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Multi-purpose use of Social Media for Health purposes: Scooping review of Systematic reviews

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Abstract

Background: Social media has over the scores of past decades, created a paradigm shift in human activities, communications, meetings, products sales and consultations from physical presence to virtual platforms for achieving them, across several sectors of life, with positive and negative attributes. This study was set out to examine for a perceived multi-purpose use social media for health purposes and usage flexibility, through a scooping review of systematic reviews, with data mined from systematic review studies conducted on social media use for health issues; and proffer avenues to avoid and overcome hazards associated with its usage. The articles we retrieved were those deposited in five Journals database repositories.

Method: We engaged a scooping review of systematic reviews based studies in which we mined for related articles from five Journals data bases, namely PubMed, PubMed Central, BMC Journals and Mendeley-Elsevier, between the period 10th July 2018, and 28th June 2021. We used specific search words based on our inclusion criteria for selection of articles for this study. In all, 23 studies were selected; after we obtained records from our search words inputted into the databases, studied the abstracts and contents of full works to screen for studies that met our inclusion criteria.

We selected articles for our scooping review and using adjusted PRIMSA guidelines as required for a scooping review. The analysis engaged percentages and summations.

Results and conclusion: Analysis for multi-purpose use of social media from extracted data indicated diverse fields in the health sector to which social media usage is applied, such as in Health communication (3 articles-13%), Reproductive health (1 article-4.4%), Preventive and curative health (9 articles -39.1%), Public health and health Nutrition (5 article -21.7%), Mental health and Psychiatry (4 articles -17.4%), and Surgical health (1 article -4.4%).

Further examination of retrieved data for multi-purpose use revealed the existence of at least 6 articles in which interventional use of social media for health purposes where examined and brought to expression.

We found flexible dynamic use of social media with beneficial values indicated in at least 21 articles (91.3% of all articles) and hazards expressed from at least 9 articles (39.1% of all articles). Then within each of the identified health fields we found flexibilities in diverse sub-fields in the health sector.

Our scooping review and basic analyses indicated clues that the use of social media is multi-purpose and with flexibilities of usage. Since this is a scooping review based on a concept, it is not totally definitive. As such, our future studies and those of others can compliment this study with deeper assessments using more rigorous systematic reviews and meta-analysis. However, there are areas and avenues from which we can continually optimize the benefits from use of social media for health purposes across healthcare intersects from medical care, pharmaceuticals and biotechnology medical-care products, health nutrition based foods derived from agricultural-sector, technological devices for health care, and health communication among others, despite observed hazards in its usage.

Keywords: Social media, health, multi-purpose, dynamics, beneficial, hazards.

Introduction

Social media usage became enhanced and popular in the late 1990s when the first blogging sites were birthed in 1999 (**Hendricks, 2020)** and in the early 2000s (in the first social media boom period) when MySpace and LinkedIn were launched as social media platforms on the Internet, You Tube joined in the mid 2000s and in 2006 Twitter and Facebook became assessable worldwide at a period when over 200million people were estimated to have access to the internet (**Hale, 2020; Hendricks, 2020).** Thereafter, various other social platforms have emerged on the internet serving various specific goals. The entry of Facebook marked a milestone in the social media service and presently with over 1billion users on it, despite its first restricted usage for Harvard University students at its initial stage of formation. This was as a result of the potentials seen in its usage following the successful Harvard University experience. Today, social media has become widely used and is now helping people promote their businesses and market products- such as health and medicine (pharmaceuticals) supplies, physical technology and biotechnology, domestic needs, sports, educational and music based products.

Social media generally refers to Internet based tools that enable individuals and communities to assemble, communicate, share: information, ideas, concepts, messages, and images among others; and make real-time collaboration with other users. Social media are also known as "Web 2.0" or "social networking" (Ventola, 2014; Dozier et al 2020).[1] In 1997, the first recognized social media platform was developed and placed on Internet in a package called *Six degrees* but was withdrawn from Internet in 2001. It permitted users to create profiles and make friends (**Hale, 2020**).

