Tech Science Press

Media and Mental Health Literacy: Do Mediated Interventions Enhance Mental Health Awareness? Implications and Policy Recommendations

Arooj Arshad[1,*], Mian Ahmad Hanan[2,*], Noshina Saleem[3], Saima Farzooq[4] and Remsha Fatima[5]

[1]Institute of Applied Psychology, Punjab University, Lahore, Pakistan
[2]Faculty of Media and Communication Studies, University of Central Punjab, Lahore, Pakistan
[3]Institute of Communication Studies, Punjab University, Lahore, Pakistan
[4]Department of Psychology, University of the Lahore, Lahore, Pakistan
[5]Shalamar Medical and Dental College, Lahore, Pakistan
[*]Corresponding Authors: Arooj Arshad. Email: arooj.arshad@soca.uol.edu.pk;
Mian Ahmad Hanan. Email: hanan_mian@hotmail.com

Abstract: In the current digital era, public health campaigns using media has been very successful in giving knowledge and changes the attitudes of people. But till now scarce literature is available related to media campaigns about mental health. In this study Pre-Post Quasi Experimental Design using vignettes as a data collection measure were employed. The participants were categories in to experimental (n = 138) and control (n = 134) groups having 18–55 years of age to evaluate the efficiency of media mediated interventions using social media campaign in increasing Mental Health Literacy (MHL). The results from non-parametric chi-square test indicated that mental health literacy significantly increases at post assessment level in participants belonging to experimental group, while level of MHL remains same in control group participants. The current study was unique because it discussed the efficacy of social media mediated interventions, which creates awareness and infused information among general public regarding the underexplored and neglected area of mental health.

Keywords: e-Mental health literacy; Web-based Interventions; social media campaigns

1 Introduction

The advantages of general public health campaigns through media about the learning of physical illnesses are broadly acknowledged, however, information about mental clutters (mental health literacy) has been generally ignored. Moreover, inability to recognize a mental illness is a primary concern, because it then limits the individual's ability to search for the appropriate professional help and treatments of mental illness [1]. Media can play a significant role in creating awareness about mental health issues and its related stigmas. Hanan [2] argued that result oriented communication campaigns educating the general population effectively by providing; a forum of debate and communication, offering a supportive environment for behavior change, informing about the services available in the area of target population area, focusing on issue and setting agenda, motivating opinion leaders for social mobilization, and capacity building and emphasis on equal distribution of resources, partnerships with the government departments and NGOs and media organization. The media images have far-reaching consequences for people suffering from mental illness. The negative coverage of mental health illness usually damages the patients' self-esteem, help-seeking behaviors, medication adherence and recovery. Mental health advocates denunciate the media for endorsing stigma and discrimination toward people suffering from a mental illness. However, several studies maintained that the media plays an important role in assisting the people with mental health issues by starting public debate, opposing the public biases, and presenting the human interest stories, about people

with mental illness [3]. Conway et al. [4] claimed that the fifth major contributor to the global burden of disease is mental illness. The estimated cost of mental diseases is up to US $2.5 trillion in 2010; and will be doubled by 2030. Therefore, media campaigns especially social media interventions are effective tool to bring change in general populace regarding mental health problems.

The core objective of WHO's Comprehensive Mental Health Action Plan for 2013–2020 is making an effective information system that increase its monitoring capacity pertaining to mental health illness [5]. The use of social media in mental illness is offering exciting possibilities for improvement in the community and individual levels. At present, social media is widely used as a data source in the political, business, policy and health monitoring contexts. Social media provides a platform to people with serious mental illness to connect and share information related to their problems. Gowen et al. [6] conducted a youth survey and found that those suffering from mental illness were more interested to express personal views, build friendships and connect with people through blogging, Facebook and other online networks. Kessler et al. [7] pointed out that a serious mental illness is a major cause of disability and is related to debilitating symptoms of anxiety, low motivation and depression. Moreover, it resulted in feelings of hopelessness and helplessness that leads to social marginalization, increase the risk of substance use, unemployment, poverty, homelessness, hospitalization and even suicide [8,9,10,11]. Furthermore, another survey revealed that people with schizophrenia showed similar pattern of online social connections like adults without mental illness [12]. Naslund et al. [13] conducted a qualitative study and reveled that social media seemed to be a useful way to share personal stories, steps for coping with day-to-day challenges, get hope and support from care givers and people having mental illness. Moreover, social media connectivity reduces their aloneness. Kummervold et al. [14] established that online forums and chat rooms, support groups provide a venue for discussion on sensitive mental health condition. It is maintained that people living with schizophrenia are seeking and sharing information related to their symptoms and medications with people with similar mental health conditions [15].

