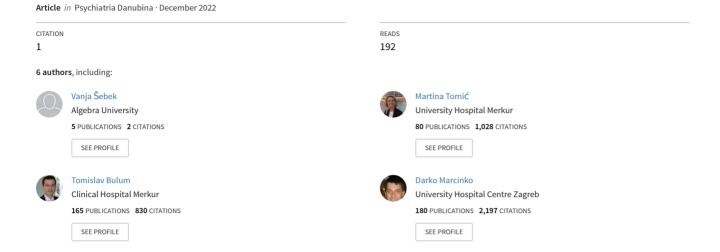
Analysis of Influencer Marketing in the Positioning Healthy Eating According to Generation Z in Croatia



ANALYSIS OF INFLUENCER MARKETING IN THE POSITIONING HEALTHY EATING ACCORDING TO GENERATION Z IN CROATIA

Mihael Jandroković¹, Vanja Šebek¹, Martina Tomić², Tomislav Bulum^{2,3}, Darko Marčinko^{3,4} & Sonja Jandroković^{3,4}

¹ University College Algebra, Zagreb, Croatia
² Vuk Vrhovac University Clinic for Diabetes, Endocrinology and Metabolic Diseases, Merkur University Hospital,
Zagreb, Croatia
³ School of Medicine, University of Zagreb, Zagreb, Croatia
⁴ Zagreb University Hospital Center, Zagreb, Croatia

received: 19.4.2022; revised: 6.7.2022; accepted: 28.7.2022

SUMMARY

Background: The eating habits of Generation Z have changed a lot compared to other Generations. It is presumed that influencers significantly influence the choice of diet among Generation Z. This study aimed to investigate Generation Z's opinion about social networks and the influence of communication channels, mostly influencers, on the choice of diet.

Subjects and Methods: This study included 178 participants born between 1997-2010. It was conducted using the Google forms questionnaire program. Participants were initially asked demographic questions such as age, gender, and physical activity. These were followed by questions about their eating habits, social networks, and influencers. After the survey, the results were analyzed using TIBCO StatisticaTM 14.0.0.

Results: Out of 178 participants, 59% were female, and 41% were male. Most respondents (60.6%) declared that they eat healthily, and among several options to choose from, most respondents chose options related to a healthy diet. Respondents who care about healthy food often seek information from influencers on social networks. Respondents who declared that they eat healthy most often believe that influencers are a credible source of information (p=0.019) and follow influencers for motivation (p=0.022) and for the information they share (p=0.009). Respondents who declared that they pay attention to calorie intake more often believe that influencers are a credible source of information (p=0.011).

Conclusion: The results of this study suggest that influencers greatly influence the eating habits of Generation Z and that they are aware of healthy eating habits. Also, those who take care of healthy eating, follow influencers.

Keywords: Influencer, Generation Z, Eating habits, Healthy eating

INTRODUCTION

Modern eating habits have changed a lot recently. The contemporary way of life has a significant effect on eating habits nowadays. An unhealthy diet is associated with the obesity pandemic in the general population, which causes health disorders, while on the other hand, there is an increase in significant eating disorders and diseases such as anorexia and bulimia (Galmiche et al. 2019). In addition to the increase in the prevalence and incidence of diseases related to nutrition, there is also an increase in different ways of eating. A survey conducted in the USA showed that about 11% to 12% of respondents are vegetarian or vegan, which is not much different from Generation Y (1981-1996), but it

is different from Generation X (1965-1980) (Betz 2019). These indicate a change in the eating habits of younger generations. Some of the eating habits were developed directly by members of Generation Z (1997-2010), while some were developed indirectly by influences from the environment, such as family and friends, but also by influencers (Croatian influencers) that are followed on social networks and the media (Kaylor et al. 2022). Influencer marketing is an extremely high-quality tool for communication with customers. The company's communication is usually one-way, and respondents do not feel unique and comfortable communicating with the company. On the other hand, influencers give the possibility of a feeling of two-way communication (De Jans et al. 2021). An influencer is someone who influences the people around

