

Effect of Social Media Marketing of Food on Obesity among Youth

Ashraf Iqbal¹, Muhammad Waqas², Qaisar Shehzad³

¹Assistant Professor, Department of Mass Communication, Govt. College University Faisalabad

²MPhil Scholar, Department of Mass Communication, Govt. College University Faisalabad

³Centre for Media and Communication Studies, University of Gujrat, Gujrat.

Correspondence: mwaqas495@gmail.com²

ABSTRACT

Aim of the Study: The study investigates the influence of social media marketing of food on obesity among the youth in Faisalabad. With the proliferation of social media platforms and their widespread use young individuals, concerns about the impact of online food promotions on dietary habits and health have grown.

Methodology: This research employs a mixed-methods approach, including surveys, to delve into the dynamics between social media marketing and obesity. For age group and gender, male and female participants from the 14–18, 19–23, and 24–28 age groups were chosen for the sample in this study. Furthermore, the responder made their choice by using purposive sampling. In the end, 300 people made up the sample size.

Findings: This research work has shed important light on the complex interaction between food marketing on social media and its effects on childhood obesity in Faisalabad. The findings underline the critical role that online platforms play in determining dietary preferences and practices, underscoring the urgent need for focused interventions. According to the study, young people in Faisalabad are exposed to a lot of food-related information on social media, with fatty food commercials being especially enticing.

Conclusion: The study's conclusions have a number of ramifications for those who develop health policies, as well as for marketers, teachers, and digital platforms. While corporations should change their emphasis to promoting healthier options, regulatory measures should be enhanced to limit the promotion of harmful meals to younger audiences. Peer-led health efforts can leverage peer influence for good habit change, and digital media literacy projects can equip kids with the tools to analyze marketing messages critically. Overall, this study adds to our understanding of the complex relationship between teenage obesity and social media marketing. Stakeholders may work together to mitigate the harmful effects of online food marketing and provide a better food environment for the young in Faisalabad by putting the study's suggestions into practice.

Keywords: Marketing, Obesity, Food, Social Media, Habits and Health.

Article History

Received:
December 26, 2023

Revised:
March 03, 2024

Accepted:
March 15, 2024

Published:
March 17, 2024

Introduction

Effect of Social Media Marketing

It is impossible to deny the impact social media marketing has on different facets of our lives. Social media is now a potent tool for promoting goods and influencing consumer behavior in the food business. However, social media marketing for food has an influence that goes beyond simply increasing brand awareness. It influences our preferences, decisions, and even our health. Globally active social media platforms have billions of users, giving food enterprises a large audience (Aishwarya et al., 2020).

Particularly in the food business, influencer marketing has grown to be an important component of social media promotion. Influencers are regarded as reliable sources of knowledge and advice since they frequently have a sizable and devoted following. By promoting particular goods, eateries, or dietary trends, food influencers can affect consumer behavior. According to a poll conducted by Collective Bias, 70% of millennial consumers are swayed by peer recommendations when making decisions about food (Ali et al., 2021).

Social networking has made it simpler than ever to get meals and delivery services. Online ordering platforms and food delivery apps have expanded significantly, offering convenience and quick satisfaction. The National Bureau of Economic Research found that having access to meal delivery apps boosts people's propensity to buy food by 10% to 15% (Ellulu et al., 2014).

The food cravings that young people experience are greatly influenced by social media marketing. Young people's food choices and aspirations are significantly shaped by the pervasiveness of social media platforms and the marketing tactics used by food businesses. Here are some essential details to comprehend the connection between youth food cravings and social media marketing. Food material that is visually appealing is abundant on visual simulation social media platforms like Instagram, YouTube, and Facebook (Hill, 2006).

According to Qutteina et al., (2019), food firms take advantage of this by producing visually arresting pictures that stand out and encourage consumers to pause and pay notice. Visuals that generate strong emotions and connections have a significant impact on human emotions. Food photography that features mouthwatering entrees, irresistible desserts, or artfully arranged food can arouse pleasurable emotions like desire, anticipation, and pleasure. Social media marketing establishes a bond between the viewer and the food being advertised by evoking these feelings (Truman, & Elliott, 2019).