PTSD and other mental illnesses diagnosis are based on self-reporting or testimony from friends and relatives [16]. With the advent of online social networking people pattern of communication and interaction has been totally changed. It is not yet clear regardless of whether a portion of these progressions influence ordinary human conduct and create any mental issue (Depression). Some studies suggested that long term use of social media, for instance, Facebook, may cause depression, while other studies claimed that it might be linked with low self-esteem, among children and youth. Other researches maintained that the use of social networking sides has positive impact on users especially increase their self-esteem and confidence [17].

On the other hand, about 1% of the population of world is suffering from Bipolar disorder (BP). It is related to mood swings, depression and mania that why it required a high rate of hospitalizations and psychosocial treatment. Moreover, substance use and suicide are common among these patients [18]. Also, it is maintained that the early diagnosis reduces the full development of the bipolar disorder. In addition, they revealed that seven out of ten people with bipolar disorder are misdiagnosed at early stage and around 30 percent people committed suicide. Moreover, people suffering from bipolar disorder extensively use social media for sharing information and experience, seeking guidance related to their health conditions through Facebook and Twitter [19]. Some studies suggested that, media coverage of traumatic incidents increase anxieties, keeping or contributing to Post Traumatic Stress Disorder (PTSD) [20,21]. The PTSD was higher amongst those who have more media exposure related to 9/11 attacks anniversary as people having magnified media exposure instead of personal direct exposure showed a high level of traumatic symptoms among them [22]. Lemyre et al. [23] pointed out that different media present assessment of risk towards mental illnesses in different ways as the mainstream media provide more objective and unbiased statement about the threat while, social media has a more direct, personal impact on assessments of risk because people using social media share their own personal stories which people thing are more related with themselves therefore they easily relates with social media stories and appraisal of stress following PTSD [24].

Moreover, people with mental illnesses associated issues and stigmas with each other on daily basis, as people suffering from obsessive-compulsive disorder (OCD) are often underestimated on social media,

as media often portrays OCD as a source of comic relief [25]. However, other mental illnesses are rarely portrayed with such flippancy on social media, the reason being, comedy relies on cognitive dissonance which means that somebody laugh at things which creates disorder and then quickly and with happiness that disorder resolves as suggested by incongruity theory of humor [26]. This explains that OCD equally affects men and women. The social media audiences would view it as a female condition due to its closeness with depression and anxiety. Similarly, a study about Gender anxiety disorder (GAD) maintained that boys spending more time playing video games than girls while girls spending more time talking on the phone compare to boys. Moreover, media use acted as a protective factor for boys. Boys who spent relatively more time playing video games and watching television had the lowest levels of anxiety, especially those from alcoholic homes, while the opposite trend emerged among girls [27].

Individuals use various social media performs to maintain and expand their social circles. Individuals get different social experiences than face-to-face conversations through social networking sites, chat rooms, and instant messaging services [28]. Social media interactions help user to overcome anxieties in three ways. (1) It potentially increased anonymity and de-individuation. (2) The individual appearance has become irrelevant, and (3) individual can develop responses without the any pressure that he/she may confront in face-to-face conversation [29]. According to social compensation hypothesis the internet is beneficial for those having problems in face to face communications, as, individuals who are experiencing higher levels of social anxiety are more open to self-disclosure in online than in face to face communication. However, the social anxiety was associated with lower quality of life, while, depression is common among individuals those frequently communicated online. Therefore, the individuals have social anxiety and panic disorder use internet as an alternative to face-to-face communication. This approach may result in poorer well-being [30].

Furthermore, it is observed that up to 5% of the population in their life faced Panic Disorder. It is often disabling, especially when complicated by agoraphobia, and is associated with substantial functional morbidity and reduced quality of life. This disorder is costly for a person and society because it increases burden on health care, cause absenteeism and reduces productivity at workplace [31]. Social media users maintain greater control in their interactions with other people because they can choose their own level of engagement compare to face-to-face encounters. This is important for people with severe mental disorder because social media offer them to overcome the challenges related to information processing, social anxiety, or social interactions [32]. Some studies suggest that women with anorexia nervosa (AN) can be affected by media exposure [33]. For instance, after watching idealized women bodies on the covered pages of fashion magazines, women with AN substantially overestimate their body sizes contrasted and healthy controls. At the point when presented to thin body perfect pictures, patients with AN show more noteworthy tension than controls, and media pictures make more actuation in mind districts related with body disappointment/weakened interoceptive consciousness of one's body size in ladies [34].

