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A Survey Study on Street Food Eating Behaviors of Adults of Varanasi during the COVID-19

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ABSTRACT:

Street food is defined as food cooked and sold by sellers for immediate consumption on streets and other public locations. In a COVID situation, when an infected person coughs, sneezes, or talks, droplets are generated that can be inhaled by others. This study is an approach to investigate street food consumption patterns of adults in Varanasi during COVID-19. The cross-sectional study was carried out on five street food locations of Varanasi. A self-structured questionnaire was used for data collection at five places. The mean age of the respondents was 26.714 years. Nearly one-fourth of the population had a higher BMI, showing overweight and obesity. 30 percent of respondents were eating street food 3 to 4 times a week. 64.8% of participants preferred to eat street food in the evening. More than 50% of the participants preferred street food because they wanted to discover new flavors during COVID-19. 44% of respondents did not care about hygiene when purchasing street food, while the pandemic was all over the world. This study gives a brief idea about the street food consumption pattern of adults in Varanasi during the critical pandemic, where nearly half of the people fail to maintain proper hygiene at eating establishments.

Keywords: *Street food, COVID-19, Adults, Varanasi, Immunity.*

1. INTRODUCTION:

Street food consists of readily available foods and beverages sold by vendors in public spaces. According to the Food and Agriculture Organization **(FAO)**, it includes "ready-to-eat foods and beverages

produced and sold by vendors and hawkers in streets and public spaces" **(Winarno FG, Allain A, 2009).** The World Health Organization further defines street-vended foods as those prepared and sold outside designated markets for direct consumption **(WHO, 1996).**

Street food represents diverse culinary traditions and supports local economies. Vendors typically operate small businesses, sourcing fresh ingredients locally and relying on location and customer recommendations for business growth **(FAO, 2015).** Due to changing lifestyles and time constraints, the demand for street food has risen, yet concerns remain regarding food safety and hygiene.

The nutritional content of street food varies significantly. Research from the Joint Netherlands/Indonesia Street Food Research Project indicates that street food can provide essential energy and nutrients. A study on college students found that it contributed 78% of total energy, 82% of protein, and 79% of iron intake **(Winarno FG, Allain A, 2009).** However, studies also reveal contamination risks, including banned dyes and pesticide residues.

Varanasi, a city in Uttar Pradesh, is known for its vibrant street food culture, offering traditional Indian dishes and fusion foods **(Gupta, V. et al., 2019).** While street food is vital for urban life, improving hygiene and food safety standards is essential for public health. According to World Health Organization a novel coronavirus is a new strain that has not been identified earlier in humans. Coronavirus is a massive family of viruses that cause illnesses ranging from the common cold to more severe diseases, thought to spreads from person to person through droplets emitted during coughing, sneezing, or talking by an infected person (WHO).

This study aims to know the street food consumption pattern and hygiene practices of the adults of Varanasi during the Corona Virus Disease Situation.

Methodology:

The whole study is accomplished under the following steps:

Research Design

The present study was a survey study, which was a descriptive cross-sectional design comprised of adults of Varanasi city.

Study area- This study was conducted in the five famous street food areas of Varanasi city, which consist Lanka, Assi Ghat, Sigra, Vishwanath Temple (BHU), and Chhittupur.

Sample Size- The sample was made up of 500 adults (both males and females) between the age bracket of 18 to 40 years.

Sampling Technique: Non-probability sampling also known as random accidental sampling has been used to obtain the sample.

Inclusion criteria: Those who are in the age group of 18 to 40 years, willing to participate and who are not suffering from any severe disease have been included in this study.

Exclusion Criteria: Individuals with incomplete responses and who have not followed inclusion criteria are excluded from the study.

Instrument of the study: Self-structured proforma was used for the collection of data which contains three parts: socio-demographic details, details about the consumption of street food patterns and their COVID-19, and vaccination details.

Technique of Data collection: Two research scholars collected data from August 2021 to October 2021. Participants were provided with a self-reported questionnaire for their demographic background and street food consumption pattern.

Ethical clearance: After obtaining approval from the institutional ethical committee, Institute of Medical Sciences BHU vide letter number Dean/2021/EC/2842, the researchers approach the respondents and screened for inclusion criteria and obtained consent from the respondents to maintain their autonomy.

Statistical Analysis: The data were analyzed using the Statistical Package for social sciences (SPSS Version 20).

RESULTS

A total of 500 respondents from Varanasi participated in the study, with 53% males and 47% females. The majority (67.2%) were unmarried, and the mean age was 26.71 years.