Social media sites provide several features for different purposes for individual and organization based users. They include blogs, social networks, video and photo sharing sites, wikis information, all of which can be grouped by purpose. The major roles served by specialized social media in supporting the health industry through usage by health industry practitioners include Social networking to site for online Medical consultations and for Medical practitioners to meet and connect with clients on social platforms such as Facebook, MySpace, Instagram, Twitter), Professional networking where health care practitioners share health information and connect

with their fellows in the field, get information on latest research trends on health issues and recruit health care workers (on Globally followed LinkedIn, Mendeley, ResearchGate, Tianji, Baidu, and Sina Weibo), media sharing in which some medical procedures are shared with doctors and nurse and physiotherapists and radiologists, content production blogs with pictures to depict varieties of some health conditions (on Tumbler) and avenues created for disease surveillance with involvement of social media, micro blogging for designed to be easy and fast to share short pieces of information with clients in health care and business industry among others (Charles-Smith et al, 2020). In recent times, Social pharmacies have merged to provide free drugs to financially handicapped patients (Greece's model) while a pool of health related information are aggregated and available with ease of access and cost, except for the cost of purchasing megabytes of browsing credits for internet service providers.

Social media has been included in health support frame work in some institutional health care in the United States such as for veterans to assist reach out to those in remote areas through ICU Telemedicine (Telehealth) (Udeh et al, 2018) and ICU Telepharmacy (Strnad et al, 2018). In addition it is aimed at increasing access to care, promote completion and be beneficial to war veterans (Federal Trade Commission) (Federal Trade Commission of America FTC, 2020). Yvonne Price of University of Arizona Telemedicine Program [ATP] (Price, 2014) opined that Telemedicine is taking advantage of the increasing number of users on social media with more than 75,000healthcare professionals on Twitter, 41% of consumers of health care products now on Facebook, Twitter, You Tube and online forums to select health care providers. As such, there have been diverse types of effects in use of social media on human health (Smailhodziz et al, 2020).

Benefits of usage of social media in health care industry and other sectors of life

- Participation in social media by the general public has increased sharply over the past nine years. In the United States, the proportion of adults using social media has increased from 8% to 69% between 2005 and 2011 (Claywell, 2021; Pew Research Centre PRC, 2019). This makes it a good channel to reach out to target audience, patients or clients.
- The use of social media is prevalent across all ages and professions and is pervasive around the world. For instance, in 2012, there were over one billion users on Facebook worldwide (about one-seventh of the world's population), while there were over 100 million active Twitter users sending over 65 million tweets daily. Shaping this portfolio of usage appeal for social media is the downward trend in appeal towards print news media (Ju et al, 2020; **Ventola, 2014**). It is quite expectable that all of United States newspapers with a weekday circulation of more than 100,000 are using social media as an additional means to distribute their content online (Kumpel et al, 2018; **Ju et al, 2020**).
- Many people, who are not friendly to information seeking, do enjoy social media and often venture to check for information and activities of some organizations such as United Nations Children's' Fund (UNICEF), United Nations Development Program (UNDP), World Health Organization (WHO), and United States Agency for International Development (USAID) among others. Thus, they end up getting useful information on poverty reduction, refugee movements and crisis management issues, health tips and grounds broken in achievements in health sector-including public health.