him, such as his followers (Garcia-Dia 2020). One of the essential tasks of influencers is to encourage their followers or viewers to do something, to be inspired by the influencer's actions, and to create a desire in the user to do something more. Due to the development of social networks, we can see an increasing number of influencers on different topics on different social networks, such as Facebook or Instagram. For this reason, there is a noticeable difference in the interaction between advertisers and customers. There are many ways we can share influences. One of the more straightforward ways is by the number of followers on social networks such as Facebook and Instagram. According to the number of followers, influencers are divided into four types: nano, micro, macro, and mega (Campbell & Farrell 2020). Mega influencers are influencers who are followed by 1 million followers or more on social networks. Nowadays, this type of influencer is considered a celebrity, and due to the number of their followers, they can be placed in a similar position as celebrity influencers, and they have a strong influence on human thinking and behavior, shopping habits, and eating habits (Audrezet & Charry 2019, Boerman 2020, Breves et al. 2019, de Veirman et al. 2019, de Veirman & Hudders 2020, Vrontis et al. 2021). When the users find that an influencer is friendly and honest with their followers, the chance that they will be attracted to his content increases. The influencer will be able to influence such an audience in the field of his expertise; for example, a food influencer can influence the eating habits of his followers due to his expertise and trust (Kucharczuk et al. 2022, Jin & Ryu 2021). The eating habits of Generation Z have changed a lot compared to other generations. The research hypothesis is that Generation Z knows the importance of a healthy diet. This study aimed to identify the eating habits of Generation Z, what the users think about their diet, whether they are on any of the nutrition programs, which foods they like the most, and which foods they consume the most. The authors also investigated their opinion about social networks and the influence of communication channels, mostly influencers, on the choice of diet.

SUBJECTS AND METHODS

This study included 178 participants born between 1997-2010 (Generation Z). It was conducted using the Google Forms questionnaire program. Google Forms is a free application, which is a part of the Google Drive Application (Duino 2017). Google Drive allows users to create and share questionnaires, create and plan events, and an overall way of collecting data. The application allows users to select a template to create the questionnaire, or also allows the users to create their own template. The users can select the type of questions

they would like to add to their questionnaire, like multiple choice, short answer, check boxes, and scales. The creator can share their questionnaire with others by Email, Facebook, Twitter, and other social media outlets. The results of the questionnaire are sent to the creator for further analysis. In this study participants were initially asked demographic questions such as age, gender, and physical activity. These were followed by the second part in which they were asked about their eating habits. The third part contained the questions about social networks and influencers. The questions were adapted to Generation Z as a target group of this research. After the survey, the results were expressed as numbers (percentages) and statistically analyzed using StatisticaTM 14.0.0. TIBCO The Kendall's correlation test was used to evaluate the direction and strength of associations. In all analyses, a p-value < 0.05 was considered statistically significant.

RESULTS

Of 178 participants, 105 (59%) were females, and 73 (41%) were males. The most common age group that participated in the study was those from 18 to 21 years old, which made up 50% of all respondents. The age group of 22 to 24 years accounted for 34.8%, while the group of 25 and 26 years accounted for 15.2% of participants. Most of them (75.8%) attended completed college or university. About 50% participants regularly played sports or other forms of physical activity and regularly went to the gym. 60% of the respondents declared that they eat healthily but did not take care of their calorie intake. About 50% of the respondents went to the store to buy food at least once a week, and 6.7% declared that they never went to the store for this reason. 53.4% of respondents declared that they cook at least once a week, and only 8.4% declared that they do not cook by themself. The respondents mostly consumed meat, vegetables, and dairy products, food that is more compatible with a healthier lifestyle and allows the intake of the recommended amount of vitamins and minerals.Respondents who declared themselves to be physically active eat healthily (τ = 0.171, p < 0.001), take care of the calorie intake in their food ($\tau = 0.135$, p = 0.007), often cook ($\tau = 0.139$, p = 0.006) and shop ($\tau = 0.110$, p = 0.029) the food by themself. They also stated that it is important for them that the food is low calories ($\tau = 0.155$, p = 0.002) but it is not important that the food is tasty ($\tau = -0.118$, p = 0.019). Also, physically active participants declared that the most important meal of the day for them is breakfast $(\tau = -0.144, p = 0.004)$ and that they rarely buy street food ($\tau = -0.182$, p < 0.001). For those who lived in smaller towns and cities, the most important thing about the food was that it was healthy ($\tau = -0.139$, p = 0.006), while those who lived in cities with a larger population