Gender Distribution Respondents:

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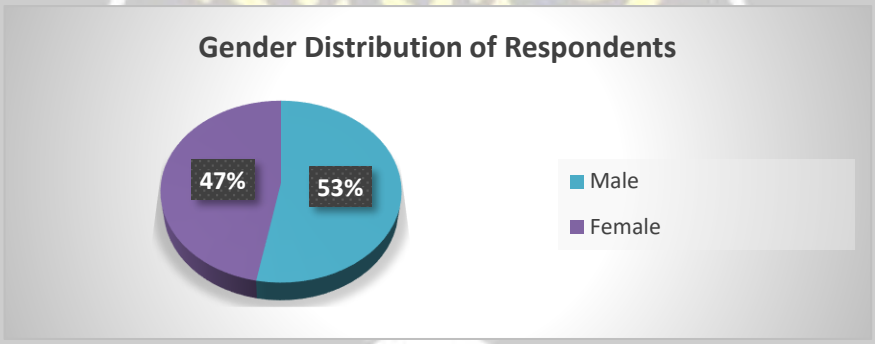

Figure 1

BMI Distribution of Respondents:

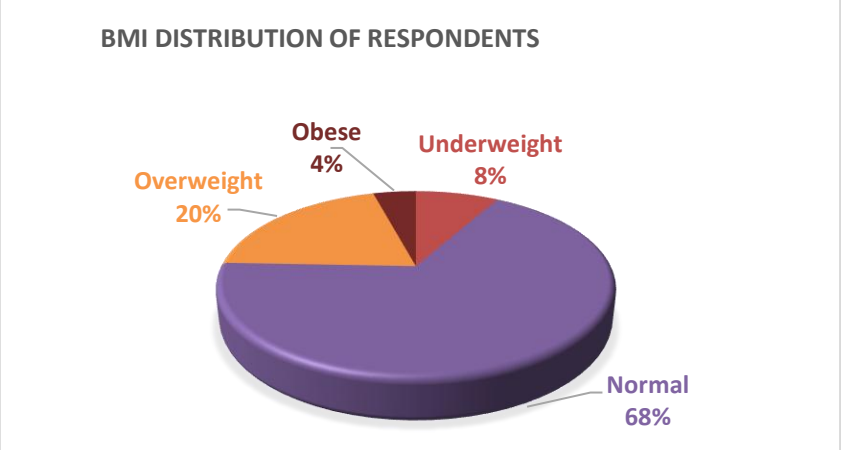

Fig.2

Table 1: Street food consumption pattern of respondents

Street food consumption pattern variables	Number	Percentage
Eating frequency		
Everyday	85	17
3 to 4 times	150	30
Once a week	110	22
Occasionally	155	31
Total	500	100
Time of eating		
Morning	25	3.8
Afternoon	19	26.4
Evening	324	64.8
Anytime	132	5.0
Total	500	100
Place of eating in pandemic		
Street stall	214	42.8
Home	143	28.6
Both street stall and home	143	28.6
Total	500	100
Choice of street food		
Veg	366	73.2
Non-veg	134	26.8
Total	500	100
Reason for eating street food		
Like to discover new flavor	259	51.8
Available at an affordable price	33	6.6
Due to work or lack of time	121	24.2
Do not like to cook	56	11.2
More than one reasons	31	6.2
Total	500	100

(Table 1)

Out of 500 study participants, 30 percent of respondents were eating street food 3 to 4 times a week. 64.8% of participants were preferring to eat street food during the evening, while 26.4 % were eating street food in the afternoon. Despite the COVID situation, 42.8% of respondents eat street food at street stalls, while 28.6% of participants were preferring to eat at home and street stalls. 73.2% of respondents were interested to eat veg street food. More than 50% of the participants prefer street food because they like to discover new flavors, 24.2% reported consumption of street food due to their work schedule or lack of time whereas 11.2 % of participants reported that they do not like to cook by their own so they used to eat street food. (Table 1)

COVID exposure and vaccination status of respondents

COVID Exposure history	Number	Percentage
Positive	94	18.8
Negative	406	81.2
Vaccination status		
Yes	349	69.8
No	151	30.2
Total vaccinated people	**349**	**100**
Increased street food eating Frequency after vaccination		
No change	171	49
Increased	178	51
Total vaccinated people	**349**	**100**
Hygiene observation at eating place		
Yes	280	56
No	220	44
Total	500	100

Table 2.