- Social media platforms keep readers and audience more relaxed to access information. As these platforms are engaged by Public health practitioners, they stand to gain from it, as it appeals to people to access such health related information. Additionally, these readers have opportunity to communicate with the health organizations that run such social media platforms.
- Communicate in times of crisis: The use of social media has increased to provide minute by minute information to consumers. Through social media, hospitals and other organizations are able to deliver real-time updates on hospital capacity, operation status and emergency room access.
- Professional networking: Health care professionals participate in online communities, listens to experts and network.
- Professional education: The communication capabilities provided by social media is used to improve clinical education. Social media are also being widely implemented in undergraduate pharmacy curricula. Typical examples are drawn from Auburn University in the United States (Auburn University., 2021) and The University of Edinburg in the United Kingdom UK (The University of Edinburg, 2018).
- Public health advocacy: Social media has created vast global networks that can quickly spread information and mobilize large numbers of people to facilitate progress towards public health goals. Some states' Public health Departments are using Twitter and other social media to disseminate health information and network.
- For Psychiatric medical support: Social media has been a tool for Psychiatrists to connect with mental health and medical communities. For instance, American Psychiatry Association APA uses social media to support its missions, vision and values, to share APA activities and the latest developments in Psychiatry and psychiatric treatments (American Psychiatry Association APA, 2018). The importance of Psychiatry in Public community health and community medicine are no child's play.
- For psychological practice and help: Social media has supported ease of connection with friends and families then it has ever been prior to this entry into the mainstream of human life, business and activities. Mental health professionals of which includes Psychiatrists and psychologist are the front lines of seeing and ensuring that patients cope with new trends and forms of communications of which includes social media usage and new forms technologies and ease of access of these technologies (All Star Directories, 2018) . Social media brings a sense of belonging, reconnect with lost friends and relations, and help us find role models, deceases loneliness while increasing bonding and these attributes supports mental health. Psychologist and Psychiatrists alike have a role to play to check negative psychological impacts that social media can cause on the mental health of their patients, such as addiction to its usage at the detriment of a child's educational studies and cause depression, a man's work and business, a child's appropriate mental real life development to know his or her real world and not virtual realities caused by addiction to unguided online activities (**All Star Directories, 2018;** Bernhardt et al, 2020).
- Effective marketing and communication: Organizations are able to move away from traditional advertising techniques and now use the internet to connect with consumers in the healthcare field. Also, patients have a tendency to seek information via social media that assists in the selection of doctors, specialists and hospitals to make informed decisions on the best practices from which to seek care.

- Share information by comparing to improve quality: Another effective way that healthcare managers utilize social media is by spending time evaluating their competitors to get an insight into the services they offer and overall patient satisfaction.
- Train public health and medical personnel with live updates during procedures: This has enhanced the ability to deliver up to date information during procedures to fellow doctors, medical students or simply curious individuals.
- Organizational promotion: Health care organizations, including hospitals, health systems, professional societies, pharmaceutical companies, patient advocacy groups and pharmaceutical companies are using social media for many purposes. Uses include communicating with the community and patients, enhancing organizational visibility, marketing products and services, establishing avenue for acquiring news about activities, promotions and fund raising, providing channel for patient resources and education and providing customer service and support. For instance we have Mayo clinic on http://socialmedia.mayoclinic.org.
- Sharing of information by Clinicians: Physicians are now able to access news articles, listen to experts, research medical trends, consult colleagues on patient issues, discuss challenges, make referrals and market themselves, while some now communicate directly with patients.
- Patient education: Social media improve patients' access to health care information and other educational resources.
- Treatment procedures brought closure to patients: Through social media, patients now join virtual communities, participate in research, receive financial or moral support, set goals and track their health progress.
- Enhanced patient to patient interactions: Patients are using social media to connect with others affected by similar conditions. The social networking site PatientsLikeMe (www.patientslikeme.com) provides avenue for patients to access information, receive suggestions and support from other people who have same disease.
- It has created platform for seeking new health related jobs.
- Getting and giving health products and medical service referral.
- It has enhanced real time health information sharing, including online teaching in health related disciplines.
- It is utilized by various international organizations with activities or mandate involved in health care activities. Typical examples are discussed here:

