TOPIC: INFLUENCE OF SOCIAL MEDIA ON FOOD CHOICES OF YOUNG ADULTS IN MUMBAI CITY.

[1]Patel Aaliya, [2]Dr. Lakshmi Menon

[1] MSc. Clinical Nutrition and Dietetics (part II), Dr. Bhanuben Mahendra Nanavati, 338, Rafi Ahmed kidwai Road. Matunga Mumbai, College of Home Science, SNDT University Mumbai, Maharashtra, India

[2] Associate Professor, Department of Clinical Nutrition and Dietetics (part II), Dr. Bhanuben Mahendra Nanavati, 338, Rafi Ahmed kidwai Road, Matunga Mumbai, College of Home Science, SNDT University Mumbai, Maharashtra, India

ABSTRACT

INTRODUCTION:

Unhealthy food marketing is a powerful determinant of poor diets and obesity among young people. Food marketers are known to target young people on social media. Although many studies are being done on young peoples' exposure to unhealthy food on social media, no study has yet quantified their exposure on these platforms in India.

AIM:

To understand the influence of social media on choices of food made by young adults in Mumbai city.

METHODS:

This was a cross-sectional study conducted among 161 young adults residing in Mumbai by filling the online questionnaire shared through social media. The data on social media usage and food choices was collected through a self administered questionnaire.

RESULTS:

Spending more time on social media and engaging with food brands advertised online were significantly associated with higher frequency of consumption of unhealthy foods.

CONCLUSION:

Participants who have higher exposure to social media, are more likely to consume unhealthy foods and drinks. The findings highlight the need to include social media in regulations and policies designed to limit young people's exposure to unhealthy food marketing.

Keywords: Spcial media usage, Food choice, HFSS foods, social media influencers, food marketing

INTRODUCTION

The modern era has delivered numerous marvels that have aided our society's growth and prosperity. For many individuals, technology has made everything more accessible and convenient. One of the advantages of technology is the emergence of social media and how it can aid in the promotion of numerous items such as food-related decisions.

Young peoples' vulnerability to social media food marketing may be exacerbated by their specific developmental period. According to Social Norms Theory, social media may take advantage of teenagers' exceptional sensitivity to peer behavior—"likes," for example, constitute social norms that may indicate to adolescents whose social media accounts they should follow (Lakon et al, 2015, Brechwald et al, 2011, Lapinski et al, 2005).

Food advertising and food and beverage companies are rapidly promoting on popular social media platforms among young people (Bragg et al, 2020). Youngsters are exposed to both overt and subtle advertising and promotions, brand messaging, competitions, discounts and bargains, and advergames through such involvement. Reading and commenting on posts, subscribing to material such as 'liking' businesses on Facebook, and 'hashtagging' brands to link the post to other posts about the brand are all examples of engagement with social media brand content (Jackson et al, 2018).

The exposure of young people to social media marketing has been linked to unhealthy and dangerous behaviors such as alcohol drinking (Hoffman et al, 2018). Adolescent views about usage of energy drinks, alcohol, and cigarettes have been demonstrated to be influenced by such online activity (Buchanan et al., 2018). Food marketers have pioneered social media marketing to respond to teens' shifting media habits. Sugary drink companies spent over a billion dollars on Facebook and YouTube advertisements. (Harris et al, 2019).

Increased HFSS food intake across all age groups, but especially among young adults, is a growing public health issue with a global prevalence of over 70% (Rouhani et al, 2012). Rapidly changing dietary practices and an increasingly sedentary lifestyle predispose to obesity-related noncommunicable diseases such as diabetes, neurodegeneration and psychological changes, stroke, headache/precipitation of migraine, the metabolic syndrome, adult-onset diabetes, non-insulin-dependent diabetes, coronary artery diseases, polycystic ovary syndrome, non-alcoholic fatty liver disease, cancers, and autoimmune disorders. Recent studies reveal that obesity-related non communicable illnesses are on the rise in many developing nations, with patterns of pediatric obesity globally and more frequent in developing countries (Gupta et al, 2012, Mohiuddin et al, 2019).

