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Synergy between social media marketing and maps of health needs in oncology – on the example of defining the potential of social media marketing in promoting health behaviors among junior high school students

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Summary. Finding effective tools to promote health behaviors became a priority of health policy to develop maps of health needs in oncology. The objective of the paper is indication of contact points between social media marketing and maps of health needs on the example of the potential of this tool and source of information in promoting health behaviors among junior high schools students. The used method is a pilot study, survey. 210 students from Będzin junior high schools (lower secondary schools) were examined. Microsoft Excel and StatSoft Statistica software were used, a chi-square test was used, at statistical significance $\alpha = 0,05$. On the basis of the research it is determined that due to the commonness of social media usage it will have a major task in broadening knowledge on healthy lifestyles and prevention of oncological diseases in the future. Synergy between social media marketing and the map of health needs may become an effective tool of management optimization in health care.

Introduction

Estimation of health needs for various oncological diseases is one of the premises to create regional maps of health needs. Such maps aim to support managerial decisions regarding health care in oncological aspects (*Mapy...*, 2018). Their task, among others, is to diagnose demographic and epidemiological trends as well as estimate future needs in this respect. There is forecast based on demographic processes that in 2016–2029 the number of cancer cases will increase by as much as 18% (from 180.3 thousand to 213.1 thousand) (*Mapa potrzeb...*, 2018).

It is estimated that currently circa 40% of cancer incidence are attributed to improper lifestyle, therefore activities aiming to prevent it by means of health promotion are assigned a greater role. Creation of these maps is aimed at improvement of management model in health care sector (*Mapa potrzeb...*, 2018; Jakimiuk, 2018). Provision of high efficiency in terms of management requires a functional and two-way information flow. A constant need for effective communication systems exists during realization of particular management functions in health care policy (planning, organization, coordination/realization and control).

Health promotion is a process which helps an individual and a social group increase control over health condition, among others through a healthy lifestyle. The aim of health promoting policy is to stress the role of health in every aspect of life and economy. As such is understood the ability to influence society which is further encouraged to promote a healthy lifestyle (Kulik, 2002, p. 15; Cianciara, 2010, p. 30–47). Forming individual behaviors, i.e. a so called improvement of individual abilities, allows people to adjust to various circumstances and changes appearing in their health condition. It can be achieved by means of education and information (Kulik, Pacion, 2014, p. 8–31).

Propagation of health behaviors became a priority of health policy and is conducted for all age groups. Effective communication with specific target groups by means of the most popular sources of information used by them constitutes an important aspect. A tool of everyday communication among young people is the internet. This communication functions not only as an instrument of information and education, but also entertainment. Diversity and commonness of the forms in which it is being used are forced by the pace of social changes. These changes refer to norms and culture of a specific community. The most important reason for the changes lies in the fact that the internet constitutes nowadays a space of fulfilling young people's needs in their adolescence. „Thus, a cyberspace became a market and a database allowing for the use of information technology in a much more attractive way compared to traditional textbooks or other educational materials” (Kowalska, Kalinowski, Bojakowska, 2013). This is described as a process of cyberculture forming. Cyberculture

is defined as a culture in times characterized by a domination of electronic media, including social media (Cupał, Masztalerz-Migas, 2013). The accessibility of internet communication is a proof of civilization progress. Its features such as: multidimensionality, wide scope of influence and possibility to use technological solutions for end users are a foundation for employing cyberspace for the sake of health issues. Such an application of information technology in medicine aspects was named e-health. E-health is defined as a general usage of information technology in diagnostics, disease prevention, control, treatment, as well as living a healthy lifestyle. It covers a wide array of activities used in health care. A good example is health information in virtual form for the purpose of health education directed to health promotion on both individual and social scale (Syrkiewicz-Świtała, Holecki, Wojtynek, 2014).

