi consuming preservative-rich foods. Since the target population was made up of 70 people and was small in number, the researcher initially took into account the whole population as his intended sample. As a result, a total of 70 questionnaires were administered to the targeted population through the non-probability convenience sampling method. A total of 59 responses were received and deemed appropriate for analysis from the 70 questionnaires that were administered. The final sample size for data analysis therefore stood at 59 respondents. The respondents were from varying age groups, educational backgrounds, and occupational backgrounds, offering an extensive sample for analysis of their eating behaviors as well as their awareness on the association between the consumption of preservative-rich foods and health. Although the intended sample included all 70 people in the target population, the 59 responses received were those included in the final analysis. The sample size taken for the study is found to be suitable as per the total population size, as suggested by Krejcie and Morgan (1970) in Figure 2.

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384

Note: N is Population Size; S is Sample Size

Source: Krejcie & Morgan, 1970

Figure 2. Research sample

SAMPLING TECHNIQUE

This study used a non-probability convenience sampling technique. Respondents were selected based on their

availability and willingness to participate. The participants were residents of Karachi who regularly consume preservative-containing foods, making them suitable for the objectives of this research.

INSTRUMENT FOR DATA COLLECTION

For this research study, the researcher has employed a structured questionnaire as one of the main tools for collecting data. Data were collected through the use of questionnaires from the inhabitants of Karachi, particularly those who frequently consume foods that contain preservatives like processed, packaged, and canned foods. Questions contained in the questionnaire have been formulated to help collect information on the habits of the respondents, knowledge regarding food preservatives, frequency of eating food that contains preservatives, and the illnesses that have resulted from the consumption of foods with preservatives. The questions used in the questionnaire have been formulated with respect to the research questions, objectives, and review of literature provided in section two of the research work. There are five main sections of the questionnaire that have been denoted as A, B, C, D, and E. Section A of the questionnaire is concerned with the demographics of the respondents including their age, gender, education, occupation, and income levels. Section B of the questionnaire has questions that center on the food habits of the respondents regarding the consumption of food preservatives, which cover the frequency of consumption, types of food consumed, and the reasons for choosing such food. Section C of the questionnaire has questions that cover respondents' level of awareness regarding food preservatives, which cover their level of knowledge. Section D of the questionnaire has questions that cover the health effects experienced by the respondents, which cover the health concerns experienced by the respondents regarding the consumption of food preservatives. Section E of the questionnaire has questions that cover the food habits of the respondents, which cover the respondents' attitude towards food preservation, suggestions to improve healthy food habits, willingness to reduce food preservatives, and the choice of natural food.

METHOD OF DATA COLLECTION

Finally, the validated and pilot-tested questionnaire was provided to the selected respondents for data collection purposes. The target population for the study was the residents of Karachi, representing different ages, occupations, and socioeconomic statuses. The research aimed to investigate the pattern of consuming preservative foods and the potential impact on the health of the general population. By using the non-probability sampling technique, 70 questionnaires were provided for data collection pur-

poses, out of which 59 valid and effective responses were obtained for the statistical analysis of the data. Since the target population for the study was individuals with different educational statuses, the questionnaires were mainly provided through face-to-face interaction with the respondents, ensuring effective participation in the study. The respondents were guided for better understanding, but care was taken not to influence the results. The respondents were given the following information before the data collection process: the purpose of the research, the voluntary nature of the research, the right to withdraw from the study at any given time, and the confidentiality of the data. The questionnaires were also reviewed to ensure the effective collection of data. The results obtained were analyzed to check the relationship between the consumption of preservative foods and the impact on the health of the respondents.

METHOD OF DATA ANALYSIS

The data collected from the respondents were analyzed using quantitative statistical methods based on the research design. The research study included 70 respondents from Karachi who frequently consume food products containing preservatives, and a sample size of 59 respondents was selected for statistical analysis. The data collected from the questionnaires were organized and converted into numerical form for statistical analysis. Descriptive statistical methods were used to analyze the data. Demographic data such as age, gender, education level, occupation level, and income level were analyzed using frequency distribution and percentages to describe the respondents. Similarly, data on the type of food products containing preservatives, frequency of consumption, reasons for consumption, awareness level of food preservatives, and health problems faced due to preservative food consumption were analyzed using percentage distribution to identify patterns among the respondents. Questions that elicited the attitudes, awareness, and perceptions of the respondents on preservative food consumption and its health effects were analyzed using a 5-point Likert scale. Numerical values were assigned as follows: Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, and Strongly Disagree = 1. The average score was computed to determine the overall response pattern. The benchmark used was 3.00, responses with mean score of 3.00 and above were considered significant and responses below 3.00 were considered not significant. The data were analyzed based on the main variables of the study: "health impact, consumption of preservative-containing foods, and reduction in natural food consumption." The response patterns were analyzed to determine whether increased preservative food consumption and reduced natural food intake were associated with respondents' health problems.