Obesity is recognised as an important public health issue across the world. The high prevalence of overweight and obesity, might be linked to a change in lifestyle, low levels of physical activity, and poor diets. Media and technology (e.g., TV, movies, video games, Internet) are viewed as sedentary activities that displace time for physical exercise and as a result, raise BMI in children and adolescents (Arora et al., 2013; Proctor et al., 2003). It is shown that intake of excessively processed foods is strongly connected with higher BMI and an increased risk of being fat, a vicious circle has been generated between food choice and the consequence of food choice. Overweight and obese people, on the other hand, prefer and choose more energy-dense diet (Dressler et al, 2013). Advertising of energy-dense, nutrient-poor (EDNP) foods and drinks has been related to obesity and overweight, making it a modifiable risk factor for noncommunicable illnesses. Children are disproportionately targeted in the marketing of EDNP foods and beverages. (Cairns et al, 2013).

AIM
To understand the influence of social media on choices of food made by young adults in Mumbai city

METHODOLOGY
This was a Cross-Sectional descriptive Study, where the data was collected from a total of 161 participants, including both males and females. The participants were selected by the random convenience sampling method.

INCLUSION CRITERIA
The inclusion criteria for participation in the study was to be
An Indian adult, both males and females,
Age group of 18 to 28 years old
Residing in Mumbai
Had social media profiles.

EXCLUSION CRITERIA
Individuals with a history of any known medical condition.

A self-administered questionnaire was used in the study. The questionnaire included measures of: (i) demographic characteristics, (ii) Ownership and usage of electronic devices and social media profiles (iii) an adapted food choice questionnaire was used.

Social media use was assessed using four items adapted from (Monique et al, 2019). Sample items include "Which social media app do you use the most?" "How much time do you usually spend on social media app?" "For which reason do you use social media?" "Do you follow any social media influencers on social media?"

Food Choice Questionnaire (FCQ) consisted of 33 items designed to assess the reported importance of several factors: health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity. In this study, the FCQ was adapted. This scale assessed the degree to which the respondents placed importance on factors in making food-related choices with a 4-point Likert-type scale, ranging from '1 = not important' to '4 = very important'.

The data was collected by circulating the google forms online via whatsapp and instagram. Spreadsheet was obtained for Google forms. The data was coded and statistical analysis was performed for analysis.

STATISTICAL ANALYSIS
The data was analyzed using a statistical package for social sciences (SPSS) software (version20). A One-way Analysis of Variance (ANOVA) was used to examine whether food choices are associated with social media usage. The independent variable represented the five different ranges of time spent on social media: 1) 15-30 mins; 2) 1-4 hrs; and 3) 4-6 hrs; 4) 6-8 hrs; 5) 8 hrs or more . An alpha level of 0.05 was used for all analyses. The dependent variable was the food choices of the participants. T Test was used to evaluate any association between social media usage and unhealthy food consumption. Scores were assigned for unhealthy food consumption as "0" for "no" and "1" for "yes". For social media exposure, a 5 point scoring scale was used. "15-30 mins" being "0 points" and "8 hours or more" being "5 points".

RESULTS
The study was conducted with the aim to understand the influence of social media on choices of food made by young adults in Mumbai city, to find out if there is any association between food choices of young adults and social media

1. Socio Demographics characteristics of participants

Descriptive statistics indicate that a total of 161 participants completed the survey between the ages 18-28 years. The average age of the participants was found to be in the range of 22-25 years.

TABLE 1 Socio-demographic profile

	Percentage (N= 161)
Gender	
Male	21.7
Female	78.3
Highest education	
Upto 12th	21.1
Graduate	41.0
Post graduate	28.0
MPhil & PhD	0.6
Other	9.3

Table 1 shows that 21.7% participants were males and the remaining 78.3% were females.

Most of the participants were Graduates and Post Graduates with 41% and 28% respectively.

1. Ownership and usage of electronic devices

Social media use was assessed using four items adapted from (Monique et al, 2019).

TABLE 2 Participants' ownership and usage of electronic devices

Ownership of electronic devices such as tablets, smartphones or laptops	Percentage (n = 161)
Do you own electronic devices such as tablets, smartphones or laptops?	
Yes	98.1%
No	1.2%
No, but uses the family's smartphone, tablet, laptop.	**0.6%**

Table 2 shows almost all the participants (98.1%) had electronic devices, only 1.8% (n= 3) of the participants did not have electronic devices but used family member's.