According to the latest *Global Digital Report 2018*: 4,021 billion people worldwide use the internet, and 3,196 billion people are active social media users (*Global...*, 2018). In comparison to 2017, a 7% increase (by 248 million) in the number of internet users can be observed, and a 13% growth (by 362 million) in the number of active social media users. In 2017, 15 million people used social media services in Poland (Pawłał-Dobrzańska, 2017). In 2018, Poles use YouTube (64%) more frequently than Facebook (61%) (*Mobile...*, 2018). It is estimated that 610 million people of junior high school age use the internet, of which 80 million girls and 96 million boys aged 13–17 have a Facebook account (*Global...*, 2018).

An important social networks feature can be reaching out successfully to younger people whose health condition in the future will generate changes of the parameters on health maps. A thorough analysis of data coming from the system of social media may give the opportunity to interpolate health trends of the future. This became a premise for investigating the research problem whose main aim is to highlight contact points between social media marketing and maps of health needs on the example of determining the tool potential and information source in promotion of health behaviors among junior high school youth.

Material and method

Pilot study in the form of a survey was conducted in 2017 among students of three selected junior high schools (Polish *gimnazjum*) in Będzin. 210 students of “A” classes of every year took part in the study, of which there were 95 (45.24%) girls and 115 (54.75%) boys altogether. Three groups were selected: the most numerous with 88 students (41.90%) – those attending class I, another encompassing youth from class III – 66 students (31.43%), and the least numerous group with students of class II – 56 people (26.67%).

The research tool was an authorial questionnaire covering personal data and 11 single and multiple choice questions regarding the meaning of social media marketing in propagation of health behaviors among youth. The results of gathered research material were analyzed by means of the following software: Microsoft Excel and StatSoft Statistica. In order to examine relationships between the two categorical variables the χ^2 test of independence was used, at a default level of significance $\alpha = 0.05$.

Results

The analysis of results indicated which of the internet marketing communication tools are most often used by junior high school students. The students who participated in the survey could select a few versions of answers to this question. The analysis of gathered data shows that all respondents use both websites and mobile applications (210; 100.00%). Another selected answer was social media – 207 students (98.58%). The smallest group were students using electronic mail – 107 (50.95%). Taking into account gender of the respondents and the use of internet tools of marketing communication, it is noticeable that all girls and boys use mobile applications and websites. E-mail is used by more boys (62; 29.52%) than girls (45; 21.43%). The use of the chi-square test in reference to students' gender and usage of marketing communication internet tools showed no statistical dependence ($p > 0.05$).

The study also verified whether junior high school students improve their knowledge on health behaviors through the internet. On the basis of the results it can be stated that a large majority of respondents use the internet to broaden their knowledge on a healthy life style (132; 62.86%), whereas 78 respondents (37.14%) do not search for information on health behavior online. Taking into account gender of the respondents, it can be observed that more girls (70; 30.33%) search the Web for information on healthy lifestyles than it is in the case of boys (62; 29.52%). The chi-square test used for the variables showed a statistical relationship ($p = 0.00316$), which proves the existence of differences in using the Internet to broaden the knowledge on health issues among boys and girls - more girls look for such information online.

The study assessed how the students in junior high schools make use of the knowledge obtained online on health behaviors in their everyday life. One of the questions in the questionnaire was intended to verify if the students perceive the web as a reliable source of information regarding health. The vast majority of respondents (159; 75.71%) claim that information on health found online are reliable and only 51 (24.29%) hold the opposite opinion. The data analysis indicates that both girls (77; 37.00%) and boys (82; 39.00%) similarly believe in the credibility of health information available on the internet. A larger number of boys (33; 16.00%) consider such information as not enough trustworthy. The

test of independence did not confirm the existence of a statistical relationship between the variables ($p > 0.05$).

Students taking part in the survey had also to reply whether they implement health recommendations obtained online. The analysis shows that more respondents (133; 63.33%) implement recommendations on a healthy lifestyle. The rest of the students (77; 36.67%) do not follow them in their daily routines. Analyzing the results from perspective of the respondents' gender, it can be observed that boys use the internet health advice less frequently than girls (52; 24.76%). The number of girls making use of health recommendations in reality reached 70; 33.33%. The dependence test showed a statistical relationship ($p = 0.00467$), which demonstrates that the answers varied depending on the respondents' gender - girls, more often than boys, follow health recommendations in everyday life..