often consumed street food such as bakeries or fast food $(\tau = 0.150, p = 0.003)$. Those attending college or university liked to eat tasty food ($\tau = 0.165$, p = 0.001), and often consumed food in a canteen or restaurant (τ = 0.193, p < 0.001) (Table 1). Female participants used social networks more ($\tau = 0.194$, p < 0.001), knew very well what influencers are ($\tau = 0.156$, p = 0.002), and followed them on social networks ($\tau = 0.325$, p < 0.001). Also, younger members of Generation Z (τ = -0.140, p = 0.005), with a lower level of education (τ = -0.140, p = 0.005), followed influencers on social networks more often. Similarly, residents of larger cities considered influencers to be a credible source of information significantly more often ($\tau = 0.105$, p = 0.042) and followed them on social networks ($\tau =$ 0.200, p < 0.001), most often for leisure ($\tau = 0.122$, p = 0.015). Furthermore, respondents who were not physically active, most often followed influencers because of motivation ($\tau = -0.106$, p = 0.034) and the content they publish ($\tau = -0.104$, p = 0.039) (Table 2). Older respondents were mostly informed about healthy eating through magazines and newspapers ($\tau = 0.225$, p < 0.001) and blogs ($\tau = 0.101$, p = 0.045). On the other

hand, younger respondents were informed about healthy eating through social networks ($\tau = -0.111$, p = 0.027). Furthermore, female respondents were informed about healthy eating through blogs ($\tau = 0.122$, p = 0.015), social networks ($\tau = 0.225$, p < 0.001) and influencers ($\tau = 0.131$, p = 0.009) and followed influencers who made announcements about food (τ = 0.254, p < 0.001). Also, female respondents desired to consume healthy food when they saw that the influencer consumed healthy food ($\tau = 0.233$, p < 0.001). Likewise, when an influencer consumed a product, they became more aware of it ($\tau = 0.106$, p = 0.035) and desired to buy it ($\tau = 0.148$, p = 0.003). Respondents who were not physically active were more often informed about healthy eating through influencers $(\tau = -0.112, p = 0.026)$ and increased their desire to consume healthy food when they saw an influencer consuming healthy food (τ = -0.152, p = 0.002). Those on college or university got information about healthy eating through blogs ($\tau = 0.218$, p < 0.001), magazines and newspapers ($\tau = 0.154$, p = 0.002).

Table 1: Correlations of demographic characteristics, food attitudes, and eating habits.

	Age	Gender	Level of education	Sport or physical activity	City size by population
I eat healthily.	-0.045	0.032	0.061	0.171*	-0.085
I take care of the calorie intake.	0.097	-0.094	-0.026	0.135*	-0.087
I often buy food by myself.	0.165*	-0.105*	0.026	0.110*	-0.026
I often cook by myself.	0.090	0.070	0.011	0.139*	-0.055
It is important to me that food is tasty	70.025	0.109*	0.165*	-0.118*	-0.092
It is important to me that food is healthy.	-0.050	0.112*	0.099	0.067	-0.139*
It is important to me that food is low calorie.	-0.032	0.138*	0.039	0.155*	0.015
It is important to me that food looks attractive.	-0.015	0.091	0.038	-0.047	-0.015
I prepare my food at home and take it to work/university.	-0.004	0.148*	-0.031	0.008	-0.043
I eat in the canteen or restaurant.	-0.012	0.068	0.193*	-0.052	-0.015
I buy food in the store.	-0.002	-0.055	0.045	0.056	-0.044
I buy street food (bakery, fast food).	-0.047	-0.001	0.034	-0.182*	0.150*
The most important meal of the day f me is breakfast/lunch/dinner.	or _{0.058}	-0.065	0.041	-0.144*	-0.065

^{*} p < 0.05 Kendall Tau correlation test

Table 2: Correlations of demographic characteristics and attitudes about social networks and influencers.

	Age	Gen der	Level of education	Sport or physical activity	City size by population
I use social networks.	0.014	0.194*	0.028	-0.087	0.071
I know what influencers are.	0.018	0.156*	0.079	-0.004	-0.053
I consider the influencers a credible source of information. I follow influencers on social networks.	-0.045	0.031	-0.055	-0.042	0.105*
	-0.140*	0.325*	-0.140*	-0.012	0.200*
I follow influencers because of motivations.	-0.002	0.024	-0.089	-0.106*	0.030
I follow influencers because of inspirations.	0.039	0.212*	-0.027	-0.057	0.056
I follow influencers because of pastimes.	0.043	0.260*	-0.018	-0.067	0.122*
I follow influencers because of the content they publish.	-0.079	0.161*	-0.030	-0.104*	0.043
I follow influencers because of information.	-0.035	0.044	0.032	-0.012	0.038

^{*} p < 0.05 Kendall Tau correlation test

Table 3: Correlations of demographic characteristics, ways of informing about healthy eating, and the influencer's impact on eating habits.