On a typical weekday, most of the participants (46.6%) spent between 1-4 hours, 19.3% of participants spent 4-6 hours and only 3.7% spent more than 8 hrs on electronic devices per day

Similarly, on a typical weekend, most of the participants (38.5%) spent between 1-4 hrs, 29.8% of the participants spent 4 to 6 hours on electronic devices.

2. Participants' exposure to food marketing

Many participants were exposed to food marketing while using their favourite social media applications.
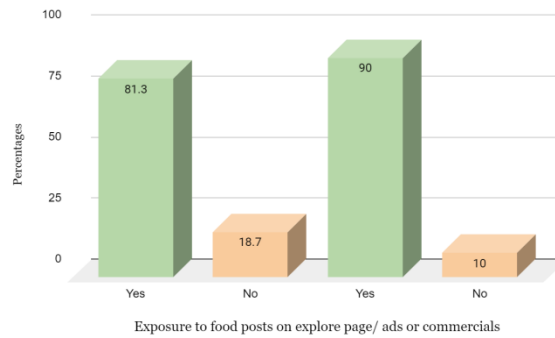

Figure 1 Participants' exposure to food posts on social media.

Fig 3 shows 81.3% of participants came across food posts on social media. It also depicts that 90% of them have also watched commercial/ads for food or drinks on social media.

3. Association between social media and food choices of young adults

When the association between social media usage and food choices was calculated with the help of one-way ANOVA, there was a statistically significant difference between groups. (p = .022).

The null hypothesis (H0) investigates whether there is a significant relationship between social media and food choices of young adults. It specified that there is a significant relationship between social media and food choices of young adults. (p <0.05). Therefore, hypothesis (H0) is rejected.

TABLE 4 Association between social media usage and food choices

Social media usage	Number of subjects	Mean score (± std)	F	P value (<0.05)
15-30 mins	32	100.91 ± 17.21	2.950	.022*
1-4 hrs	88	96.72 ± 21.67		
4-6 hrs	29	100.90 ± 25.21		
6-8 hrs	10	81.30 ± 15.95		
8 hrs or more	2	66.00 ± 14.14		

* Significant at $p < 0.05$.
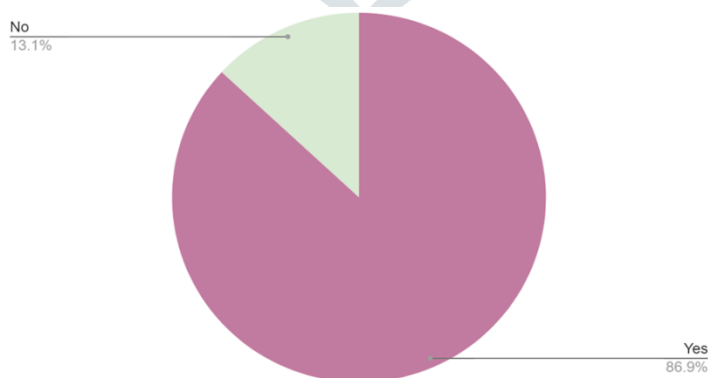
4. Role of influencers on food choices

Figure 2 Social media influencers and participants' engagement with their profile.

TABLE 5 Role of Influencers on food choices

Categories	Percentage (n = 161)
Fashion content	18.7
Food	18.3
Fitness	17.3
Travel	16.3
Recipes	15.7
Music	10.0
Other	3.5
Motivated by social influencers to buy things that they promote on their page	
Sometimes	44.1
Yes	33.5
No	14.9
Rarely	7.5
Individuals reported as having the highest influence on food choices	
Family	30.3
Influencers on social media	26.0
Peers	23.4
Healthcare professionals	12.9
Work colleagues	7.4

It can be seen from fig 2 that 86.9 % of the participants followed social influencers on social media platforms and 18.3 % of participants reported influencers as having a high influence in determining their food choices as they follow them for food posts. 15.7% participants followed them for food recipes and 17.3% participants followed them for fitness content. 33.5 % of participants stated that social influencers motivated them to buy things they promote on their page and 44.1 % said they motivated them sometimes. Family and the influencers on social media were found to be the highest influence with 30.3 % and 26 % respectively.