There is a need to educate and aware people that like physical illnesses, mental illness can also be cured and dealt with and media interventions. Hanan et al. [35] labeled media messages as 'Social Vaccine' in behavior change because awareness through mass media lead people to consult health service providers and creates general to specific awareness regarding disease and its prevention. It is argued that the combination of Interpersonal and mass media campaigns create motivation at individual and community or societal levels that lead towards a positive behavior change and de-stigmatizing the issues related to public health campaigns [36]. In addition, Hocking [37] pointed out that media not only has power to de-stigmatize the issues pertaining to mental health but also provide the support to patient family to copping up the problems.

Theory of reasoned action [38] suggested that when an individual considers a certain behavior as positive, he or she will intend to perform it. Thus, for people to take mental illnesses like how physical illnesses are taken, they need to be well-aware of that illness, which would change their behavior towards mental disorders and people dealing with it. Yzer [39] also elaborated that attitudes are resolute the person's belief about the consequences of executing certain the behavior, weighted by his/her evaluation of these consequences. The important strategies in this regard could be by making improvements in "mental health literacy" using the power of media campaigns that not only aims at providing health literacy but attention should also be given to design ways to break stigmatizations that act as a continuous hindrance in the way

of recognition and prevention. As myths and misguided judgments about mental illnesses are consistently strengthened by cliché and regularly ruinous media pictures for instance, these individuals are only delineated as rough, and erroneously and unavoidably described as having a "split identity" [40]. At that point these cliché dispositions towards individuals and their families with mental ailments experienced loneliness, pain and isolation.

As these myths are endorsed by media, resultantly, numerous individuals are hesitant to look for help, more averse to coordinate with treatment, and slower to recuperate confidence and certainty regarding recovery from mental illnesses. There are different strands of proof showing that changing information and convictions about mental illness will impact conduct [41]. It is imperative, in this manner, for clinicians and other healthcare laborers to consider that disgrace and its related preference frame as an undeniable hindrance to recovery from mental disorders and may even be deadly.

Furthermore, evidence proposes that some time before an individual sees a relevant health professional, 'lay analyses' are made by people, relatives, companions, and colleagues with respect to the early indications of psychological sickness [42]. For what reason do individuals neglect to get proficient help? There are a few variables included, yet one of the vital ones is absence of acknowledgment by the individual that he or she has a psychological issue [43,44]. The lifetime danger of building up any psychological issue is almost 50%. Acknowledgment of mental issue is basic as it impacts a man's disposition and conduct towards those affected by mental ailments [45].

So, there is a constant need to use various communication mediums and campaigns that can create awareness among larger audience about mental illnesses just like physical illnesses, for instance, HIV/AIDs prevention and breast cancer media campaigns etc. Hence, media interventions would encourage the direct training projects about psychological wellness, and in addition tailor specific psycho-education suitable to every individual. Hence, the basic purpose of this study is to evaluate the efficiency of social media interventions in pre and post level of mental health literacy (General Anxiety Disorder (GAD), Obsessive Compulsive Disorder (OCD), Depression, Panic Disorder, Post-Traumatic Stress Disorder (PTSD), Social Anxiety, Anorexia Nervosa (AN) and Bipolar Disorder (BD)) between experimental and control group participants.

2 Method

2.1 Participants & Procedure

After getting approval from the ethical board of review committee, the researchers visited four private and four public universities of Lahore, Pakistan for recruiting participants. Initially, 400 participants were contacted through random sampling from different higher education institutes of Lahore, Punjab, Pakistan, between the age range of 18–55 years and they were categorized into experimental/intervention and control group. Out of which, 320 participants were showing consent to participate in this study and from these participants, 48 participants were excluded because of incomplete forms and some of them were not present on both days of assessment (pre-post testing). Of these drop-outs, 62 participants who were excluded from the study were in the experimental group while 66 were in the control group.

Hence, 138 participants were in experimental group within the age of range 18 to 55 yeas (M = 32.23; SD = 1.43) and 134 participants were in control group between 18 to 55 years of age (M = 30.12; SD = 1.93). The experimental group consisted of 47% males and 53% females and control group comprised of 42% males and 58% females. A chi-square analysis performed on experimental and control group that revealed non-significant difference between both subgroups.

2.2 Measures

Mental health is the absence of mental health disorders and having a mental health literacy means that people are able to recognize the particular mental disorder. So, for this purpose, vignettes were used that describes the situation and scenarios of individuals having mental disorders. The more the individual could

identify the correct disorder from the given vignette, the more he/she is considered literate regarding mental health.