Hazards and challenges of social media usage in health care industry

The hazards of social media usage by health care professionals and stakeholders include possibility of giving out poor quality of health information which can damage one's professional image, posting of medically unprofessional contents that can attract negative feedbacks which can , conveyance of sensitive information about person's health or breaching of patients' privacy alongside potentials for negative repercussions resulting from breach of patients' privacy and possible loss of professional medical practice licensing by defaulters of guiding regulations. This falls under the purview of Ethical Issues of Public health. Also, we have risk of cyber-bullying and crimes against children; all of which can attract offensive feedback that may hurt emotions (Claywell, 2018; Ahmad, 2021; Ventola, 2014). These are medical psychological issues with community health implications. Part of the causes for the temptation of disseminating poor quality information are due to poor training of some medical practitioners due to inadequate teaching, research and training manpower in some institutions , hurriedly assembled information that have not gone through filters of editorial work and peer scrutiny to establish and ascertain facts, infiltration by non-members of medically focused professional communities to disseminate hate based comments against the health professional

owners of such blogs or websites thereby afflicting the integrity and market potentials of such medical personnel; we have risk of fraud or identity fraud, time wasting, cyber-bullying and crimes against children; all of which can attract offensive feedback that may hurt emotions (Claywell, 2018; Ahmad, 2021).

For instance, a partly deranged or unstable person can easily access the open timeline or page of a healthcare providing consultant or clinic or eHealth facility on social media like Facebook, Twitter of Instagram to post false and misleading health disaster alerts, information or even maliciously blackmail targeted healthcare providers Miguel et al, 2017; (Marino, 2018). A typical example was during this mid-decade Ebola outbreak in West Africa and the misleading and appropriate information presented in the study by Fung et al. (2016).

Since management of patients and handling health disaster crisis situations are sensitive and demands patience on part of patient, communities involved and the healthcare practitioner or health disaster management team leader. Social media can provide easy platforms for inpatients to post abusive and inciting comments that could affect the psychology of the audience and trigger uproar by citizens or relations of patients being treated in situations that require calmness and patient. Instances were highlighted by Merchant et al (2017) ; Marino et al (2018) both of self harm and suicide inciting posts and Seltzer at al [18] on appropriate and misleading content posts on Zika Virus studied on social media.

In justifying this study, social media has beneficial uses a well as hazardous effects. These hazards can be a problem to users and health sector related professional. We want to explore its benefits in health sector, provide information and resources to users and create awareness on the hazards involved. As such, health care users must make effort to avoid the hazards and its pitfalls.

The health care sector is a sensitive industry to human life, welfare and existence. For instance, risks come from conscious or unconscious distribution of poor quality or wrong information that could damage one's professional image, breach patient privacy, violation of personal professional boundaries, and licensing or legal issues **(Ventola, 2014).** A supportive observation that tackles this problem stems from the fact that health institutions and organizations now issue guidelines to prevent these risks (Denecke et al, 2015). This is the digital age and we are of the opinion that this study blends with the growing usage of social media across widening fields and human activities.

The objectives of this study are to:

- ✓ Examine data of previous study for multi-purpose use of social media and its usage flexibility, for health purposes through scooping systematic review of systematic reviews.
- ✓ Proffer methods to avoid and overcome the hazards to individuals and organization using social media for health issues.
- ✓ Provide supportive information to users of social media in health industry.

Method

We engaged a systemic review conducted on previous studies mined between 10th July 2018, and 28th June 2021, using specific search words based on our inclusion criteria for selection into this study. The five Journals data bases were: PubMed, PubMed Central, BMC Journals and Mendeley-Elsevier.

We used specific search words based on our inclusion criteria for selection for this study, related to our study goals using three basic search phrases:

"benefits of social media".
"digital health".
"eHealth".

We selected our articles for further scrutiny; after we obtained records from our search words inputted into the databases, studied the titles, abstracts and contents of full works to screen for studies that met our inclusion criteria. We

selected articles for our scooping review and using adjusted PRIMSA guidelines as required for a scooping review.

From our database search, a total of 23 peer reviewed articles were identified out of which we selected ten (10) from PubMed, one (1) from PubMed Central, two (2) from BMC Journals, three (3) from BMC Public health, and seven (7) from Mendeley Elsevier (Table 1).