The art of food styling influences marketing campaigns by improving the visual attractiveness of food. Professional food stylists painstakingly plate the plates, arrange the components, and use garnishing, lighting, and other techniques to produce spectacular visuals. Food stylists enhance the aesthetic appeal of food by carefully arranging textures, colors, and props to make it more aesthetically pleasing (Bragg et al., 2020).

Food corporations have discovered a potent method to contact and sway the younger generation through social media in the current digital era. These businesses have taken use of the ability to target youngsters with their marketing tactics and influence their food preferences thanks to the extensive usage of platforms like Instagram, Facebook, YouTube, and TikTok (Smit, et al., 2020).

Food businesses also leverage the capabilities of social media algorithms to target young consumers with relevant adverts. Businesses can adapt their advertisements to the unique interests and preferences of their target audience by gathering information on users' browsing patterns, preferences, and demographics. Young people are more likely to interact with these advertisements thanks to this hyper-targeted strategy, which boosts sales and brand awareness. It is difficult for young people to resist the appeal of fast food, sugary snacks, and other less nutrient-dense options due to the constant barrage of targeted marketing (Abbas et al., 2019).

Effect of Food on Health of Youngsters Obesity

The prevalence of obesity among young people has alarmingly increased, and it has emerged as a major public health concern worldwide. Youth obesity has many different causes and effects that are complicated and multifaceted. These causes and effects include dietary preferences, food accessibility, marketing strategies, and social standards. For the purpose of addressing and preventing youth obesity, it is imperative to comprehend these implications. Consuming foods that are high in calories but low in nutrients is one of the main causes of obesity in young people (Mayasari et al., 2020).

Young people are exposed to a diet heavy in calories, bad fats, added sugars, and sodium as a result of the growth of fast food restaurants, processed snacks, and sugary beverages. These meals frequently have a strong marketing presence, are reasonably priced, and appeal to younger consumers. In addition to causing weight gain, eating too much of these foods also contributes to poor nutrition and the emergence of chronic illnesses such as type 2 diabetes, cardiovascular disease, and specific types of cancer (Hawkins et al., 2020).

Additionally, the impact of food marketing on young people has a big impact on how they eat and contributes to obesity. Through sponsorships, online promos, social media campaigns, and broadcast commercials, food corporations actively target young consumers. Because of the frequent promotion of highly processed foods, sugary cereals, snacks, and fast food options, these products are frequently associated with joy, enjoyment, and social acceptance (Fleming-Milici & Harris, 2020).

Young people are more likely to consume unhealthy foods as a result of their continual exposure to these persuasive messages, making it difficult for them to build and maintain a balanced diet. The physical environment and food accessibility both significantly contribute to the epidemic of childhood obesity. There aren't always economical, wholesome food options available, especially in low-income neighborhoods. Fast food establishments and convenience stores are more prevalent than grocery stores and farmers' markets, which increases access to and affordability of unhealthy food options (Adams et al., 2020).

The result of this food environment is what is known as a "food desert," where residents have little access to good food options and must rely on bad substitutes. The higher prevalence of obesity in these communities is mostly due to the dearth of nutrient-dense food options and the profusion of harmful ones. In addition, cultural standards and societal norms may have an impact on young people's eating patterns and lead to obesity.

According to Khandpur et al., (2020), big portion sizes, frequent intake of high-calorie foods, and the importance placed on finishing one's plate are common in several cultures. Young people may struggle to detect and react to their body's normal hunger and fullness cues as a result of these norms, which might encourage overeating. Young people's eating habits and behaviors are also greatly influenced by family dynamics and parental influence. Convenience and cost-effectiveness are prioritized by parents or other caretakers over nutrition, which encourages bad eating habits and raises the risk of obesity (Murphy et al., 2020).

Obesity is largely influenced by the food environment in which young people live and make their dietary decisions. Limited inexpensive, fresh, and nutrient-dense food options are available in many localities, especially in low-income areas. In places with little availability to nutritious food options, such as youth, residents are often forced to resort on inexpensive, processed, and calorie-dense foods. Fast food outlets and convenience stores frequently outnumber grocery stores and farmers' markets, creating what are called as "food deserts." The higher prevalence of obesity in these communities is a result of the scarcity of nutrient-dense alternatives and the proliferation of unhealthy options (Sanny et al., 2020).