For the current research, eight mental disorders including were taken to represent overall level of mental health and these disorders along with their vignettes were as follows:

a) Vignette I (GAD): Ayesha is 45 years of age and she is frequently stressed. She stresses a lot over her activity execution, her youngsters' prosperity, and her connection with men. Moreover, she stresses over an assortment of minor issues. For example, getting to arrangements on schedule, keeping her home clean and keeping in touch with loved ones. It's stories Ayesha longer than would normally be appropriate to achieve undertakings since she stresses over creation choices. Ayesha experiences difficulty keeping around evening time and she finds that she is depleted during the day and bad tempered with her family.

b) Vignette II (OCD): Ali was experiencing many thoughts of bad things happening into his head. For instance, he has unobstructed thoughts that he went out will burst into flames. To feel good, he drives back home to watch that the stove is off. Ali additionally accepts there are germs on things and that contacting them will make him wiped out. In this way, he washes his hands until they feel 'perfectly'. Ali feels like his considerations and inclinations have power over him and goes through quite a bit of his day attempting to forestall terrible things.

c) Vignette III (Depression): Qasim's parents recently separated after fighting a lot. His teacher met with his mom to talk about how he's doing in school over the past nine months. Qasim's grades have gotten worse and was late for school a lot. Qasim said that he had been feeling tired all the time and that it is tough for him to fall asleep at night and this is why it is hard for him to get up in the morning. His mom said that she thought he just isn't eating enough and Qasim has lost a lot of weight over past few months. About his grades, Qasim said he wanted to do well but he just couldn't pay attention or think as well as before. The teacher said they thought it would be good for Qasim to start playing soccer again as he had always seemed to have a lot of fun playing soccer. Qasim said that he just wasn't really interested in soccer or anything else lately.

d) Vignette IV (Social Anxiety): Alina is a bright student studying in a prestigious University; but her grades do not justify her hard work. Her father has been really worried about her academic performance and made a visit to her teacher. The teacher informed Alina's father that although she has great ideas in her mind, she is unable to speak about them or express them in front of a gathering. Not just this, but she was also not present on the days when she's supposed to present in the class. This came as shock to her father as Alina's is a very well-spoken child and intelligent girl. On confronting Alina about it, she told her father that speaking in front of people gives are goosebumps and sends shivers down and she cannot control it.

e) Vignette V (PTSD): Ahmed and Usama, both 27 years old, were childhood best friends. They met a car accident in which Usama passed away while Ahmed was admitted to the hospital for 2 months. It's been 5 months since his recovery; but he has still been acting weird as said by his family and friends. Ahmed stays quiet most of the time and avoids any discussion related to his health. He has furthermore isolated himself and his work life is going down the hill. He avoids any such place where he and Usama used to hangout. His mother is so worried that she has started sleeping with him at night as most of the times, Ahmed wakes up from nightmares in which he is re-experiencing the accident and then is unable to go back to sleep. This has had an impact on Usama's career as well as relationships.

f) Vignette VI (Panic Disorder): Kinza was in her office getting ready for a significant work introduction when out of nowhere she felt a serious rush of dread. At that point the room began turning and she believed she is going to hurl. Her entire body was shuddering, and she was unable to recover, and her heart was hammering out of her chest. She grasped her work area until the scene passed however it left her profoundly shaken. At that point three weeks after the fact, she experienced a comparative circumstance while heading to her sister's wedding. Which is the reason she has begun to evade open get-togethers and is remaining at home after work with no public

activity. She likewise reuses to ride the lift up to her twelfth-floor office out of dread of being caught in the lift.

g) Vignette VII (Anorexia Nervosa, AN): Zainab is a 28 years old housewife. She looks after her family and is very much concerned about her body image. She does workout at gym and home, both on daily basis (3–4 hrs./day). Zainab tells her friends that she burns off all the calories she takes during the day, which are approximately 800–900 calories, already lower than what she should consume. Her BMI tells that she is underweight but according to her she needs the perfect size '0'. Zainab's husband believes her thin appearance, dizziness and fatigue is not normal and has something to do with her excessive workout, low calorie intake and obsessiveness to appear thinner and thinner day by day.

h) Vignette VIII (Bipolar Disorder, BD): Uzair is a 34 years old, single parent of two children. He likes playing with the kids and often takes them out for shopping. His kids have been really disturbed from the past year. They think Uzair deals with severe mood swings, which they are unable to understand. It makes difficult for the kids to know what their father expects from them. From being energetic and happy at one moment but being sad and hopeless at the other moment is quite confusing. With that the children claim that they often find him crying uncontrollably and being indecisive. Uzair fails to realize if there is anything suspicious with his health because there are days when he felt completely normal too.

The participants were inquired about the following; a) whether they are able to identify the correct disorder from the list of eight disorders separately from each of these vignettes on the basis of their knowledge about these mental disorders, b) if yes does he/she recommend that person for some help? c) to whom he/she would recommend that person to, either a physician, a psychologist/psychiatrist, to a friend etc. The designed vignette also collected basic information like, age, gender, educational background, and lastly the emails/Facebook Ids of participants were also taken so that they could be re-contacted for intervention using social media campaign.