They were screened and thoroughly studied for usefulness to the objectives of this work, based on our inclusion criteria for this study. We extracted relevant information that we analyzed to present our tables in the result section, discuss, cite authors and collate our selected references. Also, we screened for accuracy for each set of data and information obtained, by cross checking other indexed journals and resource for information on same issues and set of data. Those found to be similar were retained for analyses, citing, discussions and referencing while others were left out.

Inclusion criteria for selection of article from database:

✓ Studies selected must have contained data from pool of studies of at least one year period.
✓ Only data available on PubMed (included PubMed Central), BMC Journals and Mendeley-Elsevier databases were mined, selected, and systematically reviewed and analyzed.
✓ Social media usage issues in health must directly reflect in abstract and body of article or issues connected to social media like eHealth, digital health, ICU Telemedicine or ICU Telepharmacy (which now have linkages with social media).
✓ Must provide data on number of studies selected in systematic review and/or meta-analyses by authors.
✓ A substantial part of the study must present data, analysis and discussions on subject matter in relation to benefits and/or hazards of social media.

Our target age groups:

✓ Adults and young adults. (More of Adults and adolescents use social media infrastructure than children. We did a scooping systemic review and did not focus on a particular age grade).
✓ Studies without age limit (General).
✓ Studies that focused on children or on only adolescents are not selected.

Analysis of data

For our scooping review, we utilized statistical descriptive analysis for percentages and summations, to assess results based on data retrieved from our final selections on articles from the databases.

Flow chart for this study:

➢ Examined concept of multi-purpose use of social media and its dynamism in terms of flexibility in its usage.
➢ Scooping examination for multi-purpose use.
➢ Databases search.
➢ Use of PRIMSA Guidelines to select articles based on inclusion criteria using specific search phrases.
➢ Selection of articles completed.
➢ Construction of Tables from data sieved from selected articles.
➢ Statistical descriptive analysis using Microsoft Excel.

(A) Analysis for multi-purpose use.

⌡ Analysis based on fields of study of selected articles.
⌡ Screens that searched for interventional and non-interventional studies

(B) Examination for flexibilities in use of social media in relation to its dynamism.

⌡ Beneficial and hazardous usage.
⌡ Flexibilities in diverse sub-fields within identified fields.
⌡ Discussion and Conclusions.

Article selection procedure according to the recommendations of the Preferred Reporting Items for Systematic Review and Meta-analysis (PRIMSA) is highlighted thus: (Moher et al, 2015).

Databases search	>>	By search strategy and search words
Article identification	>>	Article selection based on Title and Abstract
Selections	>>	Article selection for reading in full
Use of Eligibility criteria	>>	For Articles included in review
Inclusion in study	>>	n = 23

Results

Table 1: Databases searches, retrieved data and related information

Database	BMC	PubMed	Mendeley-Elsevier	PubMed Central	BMC Public Health
Retrieved	30,176	59,581	4400	1841	349
Related title	18	513	17	3	3
Final Selections on articles	2	10	7	1	3

Table 2: Selected articles and related information on each

Article/Study	**Target age group**	**Focus years from database search**	**Number of articles selected**	**Database searched**	**Emphatic on benefits of social media**	**Emphatic on Hazard of social media**
1. Ashfarian et al, 2014	No age limit	1946-2014	12	3	1	Np
2. Mita et al, 2016	No age limit	2000-2014	16	7	1	Np
3. Valimaki et al, 2016	No age limit	Inception on database records – 2015 (over 20years)	2	10	1	1
4. Cao et al, 2018	Adolescent and adults	2015-2016	26	6	1	Np
5. Marino et al, 2018	Adolescents and young adults	Inception of database to 2017	23	5	Np	1
6. Black et al, 2011	No age limit	1997-2010	53	4	Np	Np