Research Objectives

1. To examine the extent of exposure to social media food marketing on youth.
2. To analyze the correlation between social media-induced food preferences and obesity prevalence.

Hypotheses

- Increased exposure to food-related content on social media positively correlates with higher instances of obesity on youth.
- Social and cultural factors moderate the relationship between social media food marketing and youth obesity for residents of Faisalabad.

Literature Review

In the present era, social media marketing has become a potent instrument that has revolutionized how companies engage with their target market. While it has shown to be effective in many different ways, there are also possible hazards and difficulties, especially when it comes to treating problems like youth obesity. Millions of kids and teenagers around the world are affected by the obesity epidemic that has spread across the globe. Young people's lifestyles and habits have been significantly influenced by the rise of social media, making it a crucial platform for addressing the problem (Jia, 2021).

However, given the possible drawbacks and ethical issues involved, social media marketing for obesity and youth must be approached with caution. The use of social media platforms has ingrained itself into young peoples' daily life. They interact with peers, engage with material, and scroll through their news feeds for hours on end (Oberle et al., 2019).

Social media marketing has a chance to promote healthy lifestyles and increase awareness of obesity thanks to this pervasive use. The power of social media can be used in a number of ways to address this issue. One strategy is to collaborate with influencers that have a sizable following among young people and are skilled at spreading information on a healthy diet, regular exercise, and self-acceptance. Brands and organizations can use influential people's influence and reach to spread uplifting and educating material by working with them (Michels, 2019).

The creation of interesting and educational information that appeals to young people is another successful tactic. They can be engaged and informed about the value of keeping a healthy weight through brief movies, infographics, and interactive postings. The use of social media platforms' distinctive characteristics, such as live streaming and interactive polling, can be used to entice audience engagement and advance conversations about issues related to obesity. Building trust and developing a feeling of community with the target audience can aid in motivating behavior change (Wu et al., 2019).

However, it's crucial to take into account any potential drawbacks of social media marketing, particularly in light of obesity and young. Social media's pervasiveness can lead to concerns with body image and unattainable beauty standards, which can make the obesity problem worse. Constant exposure to carefully selected and edited photographs might cause unhealthy comparisons and distort one's perspective of their own bodies

Theatrical Framework

Through media content and the use of a communication structure, the uneven and unbalanced information flow between developed and developing nations has promoted and exported an imperialist culture (Millar, Mueller, & Carter, 2023).

Social media marketing is the most influential source for disseminating information about new food varieties through various mobile apps and websites, but on a larger scale, that type of marketing or

information also influences young people's eating patterns and contributes to obesity. When creating their culinary content, food blog or vlog producers constantly want to project a positive image since they want their work to have an impact on the psyche of viewers.

It is highly likely that when viewers see both the positive and negative sides of something, it will not fit into their lifestyles. Therefore, social media marketing is solely intended to have a beneficial influence on viewers' lifestyles, particularly their food choices and eating habits.

Research Methodology

Research design is the preliminary planning that aids the researcher in data collection and data analysis for any research project (Pasek, 2021). The foundation for evaluating the gathered data is statistical and descriptive analysis.

Population

The population being studied may consist of live or non-living entities. Only 300 residents of Faisalabad were chosen as a sample for the study despite the researcher's desire to collect data and materials from a much larger group of people. The population is divided by gender, age group, educational attainment, and geographic location. In this study, 150 males and 150 females from the city of Faisalabad were chosen from age categories by various individuals.

Sample

According to Patton, Wilson, Metrow, Ellison, Torrey, Brown & Woo (2020), the research aims to gather data from a representative sample of 300 respondents selected from within this youth population. By focusing on this specific demographic in Faisalabad, the study seeks to uncover the extent to which social media marketing affects their dietary habits and, in turn, contributes to obesity rates. This selected sample size allows for a comprehensive exploration of the topic while ensuring practicality and feasibility in data collection and analysis.