2.3 Intervention

Social media intervention was developed based on the existing literature available on e-mental health literacy. For this purpose, Facebook page "time to untie" was developed and experimental group participants were instructed to join this group. The information on this page was provided with the help of appropriate posts and three documentaries that were specially designed for the current study and the whole campaign run around 4 weeks. Two disorders were discussed per week. Introduction, symptoms and recommendations were given about the mental disorders to the participants using this Facebook page.

A series of three documentaries that were made for this social media campaign resolves around the following central themes, these includes: 1) the portrayal of media about mental health stigma and the actual depiction of people suffering from mental health issues so to break public overall stigma associated with people suffering from mental health disorder; 2) this awareness documentary is about the comparison of physical and mental health illnesses on the basis of their severity and symptoms knowledge. In addition, it is normal to have some mental disorder just like the physical diseases (fever, tuberculosis), as the physical illnesses varies in its intensity that is fever is less severe than having cancer or TB, same is the case with mental disorders like anxiety and phobias are less severe than Schizophrenia or personality disorders; 3) this documentary is about the awareness regarding symptoms of different disorder with the help of mental health patient's true stories along with its proper treatment and cure to aware public regarding its possible treatment and recovery chances just like physical diseases.

Measures were administered 1 week before the intervention (pre-intervention) and 4 weeks after the mental health literacy intervention (post-intervention). Once the pre-testing was completed, participants were redirected to the social media campaign being run for e-Mental health literacy. The campaign was designed for 4 weeks in total, in such a way that each week was dedicated to two mental disorders. When the social media campaign was completed and knowledge regarding mental disorders was delivered to the participants, they were re-contacted for post testing. Both groups were asked to fill in the vignette again

using online google form link. For evaluating results, SPSS statistical software (Statistical Package for the Social Sciences) was used.

3 Result

The data from the current study were analyzed with the help of statistics using IBM SPSS, 21. These results from chi-square analysis were testing using alpha level of $p = 0.05$, and the results were given as follows:

Table 1: Showing the difference between Control and Experimental group on pre and post intervention level of Mental Health Literacy among people

S#	Mental Disorders	Intervention Group (n = 138)		χ^2	Control Group (n = 134)		χ^2
		Pre-Intervention	Post-Intervention		Pre-Intervention	Post-Intervention	
1	GAD	14	97	111.52***	12	22	15.34
2	OCD	14	85	151.02**	10	12	11.21
3	Depression	22	86	69.77***	30	28	1.31
4	Social Anxiety	28	82	115.12***	28	36	2.32
5	PTSD	16	78	117.77**	13	18	2.07
6	Panic Disorder	10	95	108.25**	7	9	1.17
7	AN	20	91	107.73**	19	22	1.65
8	BD	8	83	111.68**	7	5	1.02

Note. χ^2 = *Chi-square, **p<0.01, ***p<0.001.*

There were considerable differences found in pre and post intervention level of mental health literacy related to eight psychological disorders between experimental and control group. As the percentages revealed that participants belonging to experimental group shows significant improvement in the level of correct recognition of disorder compared to control group, however in order to make comparisons on percentages, non-parametric, Chi-square test was conducted and the findings revealed that pre and post intervention group assessment were showing significant differences on the level of correct recognition of disorder while control group pre-post intervention assessment revealed no change in the level of recognition of eight disorders representing overall level of mental health.

Furthermore, the results from the descriptive statistics regarding recommendation of professional help seeking attitude for those patients suffering from mental health issues were not showing promising significant differences among pre and post testing of both group participants. As the findings revealed that for both GAD and OCD patients in pretest 24% and in posttest 36% participants recommended that they should seek professional help from psychologists and mental health professionals. were help seekers. In the same way for depression this ratio was 29% and 31% respectively, while 13% participants were identified that recommend professional help in pretesting for SA whereas in posttest this percentage was 21%. Same trend follows in PTSD, Panic, Anorexia Nervosa and Bipolar disorder, during pretest 13%, 11%, 13%, and 16% participant recommends those patients for professional help seeking from psychologists, on the other hand in posttest this percentage was 28%, 26%, 20% and 24% respectively. Although the percentages for recommendation of professional help from mental health professionals and psychologist were not showing much differences but still it makes clear differences on the level of professional help recommendations in a country where going to mental health service providers was considered as a sign of severe abnormality and foolishness, and those seeking help from these professionals are marginalized from the larger society. This in turn revealed that mental health literacy using media mediated messages was effective, as people start realizing the importance of mental health service providers worth in treating mental issues just like general physician worth worldwide.