	Age	Gender	Level of education	Sport or physical activity	City size by population
I am informed about healthy eating through television.	-0.027	-0.035	-0.005	-0.043	0.172*
I am informed about healthy eating through the radio.	0.023	-0.027	-0.012	-0.092	0.265*
I am informed about healthy eating through magazines and newspapers.	0.225*	-0.001	0.154*	-0.030	0.174*
I am informed about healthy eating through blogs.	0.101*	0.122*	0.218*	0.053	-0.057
I am informed about healthy eating through social networks.	-0.111*	0.225*	0.020	-0.006	-0.001
I am informed about healthy eating through influencers.	-0.048	0.131*	-0.011	-0.112*	0.047
On social networks, I follow influencers who talk about food.	-0.038	0.254*	-0.043	0.038	0.069
I believe that the influencers whom I follow have an impact on my food choices.	0.044	0.078	0.140*	-0.039	0.001
When I see an influencer eating health food, I want to consume it.	^{1y} -0.033	0.233*	0.071	-0.152*	-0.038
When an influencer uses a product, I become more aware of that product.	-0.078	0.106*	-0.101*	-0.111*	-0.127*
When an influencer uses a product, I want to buy that product.	-0.043	0.148*	-0.108*	-0.058	0.022
When I want to buy a product, I first consider the influencer's opinion.	-0.071	0.080	-0.105*	-0.044	0.010

^{*} p < 0.05 Kendall Tau correlation test

Respondents with a lower level of education checked the influencer's opinion more often ($\tau = -0.105$, p = 0.036). Respondents who lived in larger cities got information about nutrition through television (τ = 0.172, p < 0.001), radio ($\tau = 0.265$, p < 0.001) and magazines and newspapers ($\tau = 0.174$, p < 0.001). On the other hand, respondents who lived in smaller towns and cities often became more aware of a product when they saw it eaten by an influencer ($\tau = -0.127$, p = 0.018) (Table 3). Respondents who declared that they eat healthy most often believed that influencers were a credible source of information ($\tau = 0.118$, p = 0.019), and most often followed influencers for motivation ($\tau =$ 0.115, p = 0.022) and information they shared (τ = 0.131, p =0.009). Furthermore, the respondents who declared that they do not consider their calorie intake believed that they knew well what influencers were ($\tau =$ -0.107, p = 0.033). On the other hand, respondents who declared that they watch their calorie intake more often believed that influencers are a credible source of information ($\tau = 0.128$, p = 0.011). It is interesting to note that respondents who often bought food by themselves followed influencers for inspiration (τ = 0.104, p = 0.038), leisure ($\tau = 0.133$, p = 0.008), content they publish ($\tau = 0.122$, p = 0.015), and finally for the information that influencers share ($\tau = 0.161$, p = 0.001). Also, the respondents who declared that they do not cook by themselves more often believed that influencers are a credible source of information (τ = -0.100, p = 0.047). Those who declared to cook by themself more often followed influencers for leisure (τ = 0.140, p = 0.005) (Table 4). Respondents who declared that it is important for them to eat healthily,

often followed influencers for inspiration ($\tau = 0.171$, p < 0.001) and the content they publish ($\tau = 0.153$, p = 0.002). Respondents for whom low-calorie food was important, often considered influencers to be a credible source of information ($\tau = 0.118$, p = 0.019) and most often followed influencers for leisure ($\tau = 0.138$, p = 0.036). In the end, respondents for whom food needed to look attractive often used social networks ($\tau = 0.156$, p = 0.002), and they knew well what and who influencers were ($\tau = 0.173$, p < 0.001). Likewise, users for whom food must look attractive often followed influencers on social networks ($\tau = 0.099$, p = 0.048), mainly because of leisure ($\tau = 0.176$, p < 0.001) (data not shown in table). Finally, the significant correlation between respondents' attitudes about food and the information methods about healthy eating confirmed the hypothesis that influencers influence the choice of a healthy diet among generation Z. Respondents who declared that it is important for them to eat tasty food got information about healthy nutrition through blogs (τ = 0.131, p = 0.009), social networks (τ = 0.111, p = 0.27), and most importantly, by following influencers on social networks ($\tau = 0.119$, p = 0.018). Furthermore, the respondents who said that it is important for them that food looks attractive, often got information about healthy eating through television ($\tau = 0.099$, p = 0.049) and radio ($\tau = 0.125$, p = 0.013) (Table 5). Respondents who mainly prepared food at home and took it with them often followed influencers on social networks (τ = 0.153, p = 0.002). Respondents who declared that they often eat food in a canteen or restaurant often knew