5. Exposure to social media and unhealthy food consumption

The findings demonstrate that increased social media usage are associated with higher unhealthy food and beverage consumption. The association between purchasing food online and unhealthy food scores could be due to several factors. Youngsters who place online food orders may spend more time online and be exposed to a greater number of advertisements, or be ordering unhealthy takeaway meals for themselves and their families. Online ordering may also be clustered with other unhealthy behaviors such as decreased physical activity and increased screen time.

TABLE 6 Social media usage & unhealthy food consumption

Social media usage	Unhealthy Food consumption	Number of subjects	Mean score	t-value	P- value
Time spent on social media on an average weekday					
15-30 mins 1-4 hrs 4-6 hrs 6-8 hrs 8 hrs or more	No	64	2.94 ± 0.87	-2.530	.012*
	Yes	97	3.28 ± 0.81		
Time spent on social media on an average weekend				-4.436	
15-30 mins 1-4 hrs 4-6 hrs 6-8 hrs 8 hrs or more	No	64	3.28 ± 1.03		.000**

Yes	97	4.00 ± 0.99		

* Significant at $p < 0.05$.

Increased exposure to social media was significantly associated with higher unhealthy food, drink scores ($P < 0.05$).

DISCUSSION

The study was conducted to understand the influence of social media on choices of food made by young adults in Mumbai city. Total 161 participants completed the survey.

Based on analysis conducted, it can be seen that the participants spent more than 1 hour on electronic devices per day. According to the studies of Liu et al (2016) and Wahyuni et al (2019), this type of practice can invoke serious health (physical and mental) issues. Another study found that this form of physical inactivity can cause an energy imbalance, as well as increase the chance of becoming fat or overweight (Rasberry et al, 2011).

Most of the participants are exposed to food marketing and food ads. This is concerning given participants spent more than 1 hour online each day on social media. Each year, companies spend $41.5 billion on social media marketing (Internet Advertising Revenue Report, 2020). The complexity of Instagram advertising may pose a public health concern since young people are more susceptible to the persuasive power of these aesthetically beautiful and engaging commercials.

It was also found that youngsters are exposed to harmful food and beverage marketing on social media, which comes from a variety of sources, including commercials, user generated and influencer generated content. These social media messages are quite likely to have an impact on eating choices and behaviours. Unfortunately, when an influencer is shown with an unhealthy snack, this leads to increased intakes of unhealthy foods and higher overall calorie intakes than when no food is shown (Coates et al., 2019b) In a research with pre-adolescents, exposure to messages from social media influencers featuring branded unhealthy snacks induced pre-adolescents to choose the branded snack over a non-branded option (Qutteina et al., 2019). Thus, food marketing by social media celebrities appears to have an impact on eating choices and habits. When coupled with the absence of comprehensive government regulation, marketing of unhealthy foods on social media platforms represent a high-risk channel for children and adolescents to be exposed to High Fat, Sugar, Salt foods.

Consuming junk food more than 1 time per week is detrimental to health. As recommended by **Indian Academy of Pediatrics** (IAP), consumption of the JUNCS **(Junk foods, Ultra- processed foods, Nutritionally inappropriate foods, Caffeinated/colored/carbonated foods/beverages, and Sugar-sweetened beverages)** foods and beverages by all children and youngsters should be limited and the group suggested to have not more than one serving per week; serving not exceeding 50% of total daily energy intake for that age (Nutrition chapter of Indian Academy of Pediatrics, 2019).

CONCLUSION

It can be concluded that the participants who have higher exposure to social media, are more likely to consume unhealthy foods and drinks. Young people are exposed to harmful food and beverage marketing on social media, which comes from a variety of sources, including commercials, user generated and influencer generated content. More than 60% of participants ordered HFSS foods more than 1 time a week from social media. It was also concluded that social media was associated with food choices of young adults. The findings highlight the need to include social media in regulations and policies designed to limit young people's exposure to unhealthy food marketing.

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