DATA PRESENTATION AND ANALYSIS

The study is based on 59 valid responses from residents of Karachi who regularly consume preservative-containing foods. All responses were recorded through a structured questionnaire using a 5-point Likert scale, where participants indicated their level of agreement with different statements. The data were later processed and analyzed using SPSS.

DEMOGRAPHIC INFORMATION OF RESPONDENTS

Gender: Figure 3 shows that most respondents were female. Out of 59 responses, 71.2% were females while 28.8% were males. This indicates that female participants contributed more to the survey compared to male participants.

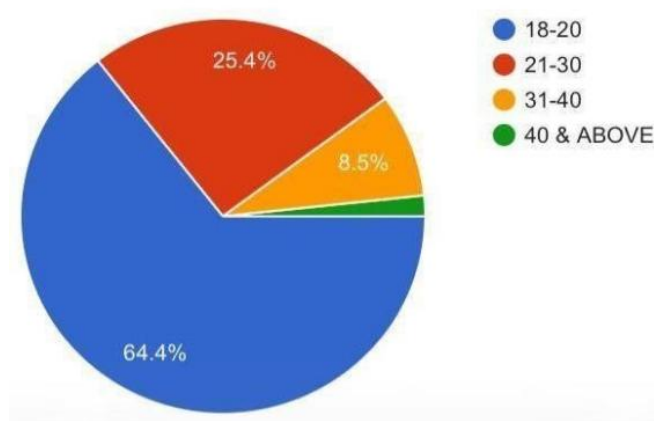


Figure 3. Gender

Age Group: Out of 59 people who responded to the survey, most of them (around 64%) are between 18 and 20 years old. Another 25% fall in the 21 to 30 age range. Only a small number of respondents, about 8.5%, are aged 31 to 40, and almost none are 40 or above. This study mostly heard from young adults, especially teenagers and people in their early twenties. Older adults barely participated. So the findings mostly reflect what younger people in Karachi think and experience when it comes to eating preservative-containing foods. See Figure 4.

Qualification: More than half of the participants (52.5%) hold a Bachelor's degree. Another 25.4% have completed Intermediate or A-Levels, while 15.3% have a Matric or O-Level qualification. Only a small portion have Master's or PhD degrees (the remaining percentage not shown in the figure). The majority of the respondents in this survey are university-educated people, while a smaller number are from colleges. Very few have ad-

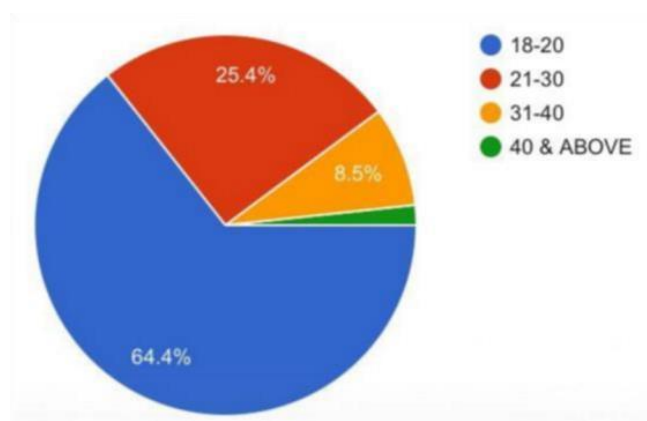


Figure 4. Age group

vanced degrees, such as Master's or PhD. Thus, the results of this research largely represent the opinions of young and middle-aged educated people in Karachi. See Figure 5.