4 Discussion

This research was conducted to evaluate the efficiency of Web-based interventions using social media (Facebook) messages in changing attitude of target population regarding mental illnesses. The results showed that there was a significant increase in the knowledge and awareness of people regarding the eight mental disorders (General Anxiety Disorder, Obsessive compulsive Disorder, Depression, Social Anxiety, Post-traumatic Stress Disorder, Panic Disorder, Anorexia Nervosa and Bipolar Disorder). This finding of the current study is consistent with researches indicating that social media campaigns do bring a change in attitude and behavior of people following it [46].

Similarly, these current study findings are also consistent with the Wetterlin et al. [47] study which argued that Web-based interventions are helpful in spreading knowledge about mental disorders. In addition, Doherty et al. [48] revealed that the Web-based literacy regarding depression reduced stigmatization among people. Similarly, Web-based interventions were more effective as compared to non-Web-based interventions in the health care sector and these interventions showed improvement in getting the specified knowledge and/or behavior change among target population. Moreover, this intervention was highly successful in altering body shape perceptions, slower health decline rate and in asthma care [49].

Likewise, the findings of the current study also indicated that social media messages can bring out a significant change in the society by molding an individual's perception about mental disorders. The social media campaigns are also effectively addressing the stigmas associated with mental health and improved mental health literacy rate among the general populace. In various countries community campaigns have been launched to improve aspects of mental health literacy [50]. For instance, since 2000, a national government funded depression initiative called 'beyond blue' had been taken in Australia, whereas in Germany, Nuremberg a community campaign was run from 2001 to 2002 called 'Alliance Against Depression' while in Norway, Treatment and Intervention in Psychosis (TIPS) program was run for providing community based awareness in public. Nonetheless the purpose of all these campaigns and their significant results provides enough evidence to justify further efforts in this area in other countries as well especially in developing countries [51].

As for now, this research was unique in its treatment of spreading awareness regarding mental health literacy using social media, there was a more need of these kind of researches and campaigns run on national level using community based funded programs that should give more emphasis on changing actions that the public takes to benefit mental health. As it is the eventual goal of any society that a community with mental disorders should themselves take initiates for seeking professional help, where they could receive appropriate need based treatment, along with the community that supports people with mental disorders in their hard times, so that it overalls make a larger mental health literate community where people providing mental health services and those suffering from mental health concerns merits public support.

Beside all the beneficial impacts of this study, certain limitations were also noticed while conducting this research, for instance; this study finding can only be generalized to the population that uses social media actively, hence the non-users and those that lacks the social media facilities especially from those belonging to remote areas cannot be entertained so future researchers should include that sector of population too while planning further research related to this topic. In Pakistan more researches should be done in this area with the diverse age groups, so that the findings and the results may be generalized to the larger set of populations. Furthermore, there is a need to introduce mental disordered related issues as part of curriculum to create awareness among general population. Moreover, in future Web-based studies other social media platforms and diverse population groups should be included for more generalized results.

5 Conclusion

Nowadays, as media is growing will full speed, such Web-based interventions can be used as a powerful tool to literate public regarding mental disorders by overcome stigmas attached to them through social media campaigns, as the results from the present study revealed that before Web-based intervention, there was moderate recognition of mental health disorders. After Web-based intervention with the help of social media

campaign, media literacy rate largely improves. These findings will contribute much to the mental health literacy literature, regarding the efficacy of Web based interventions in enhancing mental health literacy, it will also guide the future media practitioners to develop and broadcast realistic content related to mental disorders, besides provide recommendation to government for running larger Web based mental health campaigns on national level. In addition to this, the current study findings will open new ventures for future researchers to incorporate other social media platforms besides Facebook for Web-based intervention so to cater the more diverse population for better generalizability. Moreover, the study findings will give important recommendations to the media houses to have a check on the broadcast of such content that marginalized and stigmatized mental health patients as being aggressive, to be restrain in cages thus making them unproductive strata of the society and leading people to have a more hostile attitude towards them.

References

1. Jorm, A. F., Christensen, H., Griffiths, K. M. (2006). The public's ability to recognize mental disorders and their beliefs about treatment: changes in Australia over 8 years. *Australian and New Zealand Journal of Psychiatry, 40(1),* 36–41, DOI: 10.1080/j.1440-1614.2006.01738.x.

2. Hanan, M. A. (2009a.). HIV/AIDS prevention campaigns: a critical analysis. *Canadian Journal of Media Studies 5(1),*129–158.

3. Stuart, H. (2006). Media portrayal of mental illness and its treatments. *CNS Drugs, 20(2),* 99–106.

4. Conway, M., O'Connor, D. (2016). Social media, big data, and mental health: current advances and ethical implications. *Current Opinion in Psychology, 9,* 77–82.

5. Lane, J., Stodden, V., Bender, S., Nissenbaum, H. (Eds.) (2014). *Privacy, big 228 data, and the public good.* Cambridge University Press.