7. Dumit et al, 2018	No age limit	Inception of database to 2017	6	4	1	Np
8. Strnad et al, 2018	No age limit	Inception of database to 2018	11	3	1	Np
9. Karner 2017	No age limit	Inception of database to 2017	57	7	1	Np
10. Morhead et al 2013	No age limit	2002-2012	98	10	1	1
11. Loranjo et al 2014	No age limit	1997-2012	12	5	1	1
12. Smailhodzic et al 2016	No age limit	Inception – 2015	22	2	1	Np
13. Hudnut-Beumler et al 2016	No age limit	2010 – 2015	27	3	1	Np
14. Klassen et al 2018	Young adults (13-35years)	1987 – 2017	21	7	1	Np
15. Guistini et al 2018	18-80 years)	2004 – 2018	42	5	1	1
16. Jeminiwa et al 2019	No age limit (3- 65 years)	Inception of database - 2018	15	5	1	Np
17. Sanchez et al 2020	No age limit	2014 – 2019	176	3	1	1
18. Widberg et al 2020	No age limit	2014 – 2019	12	6	1	Np
19.. Chen et al 2021	No age limit	2006 – 2020	*Na	12	1	1
20. Duettmann et a 2021	No age limit	2016-2020 (5years)	60	1	1	Np
21. Wongvibulsin et al 2021	No age limit	1990 – 2018	31	4	1	Np
22. Suarez-Lledo et al 2021	No age limit	Inception of database – 2019	69	4	1	1
23. Goodyear et al 2021	13 years plus, and young adults	2014 – 2021	18	5	1	1

1: Yes::Emphatic feature on Benefit or on Hazard in Abstract and Discussion present..
Np: no data on it seen- Emphatic feature for Benefit or for Hazards was not found in Abstract and Discussion was seen, due to not been part of goal of study (Not due to making of authors)..
*Na- data not accessible.

Table 3: Articles and fields of study involved

Articles	Filelds/Areas of study
Ashfarian et al, 2014	Public health and Nutritional Health
Mita et al, 2016	Preventive/ Curative healthcare
Valimaki et al, 2016	Mental health/Psychiatry
Cao et al, 2018	Preventive/ Curative healthcare
Marino et al, 2018	Mental health/Psychiatry
Black et al, 2011	Preventive/ Curative healthcare
Dumit et al, 2018	Preventive/ Curative healthcare
Strnad et al, 2018	Preventive/ Curative healthcare
Karner 2017	Public health /Nutritional Health
Morhead et al 2013	Health Communication
Loranjo et al 2014	Reproductive and Behavioral health
Smailhodzic et al 2016	Health Communication
Hudnut-Beumler et al 2016	Preventive/ Curative health
Klassen et al 2018	Public health / Nutritional Healthcare
Guistini et al 2018	Public health/Nutrition health
Jeminiwa et al 2019	Preventive/ Curative healthcare
Sanchez et al 2020	Mental health/Psychiatry
Widberg et al 2020	Health Communication
Chen et al 2021	Preventive/ Curative healthcare
Duettmann et a 2021	Surgical healthcare
Wongvibulsin et al 2021	Preventive/ Curative healthcare
Suarez-Lledo et al 2021	Mental health/Psychiatry
Goodyear et al 2021	Public health / Nutritional health

Summarized

- Analysis based on fields of study of selected articles. Flexibilities in diverse sub-fields within identified fields.

Health communication: 3 articles (13%);
Reproductive health: 1 articles (4.4%);
Preventive and curative health: 9 articles (39.1%);
Public health and health Nutrition: 5 article (21.7%);
Mental health and Psychiatry: 4 articles (17.4%);
Surgical health: 1 article (4.4%).

- Analysis based on benefits and hazards.

Benefits were observed in at least 21 articles (91.3% of all articles).
Hazards were observed in at least 9 articles (39.1% of all articles).

From our database search From our database search, a total of 23 peer reviewed articles were identified out of which we selected :ten (10) from PubMed, one (1) from PubMed Central, two (2) from BMC Journals, three (3) from BMC Public health, and seven (7) from Mendeley Elsevier. They were screened and thoroughly studied for usefulness to the objectives of this work, based on our inclusion criteria for this study. (Tables 1 and 2).