Table 4: Correlations of attitudes about eating habits, social networks, and influencers

	I eat healthily.	I take care of the calorie intake.	I often buy food by myself.	I often cook by myself.
I use social networks.	0.030	-0.064	-0.016	0.021
I know what influencers are.	0.027	-0.107*	-0.055	0.054
I consider the influencers a credible source of information.	0.118*	0.128*	0.001	-0.100*
I follow influencers on social networks.	0.033	-0.026	-0.005	-0.007
I follow influencers because of motivations.	0.115*	0.079	0.097	-0.004
I follow influencers because of inspirations.	0.092	0.032	0.104*	0.041
I follow influencers because of pastimes.	0.058	-0.009	0.133*	0.140*
I follow influencers because of the content they publish.	-0.004	-0.049	0.122*	0.062
I follow influencers because of information.	0.131*	0.071	0.161*	0.029

^{*} p < 0.05 Kendall Tau correlation test

Table 5: Correlations of attitudes about food and ways of informing about healthy eating

It is important to me that the food ...

	is tasty	is healthy	has low calorie	looks attractive
I am informed about healthy eating through television.	0.034	0.053	0.032	0.099*
I am informed about healthy eating through the radio.	-0.078	0.057	0.091	0.125*
I am informed about healthy eating through magazines and newspapers.	-0.019	0.046	0.083	0.048
I am informed about healthy eating through blogs.	0.082	0.131*	0.066	-0.086
I am informed about healthy eating through social networks.	0.052	0.111*	0.075	0.012
I am informed about healthy eating through influencers.	0.034	0.119*	0.083	-0.009

^{*} p < 0.05 Kendall Tau correlation test

what and who influencers were ($\tau=0.125,\ p=0.013$) and believed that influencers are most often a credible source of information ($\tau=0.102,\ p=0.044$). They got information about healthy eating through radio ($\tau=0.128,\ p=0.011$), magazines and newspapers ($\tau=0.157,\ p=0.002$), but also through social networks ($\tau=0.116,\ p=0.022$) and influencers ($\tau=0.149,\ p=0.003$). Those who stated that they often eat street food, such as a bakery or fast food, often used social networks ($\tau=0.115,\ p=0.022$) and considered influencers credible sources of information ($\tau=0.105,\ p=0.038$). They get information about healthy eating through influencers on social networks ($\tau=0.145,\ p=0.004$) (data not shown in table).

DISCUSSION

One hundred and seventy-eight respondents of Generation Z, aged 18-25, were included in this study. According to the study results, the eating habits of Generation Z in Croatia are healthy. Generation Z generally pays attention to food choices and chooses a healthy option more often, if possible. In the survey, 60.6% of respondents declared that they eat healthily, and among many potential options, most would choose alternatives related to healthy eating. Besides the attitude to healthy eating, respondents mostly declared that influencers impact their healthy eating choice. It is also interesting to note that women use social networks and follow influencers more often than men. Similarly, respondents who care about healthy eating often look for information from influencers on social networks. Those who prepare food at home and take it to their work or university, which is the most valuable option when eating outside, follow influencers on social networks. The eating habits of Generation Z have

changed a lot compared to other generations. There is a significant increase in the number of people suffering from obesity, but also an increasing number of people suffering from anorexia and bulimia. In 1975, for both sexes, obesity prevalence was less than 2%, while by 2016, it had exceeded 13% in boys and 7% in girls in Croatia (Di Cesare et al. 2016). This data is alarming because the Croatian nations are now 5th in the ranking of European nations with the most significant number of children aged 7 to 9 who suffer from overweight. Generation Z wants to choose its eating habits. Research conducted in Finland in 2020 found that members of Generation Z mostly buy fresh foods such as fruit, vegetables, or bread and that they discard minimal amounts of food, approximately 10%. The respondents show a high awareness of food waste and try to reduce it to a minimum in their households. Respondents who control shopping in their household have a greater desire to buy healthy food, and respondents who live with their parents said that, when they live alone, they will choose healthier food and make healthier meals as much as possible (Kymäläinen et al. 2021). In addition to the changes in healthy eating habits of generation Z, in modern times, there are general changes in the behavior of the same generation compared to previous generations (Betz 2019). There is also an increase in nutritional programs such as veganism, vegetarianism, carnivore and keto diets, and many others. A study conducted in the USA showed that 11% to 12% of members of Generation Z identify themself as vegetarian or vegan (Su et al. 2019). These data are similar to the Generation Y data but pretty different from the data for Generation X, which presume the growing trend of younger generations toward modern eating habits created mainly by surrounding sources, such as families, friends, and influencers. Celebrities' advertisements about healthy eating may encourage children and young people to eat