Out of 500 respondents, only 18.8 percent of respondents were exposed to COVID earlier. Almost 70% (349) of respondents were vaccinated (187 were vaccinated with single-dose and 162 were fully vaccinated). Out of 349, more than 50% have reported an increased street food consumption after vaccination. 44% of respondents were not careful about hygiene at the time of purchasing street food while the pandemic was all over the world. [Table No.2]

Association of different study variables with the food consumption pattern

Association of different variables with eating frequency of respondents						
Gender	**Every day**	**3 to 4 times**	**Once a week**	**Occasionally**	**Total**	
	n (%)	**n (%)**	**n (%)**	**n (%)**	**N**	p- 0.119
Male	52 (19.6)	83 (31.3)	59 (22.3)	71 (26.8)	265	
Female	33 (14.0)	67 (28.5)	51 (21.7)	84 (35.7)	235	
Age						
18-24	29(14.3)	57(28.1)	57(28.1)	60(29.6)	203	p-0.027
25-30	37(20.2)	65(35.5)	30(16.4)	51(27.9)	183	
>30	19(16.7)	28(24.6)	23(20.2)	44(38.6)	114	
Anthropometry						
Underweight	5(12.2)	10(24.4)	16(39.0)	10(24.4)	41	P- 0.125
Normal	58(17.2)	112(33.2)	68(20.2)	99(29.4)	337	
Overweight	17(16.8)	23(22.8)	23(22.8)	38(37.6)	101	
Obese	5(23.8)	5(23.9)	3(14.3)	8(38.1)	21	

Table 3

Table 3 shows that there is a significant association between age and street food eating frequency in a week ($p<0.05$), while there is no significant association between gender, anthropometry, and street food eating frequency in a week($p>0.05$).

Distribution of respondents based on most loved street food

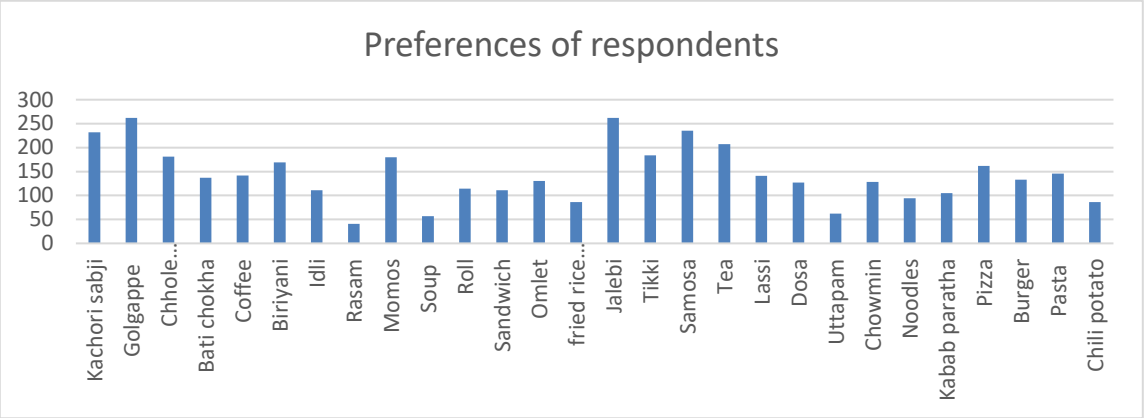

Figure 3

The above graph shows that the most loved Street food of Varanasi among respondents are Golgappe and Jalebi. Samosa and kachori sabji are mostly chosen by the respondents after Golgappe and Jalebi.

Discussion

The result shows that the daily consumption of street food is higher in male participants (19%) than in females (14%), but the p-value is not significant ($p>0.05$), similarly a study conducted by **Prasanna Mitra et al (2018)** found that males have a higher frequency of eating snack foods per day (69.3% males and 57.2% females). The result shows that 64.8 percent of respondents were preferring to eat street food in the evening. **Bhol Alifia et al (2021)** also reported in their study that a significantly higher percentage (50.4%) of participants consumed snacks in the evening time during the lockdown. In the present study, the researchers have assessed the changes in street food consumption after vaccination and found that there is 51% increase in the frequency of eating street after vaccination while a similar study conducted by **Bhol Alifia et al** 2021 compared the eating frequency before and after COVID-19 and found that 50% adults reported a decrease while 31% reported no change in snack consumption. In the present study, 56% of respondents used to observe hygiene at eating places by wearing masks and gloves and maintaining social distancing. A study conducted by **Kuna Aparna and Kata L (2020)** in Andhra Pradesh shows that 69% of people were maintaining hygiene at the time of purchasing food i.e., maintaining social distancing and wearing a mask.

Conclusion

It may be concluded that most respondents choose to eat vegetarian street cuisine at COVID-19. Although few respondents prefer it because of their work schedules, more than half of the respondents say they opt to consume street food during COVID because they enjoy trying different flavors. When compared to individuals who are not immunized, people who have had their vaccinations prefer street food more. The most concerning statistic are that, even in the urgent pandemic situation, nearly half of people fail to maintain proper hygiene at eating establishments.

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