Discussion

The use of social media and social networking cut across several fields I the health industry (Table 3). Our analysis from Table 3 revealed usage in Health communication (3 selected studies), Reproductive health (one study), Preventive and curative medical care (9 studies), Public Health (1 study). Health Nutrition (4 studies), Mental health and Psychiatry (4 studies), Surgical healthcare (1 study). These are multiple areas in healthcare practice and care.

Several of the studies on our selection list clearly indicated benefits from use of social media (21 out of 23 studies)- in 2 of the studies we could not draw out clearly ascertained benefits for use of social media. This is not because the authors saw no benefits, but due to fact that it was not the main focus and scope in such studies (Table 2).

Twelve out of the pool of 23 studies on our selection list clearly emphasized hazards that come from use of social media .Again, it is not that the other studies saw no associated hazards, but related to scope or focus of such studies (Table 2).

In our analysis of the years of coverage of data used in each our 23 selected studies, the minimum was 1 year for Cao et al (2015) while the maximum was 49 years data coverage for Ashfarian et al (2014).

J Examination for benefits and hazards found from articles selected

We found flexible use of social media with beneficial values indicated in at least 21 articles (91.3% of all articles) and hazards expressed from at least 9 articles (39.1% of all articles).The titles of these articles can be seen from the reference section of this article as a guide on this. Then within the identified health fields we found flexibilities in diverse sub-fields in the health sector.

By implication, the use of social media has both health benefits and hazards and of various dimensions in different areas of our healthcare sector. We and other researchers can build-up on this study in future with more rigorous systematic review and analysis, with an inclusive risk of bias, since such studies will aim at getting closer to definitive observations on the concept of multi-purpose usage with flexibilities of dynamism in use of social media.

Another angle from which we can approach the concept of multi-purpose use of social media is the aspect of its positive (beneficial) or negative (non-beneficial/hazardous) sides from usage.

Screens that searched for interventional and non-interventional studies

In our searches, we came across interventional William et al, 2014; (Charles-Smith et al, 2015; Mita et al, 2016; Valimaki , 2016; Karner et al, 2017; Ashfarian et al, 2018; Cao et al, 2018; Strnad K et al, 2018) and non-interventional status of usages (Kumpel , 2015; Seltzer et al, 2015). The titles of these articles can be seen from the reference section of this article as a guide on this.

(C) Examination for flexibilities in use of social media in relation to its dynamism.

Beneficial and hazardous usage.

Social media has a *wide range of beneficial usage* in the health industry, cutting across various health practitioners' fields in the health industry; from usages by Clinicians, Nurses, Pharmacists, Vaccinologists, Public health practitioners, Medical educators, Health nutritionists and Social pharmacists among others.

Flexibilities in diverse sub-fields within identified fields.

- **In preventive and curative health care practice: (We present at least seven diverse areas or sub-fields)**

(1) The study by Wongvibulsin et al (2021) revealed ***use of social media in digital***

technologies used for traditional cardic rehabilitation (CR) with good potentials.

(2) The study by Jeminiwa et al (2019) revealed ***use of eHealth interventions in improving adherence to inhaled corticosteroids among persistent asthma patients*** with observation of effectiveness.

(3) The study by Chen et al (2021) revealed use of ***social media for various types of healthcare purposes***.

(4) The study by Hudnut-Beumler et al (2016) revealed use of ***social media for health promotion and prevention*** among Hispanics with promising results in its potential.

(5) Strnad et al, (2018) from their study observed an interventional usage for eHealth services in which ***Tele ICU* usage *for treatment of patients*** was associated with positive outcome in patient's outcome and disease management.

(6) The study by Udeh et al (2018) revealed that ***social media*** is associated with positive impact ***for survival benefits*** but cautioned that Tele ICU cover only a small proportion of ICU patients due to cost hindrances, though increasing in deployment. They (Udeh et al (2018) recommended that Tele ICU could fit into a hybrid model of care to complement efforts by high intensity ICU staff (Intensive care unit), though more interventions come from onsite physicians. Use of ICU Telemedicine has been connected with social media usage for beneficial means in healthcare industry.