6. Gowen, K., Deschaine, M., Gruttadara, D., Markey, D. (2012). Young adults with mental health conditions and social networking Websites: seeking tools to build community. *Psychiatric Rehabilitation Journal, 35(3),* 245.

7. Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C. et al. (2003). Screening for serious mental illness in the general population. *Archives of General Psychiatry, 60,* 184–189.

8. Dixon, L. (1995). Effects of homelessness on the quality of life of persons with severe mental illness. *Psychiatric Services, 46,* 922–926.

9. Corrigan, P. W. (2004). How stigma interferes with mental health care. *American Psychologist, 59,* 614–625.

10. Folsom, D. P., Hawthorne, W., Lindamer, L., Gilmer, T., Bailey, A. et al. (2005). Prevalence and risk factors for homelessness and utilization of mental health services among 10340 patients with serious mental illness in a large public mental health system. *American Journal of Psychiatry, 162,* 370–376.

11. Pompili, M., Lester, D., Innamorati, M., Tatarelli, R., Girardi, P. (2008). Assessment and treatment of suicide risk in schizophrenia. *Expert Review of Neurotherapeutics, 8,* 51–74.

12. Spinzy, Y., Nitzan, U., Becker, G., Bloch, Y., Fennig, S. (2012). Does the Internet offer social opportunities for individuals with schizophrenia? A cross-sectional pilot study. *Psychiatry Research, 198(2),* 319–320.

13. Naslund, J. A., Grande, S. W., Aschbrenner, K. A., Elwyn, G. (2014). Naturally occurring peer support through social media: the experiences of individuals with severe mental illness using YouTube. *PLoS One, 9(10).*

14. Kummervold, P. E., Gammon, D., Bergvik, S., Johnsen, J. A. K., Hasvold, T. et al. (2002). Social support in a wired world: use of online mental health forums in Norway. *Nordic Journal of Psychiatry, 56(1),* 59–65.

15. Haker, H., Lauber, C., Rössler, W. (2005). Internet forums: a self-help approach for individuals with schizophrenia? *Acta Psychiatrica Scandinavica, 112,* 474–477.

16. De Choudhury, M. (2013). Role of social media in tackling challenges in mental health. *Proceedings of the 2nd International Workshop on Socially-Aware Multimedia, SAM '13, pp.* 49–52. New York, NY, USA: ACM

17. Pantic, I. (2014). Online social networking and mental health. *Cyberpsychology, Behavior and Social Networking, 17(10),* 652–657.

18. Taylor, L., Faraone, S. V., Tsuang, M. T. (2002). Family, twin and adoption studies of bipolar disease. *Current Psychiatry Reports, 4(2),* 130–133.

19. Huang, Y. H., Wei, L. H., Chen, Y. S. (2017). Detection of the prodromal phase of bipolar disorder from psychological and phonological aspects in social media. arXiv Preprint arXiv:1712.09183.

20. Bonanno, G. A., Brewin, C. R., Kaniasty, K., Greca, A. M. L. (2010). Weighing the costs of disaster: consequences, risks and resilience in individuals, families, and communities. *Psychological Science in the Public Interest, 11(1),* 1–49.

21. Marshall, R. D., Bryant, R. A., Amsel, L., Suh, E. J., Cook, J. M. et al. (2007). The psychology of ongoing threat: relative risk appraisal, the September 11 attacks, and terrorism-related fears. *American Psychologist, 62(4),* 304.

22. Bernstein, D. A., Carlson, C. R., Schmidt, J. E. (2007). Progressive relaxation. *Stress Management, 88(2),* 23–34.

23. Lemyre, L, Johnson, C., Corneil, W. (2010). Psychosocial considerations for mass decontamination. *Radiation Protection Dosimetry, 142,* 17–23.

24. Mineka, S., Zinbarg, R. (2006). A contemporary learning theory perspective on the etiology of anxiety disordersd. It's not what you thought it was. *American Psychologist, 61,* 10–26.

25. Pavelko, R. L., Myrick, J. G. (2015). That's so OCD: the effects of disease trivialization via social media on user perceptions and impression formation. *Computers in Human Behavior, 49,* 251–258.

26. Cefalu, P. (2009). What's so funny about obsessive-compulsive disorder? *PMLA, 124(1),* 44–58.

27. Ohannessian, C. M. (2009). Media use and adolescent psychological adjustment: an examination of gender differences. *Journal of Child and Family Studies, 18(5),* 582–593.

28. McKenna, K. Y. A., Bargh, J. A. (2000). Plan 9 from cyberspace. The implications of the internet for personality and social psychology. *Personality and Social Psychology Review, 4,* 57–75.

29. Valkenburg, P. M., Peter, J. (2009). Social consequences of the internet for adolescents: a decade of research. *Current Directions in Psychological Science, 18,* 1–5.