The study aimed to reveal to which health promoting behaviors the junior high school youth were encouraged through information obtained from the internet. This question involved an option of selecting a few answers. 90 students (42.86%) claimed that information obtained from the web persuaded the group to implement health practice: 78 (37.14%) students to a proper nutrition, and 71 (33.81%) were induced to avoid stimulants. The internet knowledge encouraged 33 (15.71%) respondents to medical check-ups and self-control. Most girls were encouraged by online information to health practice (52; 24.76%) and to healthy nutrition (47; 22.38%). Similar results were obtained in boys: 38 (18.10%) of them use health practice, and 31 (14.76%) maintain healthy eating habits. The knowledge originating from the internet inclined 35 (16.67%) boys and 36 (17.14%) girls to avoid stimulants. The chi-square test confirmed to be statistically significant ($p < 0,05$). For answers: proper nutrition ($p = 0.00078$) and health practice ($p = 0.00157$) it was noted that they vary depending on the respondents' gender – more girls than boys support these health activities.

Furthermore, the research carried out among the junior high school students was intended to show which of the given internet tools of marketing communication is the most interesting form of obtaining information for the respondents. The most attractive form according to them are social media (90; 42.86%). Websites are also considered an interesting way of seeking information online. Only 31 (14.76%) respondents found mobile applications as more interesting, and merely 1 person (0.48%) chose electronic mail. The results allow for a statement that social media are the most attractive tool for the marketing communication for girls (47; 22.38%). For boys, websites seem an interesting way of seeking information (51; 24.29%). They also express greater enthusiasm for mobile apps (20; 9.52%). The chi-square test did not prove a statistical dependence between the variables ($p > 0.05$).

The study conducted among the junior high school students was elaborated to show which social media are most often used by teenagers and which of them are considered as most credible. Based on the collected data it can be seen that the students most frequently use social networks (114; 54.29%). Second place belongs to topical websites (52; 24.76%). Only 2 persons (0.95%) in the whole group of respondents marked websites like wiki as social media most often chosen by them. Comparing results in terms of respondents' gender and their choice of given social media, it can be seen that more girls (65; 30.94%) than boys (49; 23.33%) use social media services. It is opposite in the case of topical websites, as boys constitute a larger group (41; 19.52%) than girls (11; 5.24%). None of the girls marked information web portals. Using the chi-square test confirmed a statistical dependence showing a difference between the way boys and girls chose most frequently used social media. Girls tend to use social media, blogs and microblogs more often, whereas boys use internet forums, topical websites and internet web portals to a larger extent.

Another aim of the study was to verify which of the given social media constitute a most reliable and credible source of Internet information for the young people. According to the school boys and girls surveyed, a highly reliable source for obtaining verified information online are web portals as 73 of them (34.76%) provided this answer. Students who perceive services like wiki as a particularly reliable source formed a group of 59 (28.10%). Among the respondents, 27 students (12.85%) declared social networks as the most credible database for seeking information, and only 2 (0.95%) find microblogs as such. The comparison of data allowed to observe that for both girls (39; 18.57%) and boys (34; 16.19%), the web portals constitute a reliable information base. Second most often provided answer was services like wiki, both for boys (30; 14.29%) and girls (29; 13.81%). Many more boys (19; 9.04%) than girls (1; 0.48%) chose topical internet services as an answer. Also internet forums are considered more credible to boys (13; 6.19%) than to girls (8; 3.81%). The chi-square test used here proved to be statistically significant ($p = 0,00992$) and showed a difference between the most reliable source of web information for boys and girls. The difference manifests itself, for example, with topical websites, as more boys than girls selected this answer.