Resources and Time Management

It's crucial to maintain high research standards and openness despite resource constraints and scheduling difficulties. Access to reliable sources and cutting-edge approaches is ensured by enough financing. Thorough data verification is not affected by time restrictions. Maintaining the integrity of the study requires careful balancing of these factors.

Sampling Strategy

For age group and gender, male and female participants from the 14–18, 19–23, and 24–28 age groups were chosen for the sample in this study. Furthermore, the responder made their choice by using purposive sampling. In the end, 300 people made up the sample size.

Sample Size

The sample size shouldn't be too big, making the study difficult, nor should it be too small, making the results difficult to generalize. As a result, the sample size was typical. In this study, a 300-person sample size from Faisalabad was chosen, with a balanced number of men and women.

Framing the Questions

According to Viau, Steede, and Cannon (2021), the researcher gives respondents a list of questions to choose from while answering closed-ended questions. In the questionnaire, the respondent's gender (male and female), location (Faisalabad city), level of education (up to matriculation and above matriculation), and age (14–18 years, 19–23 years, and 24–28 years) were the first questions asked.

Data Collection

The researcher must employ a variety of methods and equipment to gather information on various topics. The approaches and tools for acquiring data include the analysis of questionnaires, interviews, observations, personal papers, timetables, etc. For this study project, data are gathered from respondents in Faisalabad through the right delivery of a questionnaire, an interview, and personal observation. The dependent and independent variables of the study questions and hypothesis are evaluated using the questionnaire.

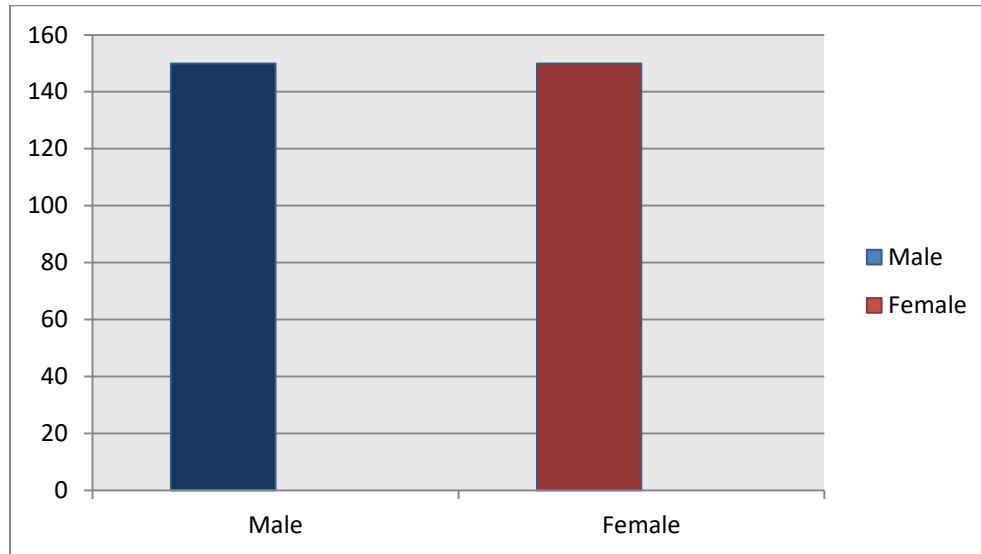
Results and Findings

Table 1: *How this theory is relating to different variables and study.*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	14-18	100	33.3	33.3	33.3
	19-23	100	33.3	33.3	66.7
	24-28	100	33.3	33.3	100.0
	Total	300	100.0	100.0	

Table 1 shows this survey conduct from these are 300 respondents. Respondents are equally divided in different categories of age groups to conduct this research. Researcher divided respondents in three different categories which fall in young generations (Ahmad, 2018).

Figure 1: *Gender*



Researcher conducted this survey from both male and female genders. This conducted survey from 150 males and 150 from females. This division between male and female proportion is based on statistics of Faisalabad district provided by “Pakistan Bureau of Statistics” census of 2017 district wise.