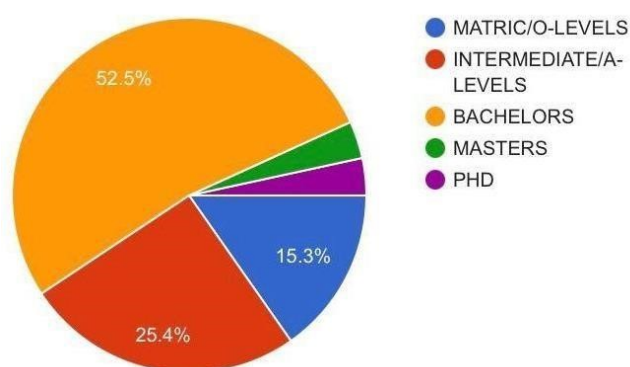


Figure 5. Qualification

Monthly Household Income: The largest group of respondents (34.5%) earn above 100,000 rupees per month. Then, 24.1% fall in the 40,000–70,000 range, while 22.4% earn between 80,000–100,000. The smallest group, 19%, make between 10,000–30,000. Most people who took part in this survey come from middle-to-higher income households. Very few are from lower-income backgrounds. So the findings are more about the eating habits of relatively well-off families in Karachi, not necessarily everyone in the city. See Figure 6.

RESEARCH QUESTIONS

Figure 7 is Model Summary.

Interpretation

The R Square value of 0.205 indicates that 20.5% of the variation in the dependent variable is explained by the variables included in the model, while the remaining

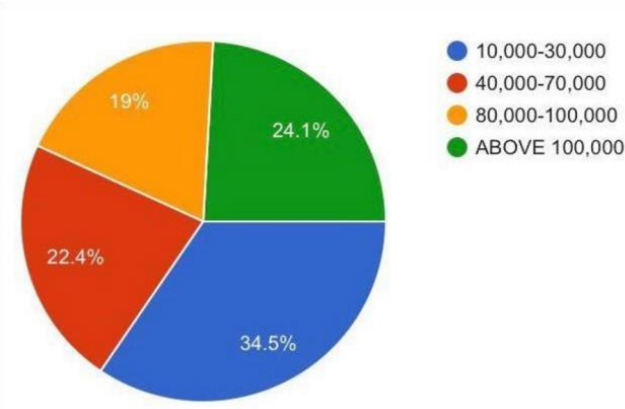


Figure 6. Monthly household income

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.452 ^a	.205	.072	.929

Figure 7. Model Summary

79.5% is influenced by other factors not included in the study.

Figure 8 is Coefficient.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.482	1.187		2.933	.005
	4. DO YOU BELIEVE THAT CONSUMING FOODS WITH PRESERVATIVE AFFECTS OVERALL HEALTH?	.019	.192	.014	-.097	.923
	6. DO YOU THINK PRESERVATIVES AFFECT CHILDREN'S HEALTH MORE THAN ADULTS?	-.213	.160	-.202	-1.324	.192
	5. TO WHAT EXTENT DO YOU 4 WITH THIS STATEMENT "FOODS WITHOUT PRESERVATIVES ARE SAFER FOR LONG TERM HEALTH"	-.185	.142	-.185	-1.303	.199
	7. DO YOU THINK PRESERVED FOODS AFFECT PEOPLE DIFFERENTLY DEPENDING ON AGE AND LIFESTYLE?	-.172	.148	-.214	-1.163	.251
	8. HAVE YOU OR SOMEONE YOU KIW EVER EXPERIENCED ANY HEALTH ISSUES CAUSED BY CONSUMING FOODS WITH PRESERVATIVES ?	.290	.314	.127	.924	.360
	10. DO YOU THINK FOOD PRESERVATIVES NEGATIVELY AFFECT MENTAL WELL-BEING, MOOD OR MAKE YOU FEEL LETHARGIC (TIRED)?	.102	.143	.115	.710	.481
	12. ARE YOU CONCERNED ABOUT HEALTH RISKS OF PRESERVATIVES IN FOODS YOU EAT DAILY OR 2?	-.170	.154	-.161	-1.101	.277
	14. DO YOU THINK WOMEN'S HEALTH ISSUES (MISCARRIAGE, PCOS, OBESITY, ETC.) HAVE BEEN WIDELY AFFECTED BY HIGHER CONSUMPTION OF PROCESSED FOODS?	.147	.161	.132	.914	.365

Figure 8. Coefficient

Interpretation

The *t*-test and significance (Sig.) values show whether each independent variable significantly predicts the dependent variable. Among all variables, only “Do you believe that consuming foods with preservatives affects overall health?” was found to be statistically significant, with a *t*-value of 2.173 and a Sig. value of 0.035, which is

less than 0.05. Therefore, this variable significantly influences whether respondents check ingredient labels for preservatives before buying food products. All other variables have Sig. values greater than 0.05, indicating that they are not statistically significant predictors of the dependent variable and do not have a meaningful effect on respondents’ label checking behavior.