healthy foods. Still, meta-analyses found that this effect is usually less intense than that of unhealthy foods (Knoll & Matthes 2017, Smits & Vandebosch 2012). A recently published study found that children who saw influencers eating unhealthy snacks increased significantly overall intake and especially intake of unhealthy snacks, compared to those who saw influencers with nonfood products. Watching the influencers with healthy snacks did not significantly affect intake (Coates et al. 2019). The problem is that the tastiness of high-salt and high-sugar food is much stronger than that of healthier food (Anzman-Frasca et al. 2012). Also, unhealthy food is often packed in colorful packaging with brand logos making them more attractive to modern generations (Buijzen Valkenburg 2003). There is still not enough data on the influence of social networks on eating behavior. Social media networks are a consistent environment with different positive and negative messages, including those about eating (Montgomery & Chester 2009). Although Facebook is the most common social media network reported, there is the rising popularity of Instagram and others among adolescents and Generation Z. So, it is supposed that Instagram, launched in 2010, a messaging app whose first users are almost a generation younger than Facebook users, could be an effective channel for engaging this usually hardto-reach population in health topics, including health eating (Chung et al. 2021). Healthy eating posts on these platforms may initiate lifestyle changes among individuals with unhealthy behavior. Obese and overweight adolescents and adults are likelier to follow and adopt healthy food posts than unhealthy junk food posts on Instagram and Facebook (Holmberg et al. 2018, Kinard 2016). Similarly, favorable fruit and vegetables may inspire healthy behavior changes (Liberati et al. 2009). However, social media pressures about ideal body image can cause eating disorders and poor well-being (Cohen et al. 2019). Sustained social media interventions may increase feelings of social support and help with weight loss among young adults (Kulik et al. 2014, Nour et al. 2017). Facebook private and text message interventions were found to result in significant weight loss in a diverse group of students (Napolitano et al. 2013). In addition, social media platforms such as Facebook, Twitter, and YouTube can increase awareness of excessive caloric intake through sugar-sweetened beverages and help reduce their consumption (Barragan et al. 2014). The strength of the media platforms' influence can be reflected in the fact that the perceived norms and preferences regarding nutrition among a sample of English students (average age 22) on Facebook predicted the actual intake of fruits and vegetables by the users, but also actual snacks and sugar - the consumption of sweetened drinks (Hawkins et al. 2020). In addition, the association between overweight and obese adolescents in Australia due to fast food consumption is associated with

advertisements viewed on Facebook (Thaichon et al. 2021). In individuals with established obesity, social media can serve as a source of mental health support for eating disorder recovery and relapse prevention (Kendal et al. 2017). However, nutritional information shared on social media can sometimes be misleading and complex, with national dietary guidelines and evidencebased dietary recommendations included. promoting healthy eating in Generation recommendations from social media must be accurate. attractive, and easy to understand to avoid increasing consumer confusion (Ramachandran et al. 2018). A sixweek survey of five popular British newspapers found that the general public is regularly exposed to poorquality information in newspapers about what to eat to promote health, particularly articles reporting on obesity. Journalists, researchers, university press officers, and scientific journals need to work more closely together to ensure that clear, consistent nutrition messages are sent to the public in an engaging way (Kininmonth et al. 2017). Evidence from social network analyses indicates that peer influencers can effectively achieve health behavior change (Lee et al. 2019). In this study, 60.6% of respondents declared that they eat healthily, and among several options to choose from, most respondents chose options related to healthy eating. Although a minor part of the respondents chose that influencers significantly influence their choice of healthy eating, the correlation tables showed that respondents who value healthy eating often follow influencers on social networks. It seems that healthy food is essential to Generation Z in Croatia, who consume it in large quantities, and that through the promotion of certain foods via influencers, the choice of healthy food over unhealthy options can be achieved. Future research is needed to deeply evaluate the role and impact of influencers on healthy eating behaviors in Generation Z.