Table 2: *Watching Social media Daily.*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	02 hours	143	47.7	47.7	47.7
	04 Hours	47	15.7	15.7	63.3
	06 hours	16	5.3	5.3	68.7
	More than above	9	3.0	3.0	71.7
	Others	85	28.3	28.3	100.0
	Total	300	100.0	100.0	

The information in Table 2 provides details about how frequently the respondents to the study used social media. The frequency distribution of how much time people spend using social media sites is shown in the table. Notably, 47.7% of respondents said they used social media on a daily basis for about two hours. 15.7% of respondents, a lower percentage, reported utilizing social media for about 4 hours every day. Only 5.3% of participants said they spent 6 hours a day engaging on social media. It's interesting to note that a little 3.0% said they spent even more time than the groups described above. It is clear from the total percentages that up to 71.7% of respondents engage in social media usage on a daily basis, albeit to varied degrees. The remaining 28.3% are included in the "Others" category, which suggests that they may use social media during times not specified by the selections. This table, which was created using data from 300 participants, illustrates the pervasiveness of everyday social media usage while providing an analytical breakdown of the time distribution, helping us to understand modern digital habits better.

Table 3: *Content do you like to watch on social media.*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Food	82	27.3	27.3	27.3
	Cultural	56	18.7	18.7	46.0
	Historical	38	12.7	12.7	58.7
	Others	124	41.3	41.3	100.0
	Total	300	100.0	100.0	

The content preferences of users on social media platforms are detailed in Table 3. The content or programs that respondents say they enjoy are categorized in the table. The study respondents' preference for food content was revealed by 27.3% of them, indicating a large desire in going back in time via digital media. 18.7% of participants preferred cultural content, demonstrating a preference for material that honors customs, the arts, and diverse heritage. 12.7% of respondents indicated a preference for nature-focused programming, making historical content a popular choice. According to the total percentages, 58.7% of the participants favor content that fits within these categories. The remaining 41.3% come under the "Others" category, demonstrating that there are many different types of content preferences besides those stated. This table, which was created, using data from a sample of 300 participants, provides insightful information on the kinds of content that resonate with social media users and reveals their preferences in terms of culture, history, and ecology. The ability to customize their products to the audience's shifting tastes and interests is crucial for content producers and digital platforms.

Table 4: *Spend on watching food videos in a week.*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 Hours	103	34.3	34.3	34.3
	4 Hours	27	9.0	9.0	43.3
	6 Hours	25	8.3	8.3	51.7
	8 Hours	15	5.0	5.0	56.7
	Others	129	43.0	43.0	99.7
	6.00	1	.3	.3	100.0
	Total	300	100.0	100.0	

Interesting insights regarding people's social media viewing patterns for food-related videos are provided in Table 4 for any given week. The data suggests that 34.3% of the participants view these videos for an average of 2 hours per week, demonstrating a strong interest in food-related topics. The appeal of lengthier engagement with food videos is underscored by the 9.0% of responders who commit 4 hours per week. Similar to this, 8.3% of participants said they spent 6 hours per week on food-related activities, demonstrating a strong interest in learning about a variety of food-related topics. Following the trend, 5.0% of respondents devote 8 hours per week to watching food-related films, indicating a higher degree of interest. The results as a whole show that up to 56.7% of the participants view culinary videos, demonstrating the popularity of this genre. The remaining 43.0% fall under the category "Others," which

denotes a variety of viewing preferences. This data, collected from 300 participants, highlights the varied time commitments people are ready to make to gratify their passion for and curiosity about food, illuminating the crucial role that food-related content plays in social media engagement.

Conclusion

High Exposure to Food-Related Social Media Content

The research survey's key finding is that young people in Faisalabad are frequently exposed to food-related content on social media sites. The vast majority of participants said they spent a lot of time on social media sites where food advertisements are common, like Facebook, Instagram, and TikTok. This extensive exposure highlights the pervasiveness of social media marketing and its potential influence on young people's food preferences.

Attraction of Rich Food Advertisements

According to the study, young people are especially tempted to extravagant and harmful food marketing on social media. Fast food, sweet drinks, and snack images are frequently used in these advertising. According to the participants' comments, these types of content are very engaging and enticing because of the alluring images, memorable slogans, and promotional incentives. This highlights a worrying trend where appealing marketing tactics for harmful meals may help to increase young consumption of these products.