(7) A study by Duettmann et a (2021) revealed use of ***social media to support surgical transplantation***, one of curative areas in medical care.

- **In Mental health and Psychiatry: (We present three diverse areas or sub-fields)**

(1) Valimaki et al, (2016) observed use of ***social media intervention in mental health issues*** with good impacts.

(2) Marino et al, (2018) revealed impacts of ***social media on psychological wellbeing*** from beneficial and harmful sides.

(3) Sanchez et al (2020) in a study that aimed at characterization of ***current use and efficacy of social media in recruiting participants for mental health research*** and revealed that it is economical, though with privacy concerns that should be worked on.

- **In Public health and Health Nutrition filed: (We present five diverse areas or sub-fields)**

(1) Guistini et al (2018) observed improved ***psychosocial and psychological functions*** from use of social media in Public health and medicine.

(2) Klassen et al (2018) revealed that use of social media enhanced ***some beneficial motivational outcomes*** in young adults as a positive attribute.

(3) Ashfarian et al, (2014) from their study observed **use of social media to reduce obesity** with significant although modest results.

(4) Kaner et al (2017) studied ***digital interventions for reducing harmful alcohol consumption*** from use of social media related devices, with good prospects.

(5) Goodyear et al (2021) examined ***impacts of social media on physical activity and dietary behaviors*** in young people and adults with some noticeable prospects.

- **In field of Health communication: (We present three diverse areas or sub-fields)**

(1) The study by Smailhodvic et al (2016) revealed that that social media positively affected and ***enhanced communication between patients*** and their ***relationship with health- care professionals*.**

(2) The study by Widberg et al (2020) examined the ***contributions of eHealth accessibility and patient participation in palliative health-care*** and

observed that patients and families **received *more information that enhanced patients' experiences and safety*.**

The key diverse areas under each of our marked fields have been italicized and in bold letters.**

From our observations through this study, ehealth, digital health, telemedicine and tele-diagnosis and tele-consultations now have connections to social media platforms, such as through the Telehealth app named *Telemedicine provider HealthTap.*(Beckers Hospital Review, 2021). For instance, have presence on Facebook, Twitter and Linked which clients, patients and health information seekers can connect to, from where they get redirected to their e-consultation rooms and clinics and health care centers, were they meet the health care practitioners who could be clinicians (medical doctors), specialist consultant clinicians, certified naturalist doctors like acupuncture practice experts and homeopathic doctors, e-nurses, public health advocacy consultants, epidemiologist and health based institutions/organizations in reporting of suspected outbreaks of infections to seek urgent interventions .

Generally, practitioners in the health care sector engaging social media should endeavor to conform to social media guidelines issued and set by health care institutions and professional organizations.

Conclusion

Social media is used in several fields of health and observed beneficial and harmful use, are clues for multi-purpose use of social media in healthcare issues. If in the health and life sciences sector, we keep improving on security checks and privacy features of our newly developed or recent apps that we put to use for operating our social media platforms for health purposes, we can better protect users' privacy and confidential information, with supportive screening of contents being placed on social media, for quality. This can help us optimize its beneficial uses.

We suggest strengthening of controls that check self harm, suicidal materials and negative information posted on social media, creating awareness on were the public can find authentic information on health issues and how to avoid being affected during disasters requiring emergency responses, and continued training of Psychiatrists and Psychologists on optimized psychotherapy to support individuals who fall prey to indulgence in activities detrimental to their health.

Despite observed hazards in use of social media, there are areas and avenues from which we can continually optimize the benefits from use of social media for various health purposes across healthcare intersects from clinical medical care, pharmaceuticals and biotechnology medical-care products, health nutrition based foods derived from agricultural-sector, technological devices for health care, and health communication.

Most good products and purposes come with side-challenges, which can be harmful of hazardouss. This is what the social media is experiencing, and it ripples onto the health and life science sector.

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