Conclusions

The youth surveyed employs to a large extent internet tools to broaden their knowledge on healthy behaviors. For this group, the most credible source of information on healthy lifestyles are web portals. All kinds of mobile applications are also willingly used. Most common internet tools of marketing communication are websites, mobile apps and social media used by almost all students surveyed. The least favorite tool for the youth is e-mail, as only half of the re-

spondents use it. The junior high school students use the internet extensively to increase the level of their knowledge about healthy lifestyles – more than half of them admit seeking health-enhancing information by means of the internet. The majority of such information seekers are girls. The respondents pinpointed social media as most frequently used. To a less degree, they use topical services. Both boys and girls perceive web portals as the most credible source of information. Almost half of the students find social media and websites the most interesting tools. Most of the respondents consider the internet as a reliable source of information on health and similar topics. Health-enhancing recommendations taken from it are implemented by most students. Generally, knowledge obtained from the internet encourages young people to undertake healthy activities. Moreover, it promotes proper nutrition and avoidance of stimulants. It can also be stated that girls more often than boys apply to health propagating recommendations.

Currently, media constitute one of the basic sources of information on health issues (Szymczuk et al., 2011, p. 165–168; Paszkowska, 2008, p. 244–252). As the study shows, young respondents search for health knowledge the by means of the internet. It can be observed that age highly influences the frequency of seeking health promoting information. The analysis of data gathered confirms that social media marketing exerts a strong impact on propagating health behaviors. The junior high school youth eagerly use technical novelties, and in doing so, derive knowledge related to healthy lifestyles. Taking the respondents' gender into account, it can be seen that girls to a large extent seek information on topics related to health matters.

The presentation of social media marketing effectiveness in the selected age category represented by a group of junior high school students enables formulation of several recommendations and suggestions. It is advocated that institutions dealing with disease prevention intensify their activities as regards social media marketing in deficit and problematic areas highlighted on the maps of health needs in oncology. Moreover, it is suggested to centralize management of cash flow according to the directives stemming from the maps. Social media support only in deficit and critical areas. Due to the fact that nowadays is the time of constant information “overload”, the plan of activities regarding social media shall be treated as a derivative of accurate and up-to-date maps of health needs in oncology and yet another step in improving healthcare system. The additionally implemented solution may be helpful as an early warning system allowing notification of dysfunctions by a feedback loop (two-way communication). This may support the on-going and systematic actualization of already created maps of health needs in oncology.

It is indicated that due to the commonness and ubiquity of social media usage, they will play an important role in broadening people's knowledge on

healthy lifestyles and oncological diseases prevention in the future. The synergy of social media marketing and maps of health needs may become an effective tool for the optimization of health care management.

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Synergia social media marketingu i map potrzeb zdrowotnych w onkologii na przykładzie określenia potencjału social media marketingu w propagowaniu zachowań prozdrowotnych wśród młodzieży gimnazjalnej

Słowa kluczowe: marketing, social media marketing, promocja zdrowia, zdrowie publiczne

Streszczenie. Znalezienie efektywnych narzędzi propagowania zachowań prozdrowotnych stało się priorytetem polityki zdrowotnej przy ustalaniu map potrzeb zdrowotnych w onkologii. Celem artykułu jest wskazanie punktów stykowych między social media marketingiem a mapami potrzeb zdrowotnych na przykładzie określenia potencjału tego narzędzia i źródła informacji w propagowaniu zachowań prozdrowotnych wśród młodzieży gimnazjalnej. Materiał badawczy stanowiły badania pilotażowe, ankietowe. Przebadano 210 uczniów z gimnazjów z Będzina. Wykorzystano programy Microsoft

Exel i StatSoft Statistica, zastosowano test chi-kwadrat, poziom istotności $\alpha = 0,05$. Na podstawie badań stwierdzono, że ze względu na powszechność stosowania mediów społecznościowych, będą one miały znaczące zadanie w poszerzaniu wiedzy na temat zdrowego stylu życia i profilaktyce chorób onkologicznych w przyszłości. Synergia social media marketingu i map potrzeb zdrowotnych może stanowić skuteczne narzędzie optymalizacji zarządzania w ochronie zdrowia.

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Cytowanie

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