Figure 9 is Model Summary.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.528 ^a	.279	.158	.931

Figure 9. Model Summary

Interpretation

The R Square value of 0.279 indicates that 27.9% of the variation in the dependent variable is explained by the variables included in the model, while the remaining 72.1% is influenced by other factors not included in the study.

Figure 10 is Coefficient.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.077	1.190		.065	.948
	4. DO YOU BELIEVE THAT CONSUMING FOODS WITH PRESERVATIVE AFFECTS OVERALL HEALTH?	.420	.193	.307	2.173	.035
	6. DO YOU THINK PRESERVATIVES AFFECT CHILDREN'S HEALTH MORE THAN ADULTS ?	-.072	.161	-.065	-.446	.658
	5. TO WHAT EXTENT DO YOU 4 WITH THIS STATEMENT "FOODS WITHOUT PRESERVATIVES ARE SAFER FOR LONG TERM HEALTH"	.256	.143	.243	1.798	.078
	7. DO YOU THINK PRESERVED FOODS AFFECT PEOPLE DIFFERENTLY DEPENDING ON AGE AND LIFESTYLE?	.005	.149	.005	.030	.976
	8. HAVE YOU OR SOMEONE YOU KIW EVER EXPERIENCED ANY HEALTH ISSUES CAUSED BY CONSUMING FOODS WITH PRESERVATIVES ?	-.414	.315	-.173	-1.317	.194
	10. DO YOU THINK FOOD PRESERVATIVES NEGATIVELY AFFECT MENTAL WELL-BEING, MOOD OR MAKE YOU FEEL LETHARGIC (TIRED)?	-.055	.144	-.060	-.386	.701
	12. ARE YOU CONCERNED ABOUT HEALTH RISKS OF PRESERVATIVES IN FOODS YOU EAT DAILY OR 2?	.289	.155	.260	1.867	.068
	14. DO YOU THINK WOMEN'S HEALTH ISSUES (MISCARRIAGE, PCOS, OBESITY, ETC.) HAVE BEEN WIDELY AFFECTED BY HIGHER CONSUMPTION OF PROCESSED FOODS?	.038	.161	.032	.234	.816

a. Dependent Variable: 3. DO YOU CHECK THE INGREDIENTS LABEL FOR PRESERVATIVES BEFORE BUYING A FOOD PRODUCT ?

Figure 10. Coefficient

Interpretation

The *t*-test and significance (Sig.) values indicate whether each independent variable significantly predicts the dependent variable. Among all variables, only “Do you believe that consuming foods with preservatives affects overall health?” was found to be statistically significant, with a *t*-value of 2.173 and a Sig. value of 0.035, which is less than 0.05. Therefore, this variable has a significant effect on whether respondents check ingredient labels for preservatives before purchasing food products. All other variables have Sig. values greater than 0.05, indicating that they are not statistically significant predictors of the dependent variable and do not have a significant effect on respondents’ label checking behavior. Hypothesis Decision H_0 : Accepted for “Do you believe that consuming foods with preservatives affects overall health?” (Sig. = 0.035 < 0.05). H_0 : Accepted for all remaining variables because their Sig. values are greater than 0.05.

HYPOTHESIS TESTING

The analysis examined the reasons behind the consumption of preservative-containing foods and their impact on the health of consumers in Karachi. The findings revealed several factors that encourage people to consume packaged and processed foods. According to the majority of respondents, busy lifestyles, convenience, availability, and longer shelf life make preservative-containing foods a practical alternative to fresh foods. The study also found that many respondents are aware that excessive consumption of preservatives may have negative effects on health. Common concerns reported by participants included digestive problems, allergic reactions, obesity, and other health-related issues. Notwithstanding the above findings, people still eat foods with preservatives on a daily basis since such foods are available and take a shorter time to prepare. In addition, the findings show that consumption of foods with preservatives reduces consumption of fresh vegetables, fruits, and homemade foods, posing health risks due to poor nutrition. Also, people who have an understanding of preservatives and how they influence overall health tend to look at the content of preservatives before buying food. In conclusion, while foods with preservatives make life easy, excessive consumption of these foods may pose serious health risks to consumers.