CONCLUSION

The results of this study suggest that influencers greatly influence the eating habits of Generation Z and that they are aware of healthy eating habits. Also, those who take care of healthy eating, follow influencers.

Acknowledgements: None

Conflict of interest: None to declare.

Contribution of individual authors:

Mihael Jandroković: study design, data collection, statistical analysis, literature review, first manuscript draft, manuscript revisions, approval of the final version Vanja Šabek: study design, literature review, approval of

the final version

manuscript draft, approval of the final version
Tomislav Bulum: literature review, first manuscript draft,
manuscript revisions, approval of the final version
Darko Marčinko: first manuscript draft, manuscript
revisions, approval of the final version
Sonja Jandroković: literature review, first manuscript
draft, manuscript revisions, approval of the final version

Martina Tomić: literature review, statistical analysis, first

References:

- 1. Anzman-Frasca S., Savage JS, Marini ME, Fisher JO, Birch LL. Repeated exposure and associative conditioning promote preschool children's liking of vegetables. Appetite 2012; 58:543–553.
- 2. Audrezet A., Charry K. Do Influencers Need to Tell Audiences They're Getting Paid? 2019, dostupno na: https://dial.uclouvain.be/pr/boreal/object/boreal:219105.
- 3. Barragan NC, Noller AJ, Robles B, Gase LN, Leighs MS, Bogert S, Simon PA, Kuo T. The "sugar pack" health marketing campaign in Los Angeles County, 2011-2012. Health Promot Pract 2014; 15: 208–216.
- 4. Betz CL. Generations X, Y, and Z. J Pediatr Nurs 2019; 44: A7-A8.
- Boerman SC. The effects of the standardized instagram disclosure for micro- and meso-influencers. Comp Hum Beh 2020;103:199-207.
- Breves P L, Liebers N, Abt M, Kunze A. The perceived fit between instagram influencers and the endorsed brand: How influencer-brand fit affects source credibility and persuasive effectiveness. J Advert Res 2019; 59:440-454.
- 7. Buijzen M, Valkenburg PM. The effects of television advertising on materialism, parent-child conflict, and unhappiness: a review of research. J Appl Dev Psychol 2003; 24: 437–456.
- 8. Campbell C, Farrell JR. More than meets the eye: The functional components underlying influencer marketing. Business Horizons 2020;63,469–479.
- 9. Chung A, Vieira D, Donley T, Tan N, Jean-Louis G, Kiely Gouley K, Seixas A. Adolescent peer influence on eating behaviors via social media: scoping review. J Med Internet Res 2021; 23: e19697.
- Coates AE, Hardman CA, Halford JCG, Christiansen P, Boyland EJ. Social media influencer marketing and children's food intake: a randomized trial. Pediatrics 2019; 143: e20182554.
- 11. Cohen R, Irwin L, Newton-John T, Slater A. #bodypositivity: A content analysis of body positive accounts on Instagram. Body Image 2019; 29: 47–57.
- 12. De Jans S, Spielvogel I, Naderer B, Hudders L. Digital food marketing to children: How an influencer's lifestyle can stimulate healthy food choices among children. Appetite 2021; 162: 105182.
- 13. de Veirman M, Hudders L, Nelson M R. What Is Influencer Marketing and How Does It Target Children? A Review and Direction for Future Research. Fron Psychol 2019;10:2685. doi: 10.3389/fpsyg.2019.02685.
- 14. de Veirman M., Hudders L. Disclosing sponsored Instagram posts: the role of material connection with the brand and message-sidedness when disclosing covert advertising. Int J Advert 2020; 39: 94–130.
- Di Cesare M, Sorić M, Bovet P, Miranda JJ, Bhutta Z, Stevens GA, et al. The epidemiological burden of obesity