30. Weidman, A. C., Fernandez, K. C., Levinson, C. A., Augustine, A. A., Larsen, R. J. et al. (2012). Compensatory Internet use among individuals higher in social anxiety and its implications for well-being. *Personality and Individual Differences, 53(3),* 191–195.

31. Roy-Byrne, P. P., Craske, M. G., Stein, M. B. (2006). Panic disorder. *Lancet, 368(9540),* 1023–1032.

32. Schrank, B., Sibitz, I., Unger, A., Amering, M. (2010). How patients with schizophrenia use the Internet: qualitative study. *Journal of Medical Internet Research, 12(5),* e70.

33. Friederich, H. C., Uher, R., Brooks, S., Giampietro, V., Brammer, M. et al. (2007). I'm not as slim as that girl: neural bases of body shape self-comparison to media images. *Neuroimage, 37(2),* 674–681.

34. Friederich, H. C., Brooks, S., Uher, R., Campbell, I. C., Giampietro, V. et al. (2010). Neural correlates of body dissatisfaction in anorexia nervosa. *Neuropsychologia, 48(10),* 2878–2885.

35. Hanan, M. A., Saleem, N., Khawar, N., Arshad, A. (2019). Media and behavior change: effectiveness of public health campaigns in Pakistan. *Isra Medic al Journal, 11(4–B),* 323–326.

36. Hanan, M. A. (2009b). Interpersonal and mass communication for HIV/AIDS prevention: an integrated approach. *Journal of Development Communication, 20 (1).*

37. Hocking, B. (2003). Reducing mental illness stigma and discrimination—everybody's business. *Medical Journal of Australia, 178(9),* S47.

38. Ajzen, I., Fishbein, M. (1975). *Belief, attitude, intention and behavior: an introduction to theory and research.* MA: Addison-Wesley.

39. Yzer, M. (2012). The integrative model of behavioral prediction as a tool for designing health messages. *Health Communication Message Design: Theory and Practice,* 21–40.

40. Manwell, L. A., Barbic, S. P., Roberts, K., Durisko, Z., Lee, C. et al. (2015). What is mental health? Evidence towards a new definition from a mixed methods multidisciplinary international survey. *BMJ Open, 5(6),* e007079.

41. Jorm, A. F., Medway, J., Christensen, H., Korten, A. E., Jacomb, P. A. et al. (2000). Public beliefs about the helpfulness of interventions for depression: effects on actions taken when experiencing anxiety and depression symptoms. *Australian & New Zealand Journal of Psychiatry, 34(4),* 619–626.

42. Hollingshead, A. B., Redlich, F. C. (2007). Social class and mental illness: a community study, 1958. *Am J Public Health, 97(10),* 1756–1757.

43. Gulliver, A., Griffiths, K. M., Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC Psychiatry, 10(1),* 113.

44. Altamura, A. C., Dell'osso, B., D'Urso, N., Russo, M., Fumagalli, S. et al. (2008). Duration of untreated illness as a predictor of treatment response and clinical course in generalized anxiety disorder. *CNS Spectrums, 13,* 415–422.

45. Marshall, G. N., Schell, T. L., Elliott, M. N., Berthold, S. M., Chun, C. A. (2005). Mental health of Cambodian refugees 2 decades after resettlement in the United States. *JAMA, 294(5),* 571–579.

46. Wakefield, M. A., Loken, B., Hornik, R. C. (2010). Use of mass media campaigns to change health behaviour. *Lancet, 376(9748),* 1261–1271.

47. Wetterlin, F. M., Mar, M. Y., Neilson, E. K., Werker, G. R., Krausz, M. (2014). eMental health experiences and expectations: a survey of youths' Web-based resource preferences in Canada. *Journal of Medical Internet Research, 16(12),* e293.

48. Doherty, G., Coyle, D., Sharry, J. (2012). Engagement with online mental health interventions: an exploratory clinical study of a treatment for depression. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems,* pp. 1421–1430.

49. Wantland, D. J., Portillo, C. J., Holzemer, W. L., Slaughter, R., McGhee, E. M. (2004). The effectiveness of Web-based *vs.* non-Web-based interventions: a meta-analysis of behavioral change outcomes. *Journal of Medical Internet Research, 6(4),* e40.

50. Dumesnil, H., Verger, P. (2009). Public awareness campaigns about depression and suicide: a review. *Psychiatric Services, 60(9),* 1203–1213.

51. Clement, S., Lassman, F., Barley, E., Evans-Lacko, S., Williams, P. et al. (2013). Mass media interventions for reducing mental health‐related stigma. *Cochrane Database of Systematic Reviews, 7 (3),* 34–50.