DISCUSSION

The findings obtained in the study indicate that foods with preservatives are commonly consumed by residents of Karachi city, mainly youth. The majority of the respondents knew that the consumption of large amounts of preserved foods could cause some negative impacts on their health. It has also been found that respondents who considered that preservatives influenced their

health tend to read labels while buying food products. Consequently, it can be suggested that increased consumption of foods containing preservatives could cause health disorders, as well as reduce the consumption of fresh and natural foods.

SUMMARY OF FINDINGS

This study has been developed to explore the impact of preservative food consumption in Karachi, Pakistan. The main purpose of carrying out research was to explore information about common types of preservative foods that people consume in Karachi, reasons why they consume those foods, and the impact of preservative foods on their health. Questionnaires were distributed to selected respondents using non-probability convenience sampling and the data collected were processed through SPSS. Based on the results of the current study, it can be stated that preservative foods are widely consumed in Karachi. Participants stated that they often consumed packaged foods, processed foods, and ready-to-eat foods because of their accessibility, long shelf life, and convenience. It is worth mentioning that many respondents admitted knowing about potential health hazards associated with preservatives contained in food products. Additionally, it can be noticed that respondents who think that consuming preservative foods affects their overall health more often check food ingredient labels prior to buying any product. The findings also show that excessive consumption of preservative foods may result in health issues like digestive disorders, allergies, obesity, and other health conditions.

CONCLUSION

Taking into account the results, it can be stated that food products containing preservatives have been included in the daily diet of numerous individuals living in Karachi. Despite the convenience of such products, their excessive consumption is likely to result in adverse effects related to health. According to the findings, there is a high possibility that the consumption of food products with preservatives is linked to different health issues. In addition, it should be said that knowledge about these products plays an important role in influencing consumers’ decisions. In other words, the more knowledgeable an individual is regarding the impact of preservatives on health, the more attentive he/she is going to be while reading food labels. Hence, according to the results of the study, it can be concluded that food products with preservatives are linked to health issues.

IMPLICATIONS OF THE STUDY

The results of this study could provide valuable insights for policymakers, health practitioners, food industries,

and subsequent studies about the implications of consuming preservative food on one's health. The increasing reliance on processed food items and packaged food products is an important issue that this research study emphasizes. The results of this study will benefit policy-makers by providing valuable data they may use to conduct awareness campaigns related to preservative food. Moreover, food industries may also find these results useful when it comes to making effective labeling of preservative food items.

LIMITATIONS OF THE STUDY

Some limitations of the study are mentioned below. Firstly, the research involved a limited number of respondents who were residing in Karachi; consequently, results of the study cannot be generalized to other cities of Pakistan. Secondly, a limited number of respondents were involved in the study owing to constraints of time and resources. Thirdly, questionnaire-based data collection involved personal perceptions of the respondents. In addition to the above limitations, the study is limited to preservative food consumption only and does not include other factors responsible for health outcomes.

RECOMMENDATIONS

Following the findings in the study, the following recommendations can be made:

1. Awareness campaigns must be initiated to educate consumers about the hazards of preservatives in terms of their health impact due to frequent consumption.
2. Consumers must be advised to check the ingredients listed on the labels of the packaged food before buying them.
3. Individuals need to consume more fresh fruits, vegetables, and home-cooked meals.
4. Manufacturers of the food items should clearly label the preservatives that have been used.
5. More studies on this topic must be performed on large samples across different cities of Pakistan.
6. Future studies may examine the long-term health effects of specific preservatives and compare their impact across different age groups.

DECLARATION

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Author contributions

Conceptualization: Alishba Junejo, Qanita Imtiaz Methodology: Alishba Junejo Investigation: Alishba Junejo Formal analysis: Qanita Imtiaz Writingoriginal draft: Alishba Junejo Writingreview & editing: Qanita Imtiaz

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Ethics approval and consent to participate

Formal ethical approval was obtained prior to questionnaire distribution. All survey participants provided voluntary informed consent. All personally identifiable information was fully anonymized during data processing to safeguard participant privacy.

Consent for publication

All participants agreed that their deidentified aggregated survey data may be used for academic publication. No individual identifiable records appear in this manuscript.

Conflict of interest

The authors declare no competing financial or personal interests that might affect the findings or interpretation presented within this manuscript.

Data availability

Anonymized questionnaire materials and SPSS analysis outputs can be accessed from the corresponding author upon reasonable written request.

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