Influence on Eating Patterns

The survey's findings suggest that social media food marketing has a noticeable impact on young people's eating habits. Several times a week, a sizable percentage of respondents acknowledged to consuming fast food, sugary snacks, and sugary beverages. This consumption pattern is consistent with the food categories that are commonly promoted on social media. The results strongly suggests that teenage decision-making is influenced by exposure to such marketing, leading them to choose unhealthy food options.

Perceptions of Obesity and Healthy Eating

It's interesting that the study reveals a conflicting view of healthy eating among young people. While many participants recognized the value of making healthy eating choices, a sizable portion said they sometimes treat themselves to decadent foods for fulfillment. For health programs looking to encourage improved eating patterns, this paradoxical thinking presents a problem. In addition, the study discovered a link between a surveyed youth's exposure to food commercials and their likelihood of being obese.

Peer Interaction's Function

The contribution of peer relationships to enhancing the impact of social media food marketing is another interesting discovery. Focus groups found that recommendations and conversations among friends about certain foods that are the subject of commercials frequently result in shared consumption experiences. The preferences engendered by internet food promotions are reinforced in part by this social impact. The participants discussed times when they had tried new foods based on peer recommendations, demonstrating how social media and in-person interactions are intertwined.

Recommendations and Implications

The main conclusions of this study have important ramifications for marketers, educators, and legislators in the field of health. The information highlights the need for stricter rules regarding the nature and audience of food marketing on social media sites, particularly those that target young people. Health ads can also address the paradoxical belief that decadent foods should be rewarded while highlighting the negative effects such dietary choices have on long-term health.

Health educators should create focused interventions to increase knowledge of how social media marketing affects eating practices and obesity. To foster good peer impact in promoting healthy food choices among kids, peer education programs may be designed. Health campaigns can also help young people develop their media literacy abilities so they can analyze and understand the persuasive strategies used by food advertisers.

This study sheds light on the complex interaction between food marketing on social media and its effects on youth obesity in Faisalabad. The findings urge regulators, educators, and marketers to work together to ensure that social media platforms are utilized responsibly to promote healthy eating habits and lessen the negative impacts of too much exposure to marketing for unhealthy foods.

Increasing Regulatory Standards

Given the substantial influence of social media marketing on young people's eating habits, regulatory organizations and social media platforms should work together to impose stronger rules for food commercials. The advertising of harmful foods to younger audiences should be prohibited under these rules, especially while usage is at its highest. Regulators can help youngsters develop healthier eating preferences by limiting exposure to tempting but unhealthy food content.

Acknowledgements

None


Conflict of Interest


Authors declared NO conflict of interest.

Funding Source

The authors received NO funding to conduct this study.

ORCID iDs

Ashraf Iqbal ¹  <https://orcid.org/0009-0007-8549-8045>

Muhammad Waqas ²  <https://orcid.org/0009-0000-4881-7974>

Qaisar Shehzad ³  <https://orcid.org/0009-0006-7896-8996>

References

- Abbas, J., Aman, J., Nurunnabi, M., & Bano, S. (2019). The impact of social media on learning behavior for sustainable education: Evidence of students from selected universities in Pakistan. *Sustainability*, *11*(6), 1683.
- Adams, E. L., Caccavale, L. J., Smith, D., & Bean, M. K. (2020). Food insecurity, the home food environment, and parent feeding practices in the era of COVID-19. *Obesity*, *28*(11), 2056-2063.
- Aishwarya Reddy, B., Mohanraj, K. G., & Nivethigaa, B. (2020). Impact of fast food on depression in the adolescent population. *European Journal of Molecular and Clinical Medicine*, *7*(1), 532–539.
- Bragg, M. A., Pageot, Y. K., Amico, A., Miller, A. N., Gasbarre, A., Rummo, P. E., & Elbel, B. (2020). Fast food, beverage, and snack brands on social media in the United States: An examination of marketing techniques utilized in 2000 brand posts. *Pediatric obesity*, *15*(5), e12606.
- Elliott, C., & Truman, E. (2019). Measuring the power of food marketing to children: a review of recent literature. *Current nutrition reports*, *8*, 323-332.