- in childhood: a worldwide epidemic requiring urgent action. B MC Med 2019; 17: 212.
- Duino J. Google Forms becomes more powerful w/ new intelligent response validation, 'Checkbox grid' questions, more. 9to5Google. Retrieved July 11, 2017.
- 17. Galmiche M, Déchelotte P, Lambert G, Tavolacci MP. Prevalence of eating disorders over the 2000–2018 period: a systematic literature review. Am J Clin Nutr 2019; 109: 1402-1413.
- 18. Garcia-Dia MJ. Being an influencer. Nurs Manage 2020;51:56. doi: 10.1097/01.NUM4.0000688968.83162.1d.
- 19. Hawkins LK, Farrow C, Thomas JM. Do perceived norms of social media users' eating habits and preferences predict our own food consumption and BMI? Appetite 2020; 149: 104611.
- Holmberg C, Berg C, Hillman T, Lissner L, Chaplin JE. Self-presentation in digital media among adolescent patients with obesity: Striving for integrity, riskreduction, and social recognition. Digit Health 2018; 4:
- 21. Jin SV, Ryu E. "I'll buy what she's #wearing": The roles of envy toward and parasocial interaction with influencers in Instagram celebrity-based brand endorsement and social commerce. J Retail Consum Serv 2020;55:102121.
- Kaylor SK, Allen I, Crim AD, Callihan ML. Calories and control: Eating habits, behaviors, and motivations of Generation Z females. J Am Coll Health. 2022 Jan 25:1-9.
- 23. Kendal S, Kirk S, Elvey R, Catchpole R, Pryjmachuk S. How a moderated online discussion forum facilitates support for young people with eating disorders. Health Expect 2017; 20: 98–111.
- 24. Kinard BR. Insta-grams: The effect of consumer weight on reactions to healthy food posts. Cyberpsychol Behav Soc Netw 2016; 19: 481–486.
- 25. Kininmonth AR, Jamil N, Almatrouk N, Evans CEL. Quality assessment of nutrition coverage in the media: A 6-week survey of five popular UK newspapers. BMJ Open. 2017; 7: e014633.
- 26. Knoll J, Matthes J. The effectiveness of celebrity endorsements: a meta-analysis. J Acad Mark Sci 2017; 45:55–75.
- 27. Kymäläinen T, Seisto A, Malila R. Generation Z food waste, diet and consumption habits: a Finnish social design study with future consumers. Sustainability 2021; 13: 2124.
- Kucharczuk AJ, Oliver TL, Dowdell EB. Social media's influence on adolescents' food choices: A mixed studies systematic literature review. Appetite 2022;168:105765.
- Kulik NL, Fisher EB, Ward DS, Ennett ST, Bowling JM, Tate DF. Peer support enhanced social support in adolescent females during weight loss. Am J Health Behav 2014; 38: 789–800.
- 30. Lee YF, McLaws M, Ong LM, Amir Husin S, Chua HH, Wong SY, Pittet D, Zingg W. Hand hygiene Social network analysis of peer-identified and management-selected change agents. Antimicrob Resist Infect Control 2019; 8: 195.
- 31. Liberati A, Altman DG, Tetzlaff J, Mulrow C, Gøtzsche PeC, Ioannidis JPA, Clarke M, Devereaux PJ, Kleijnen J, Moher D. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and

- elaboration. Ann Intern Med 2009; 151: W65-W94.
- 32. Montgomery KC, Chester J. Interactive food and beverage marketing: Targeting adolescents in the digital age. J Adolesc Health 2009; 45(3 Suppl): S18–S29.
- 33. Napolitano MA, Hayes S, Bennett GG, Ives AK, Foster GD. Using Facebook and text messaging to deliver a weight loss program to college students. Obesity (Silver Spring) 2013; 21: 25–31.
- 34. Nour M, Yeung SH, Partridge S, Allman-Farinelli M. A narrative review of social media and game-based nutrition interventions targeted at young adults. J Acad Nutr Diet 2017; 117: 735–752.
- 35. Ramachandran D, Kite J, Vassallo AJ, Chau JY, Partridge SR, Freeman B, Gill T. Food trends and popular nutrition advice online Implications for public

- health. Online J Public Health Inform 2018; 10: e213.
- 36. Smits T, Vandebosch H. Endorsing children's appetite for healthy foods: celebrity versus non-celebrity spokes-characters. Communications 2012; 37:371–391.
- 37. Su C H, Tsai CH, Chen MH, Lv WQ. U.S. Sustainable food market generation Z consumer segments. Sustainability 2019; 11: 3607.
- 38. Thaichon P, Quach TN. Online marketing communications and childhood's intention to consume unhealthy food. Australas Mark J 2021; 24: 79–86.
- 39. Vrontis D, Makrides A, Christofi M, Thrassou A. Social media influencer marketing: A systematic review, integrative framework and future research agenda. Int J Consum Stud 2021;00:1-28.

Correspondence:

Tomislav Bulum, MD, PhD
School of Medicine, University of Zagreb, Vuk Vrhovac
University Clinic for Diabetes, Endocrinology and
Metabolic Diseases, Merkur University Hospital,
Dugi dol 4a, Zagreb, Croatia
E-mail: tomobulum@gmail.com