- Hill, J. O. (2006). Understanding and addressing the epidemic of obesity: An energy balance perspective. *Endocrine Reviews*, 27(7), 750–761. <https://doi.org/10.1210/er.2006-0032>
- Khan, A.W., Safdar, G., Ashraf, M. (2018). Effects of Mobile Phone Usage on Social Behaviours of University Students: A Case study of Islamia University of Bahawalpur, Pakistan. *Global Media Journal Pakistan Edition*, 11(1), 1-26.
- Li, C., Chen, L. J., Chen, X., Zhang, M., Pang, C. P., & Chen, H. (2020). Retrospective analysis of the possibility of predicting the COVID-19 outbreak from Internet searches and social media data, China, 2020. *Eurosurveillance*, 25(10), 2000199.
- Mayasari, N. R., Ho, D. K. N., Lundy, D. J., Skalny, A. V., Tinkov, A. A., Teng, I. C., ... & Chang, J. S. (2020). Impacts of the COVID-19 pandemic on food security and diet-related lifestyle behaviors: An analytical study of google trends-based query volumes. *Nutrients*, 12(10), 3103.
- Michels, N. (2019). Biological underpinnings from psychosocial stress towards appetite and obesity during youth: research implications towards metagenomics, epigenomics and metabolomics. *Nutrition research reviews*, 32(2), 282-293.
- Millar, J., Mueller, F., & Carter, C. (2023). Grassroots accountability: the practical and symbolic aspects of performance. *Accounting, Auditing & Accountability Journal*.
- Oberle, M. M., Romero Willson, S., Gross, A. C., Kelly, A. S., & Fox, C. K. (2019). Relationships among child eating behaviors and household food insecurity in youth with obesity. *Childhood Obesity*, 15(5), 298-305.
- Pasek, A. (2021). SCIENTIFIC OPINION TECHNIQUE. CASE ANALYSIS. *Наука и мир*, (7), 64-71.
- Patton, G. C., Neufeld, L. M., Dogra, S., Frongillo, E. A., Hargreaves, D., He, S., ... & Norris, S. A. (2022). Nourishing our future: The Lancet Series on adolescent nutrition. *The Lancet*, 399(10320), 123-125.
- Qutteina, Y., Hallez, L., Mennes, N., De Backer, C., & Smits, T. (2019). What do adolescents see on social media? A diary study of food marketing images on social media. *Frontiers in psychology*, 10, 2637.
- Shabir, G., Hameed, Y.M.Y., Safdar, G., Gilani, S.M.F.S. (2014). Impact of Social Media on Youth: A Case Study of Bahawalpur City. *Asian Journal of Social Sciences and Humanities*, 3(4), 132-151.
- Shabir, G., Iqbal, Y.W., Safdar, G. (2014). Demographics“ Differences in Social Networking Sites Use: What Communication Motives Does it Gratify? *International Journal of Social Work and Human Service Practice*, 2(5), 184-194.
- Syed, U.E., Safdar, G., Khan, A. (2023). Relationship between Social Anxiety, Social Comparison and Competitive Behavior among Social Media Users. *Online Media and Society*, 4(2), 101-108.
- Wu, A. J., Aris, I. M., Hivert, M. F., Rocchio, C., Cocoros, N. M., Klompas, M., & Taveras, E. M. (2022). Association of changes in obesity prevalence with the COVID-19 pandemic in youth in Massachusetts. *JAMA pediatrics*, 176(2), 198-201.
- Wu, C. H., Lin, C. Y., Hsieh, Y. P., Strong, C., Meshki, C., Lin, Y. C., & Tsai, M. C. (2019). Dietary behaviors mediate the association between food insecurity and obesity among socioeconomically disadvantaged youth. *Appetite*, 132, 275-281.
- Wu, J. (2022). Effects of Physical Exercise on Physical Fitness and Mental Health of Obese Students. *Journal of Environmental and Public Health*, 2022. <https://doi.org/10.1155/2022/2347205>