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The Association between COVID-19 Media-Literacy and the Fear of COVID-19 among Pakistani Students During Coronavirus Pandemic

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Annotation: The prevalence of the Covid-19 epidemic in Pakistan is associated with many psychological and social effects. This study aimed to examine the association between COVID-19 media-literacy and the fear of COVID-19 among students during the coronavirus crisis. This study was conducted on 200 students of the Aga Khan University (Karachi, Pakistan) which were selected with a multistage sampling method. To collect the data, the COVID-19 media-literacy scale (C-19MLS) and the fear of COVID-19 scale (FCV-19S) were used. Data were obtained using the SPSS-21 software. The findings of this study showed that the COVID-19 media-literacy was inadequate in participants. Also, COVID-19 media-literacy was related to the Fear of COVID-19.

Keywords: Media-Literacy, Health Literacy; anxiety disorder; Pakistani Students.

Связь между медиаграмотностью в отношении COVID-19 и страхом перед COVID-19 среди пакистанских студентов во время пандемии коронавируса

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Аннотация: Эпидемия Covid-19 в Пакистане имела имела многочисленные психологические и социальные последствия. Данное

исследование было направлено на изучение связи между медиаграмотностью в отношении COVID-19 и страхом перед COVID-19 среди студентов во время коронакризиса. В этом исследовании приняли участие 200 студентов Университета Ага Хана (Карачи, Пакистан), которые были отобраны методом многоэтапной выборки. Для сбора данных использовались шкала медиаграмотности КОВИД-19 (C-19MLS) и шкала страха перед COVID-19 (FCV-19S). Данные получены с помощью программы SPSS-21. Результаты этого исследования показали, что медиаграмотность в отношении COVID-19 у участников была недостаточной. Кроме того, медиаграмотность в отношении COVID-19 была связана со страхом перед COVID-19.

Ключевые слова: медиаграмотность, грамотность в вопросах здоровья; тревожное расстройство; пакистанские студенты.

Introduction

The Covid-19 pandemic has alarming implications for mental health and emotional and social functioning (1). A finding of the study shows that adverse mental health effects especially in pre-existing mental health disorders and increased the risk of mental health problems during the unpredictability of the COVID-19 pandemic (2, 3). The number of cyberspace users will reach about 70% of the world's population by 2020, and this is even higher than the total number of people in the world who have access to safe drinking water (4). Iranians' access to the Internet is also increasing, as is the world; As 70% of Iran's population has access to the Internet (4). Media-literacy, meanwhile, refers to the ability of individuals to consume a media product, and the goal of it is to enable individuals to control media consumption and be conscious about media exposure (5, 6). Media-literacy skills for critical analysis of media messages are the most essential requirements which can prevent problematic events (7). Also, the results of meta-analysis studies indicated the effectiveness of media-literacy educational interventions on the prevention of high-risk behaviors (8, 9). Also, other results of the study proved a clear picture of media's role and how a medium platform influences the intention of smoking among

adolescents. These facts highlighted the need for health interventions to promote media-literacy. On the other hand, Coronavirus (COVID-19) was a hot topic of global discussion and was declared an international public health concern; This disease with a source of zoonotic release; The commonality between humans and animals spread throughout the world (8); Now many countries are involved in an increased level of public health, contact control, social intelligent and physical distance law and vaccination for transmission chain interruption to minimize the spread of Covid-19. On the other hand, in this period, media exposure in individuals especially social media apps were increased (2); furthermore, there is alarming Covid-19 fake news in cyberspace that contains incorrect information and is published to mislead the audience (3). Evidence showed that the variety of information disseminated in electronic and social media, caused a significant potential to harm users (1). Besides, it is necessary to mention that despite the insufficient skills of media-literacy, in the individuals, especially students as high users of electronic and social media; (7), especially during covid-19 pandemic which are faced with a lot of news and media messages about this disease, the limited study was evaluated media-literacy related to COVID-19. Besides, the evidence demonstrated anxiety caused by COVID-19 is a common symptom during the COVID-19 crisis that weakens the immune system. Therefore, to obtain more upto-date information and investigate the factors related to fear of COVID-19, this study aims to determine the association between COVID-19 media-literacy and the fear of COVID-19 among students during the Coronavirus pandemic.

Method

The present study was a cross-sectional observational study based on the formula for calculating the sample size in previous studies (with a standard deviation of 44%). Considering the 95% confidence level, 80% test power, and 0.05 accuracy and considering a 10% probability of non-response, this study was conducted among 300 students in 2020 (7). It is worth mentioning that the data collection tools consisted of three parts: the first part included demographic information such as age, sex, job, residence status, usage of social media apps status and the second part

included the COVID-19 media-literacy (C-19MLS) questionnaire and the third part included the fear of COVID-19 Scale. The sampling method in this study was a multistage sampling, (stratified-cluster-simple random sampling) process, so that after coordination with the officials of the Aga Khan University and receiving the number of students in each faculty by gender of students through the proportional assignment of samples from faculties (i.e. to faculties With more students, more samples were allocated) research units were rationed and in the next step the samples were collected randomly. Then, in coordination with the officials of the universities and colleges and obtaining their consent, they referred to the students and if they wished to be interviewed, they obtained informed written consent from them and gained trust and assurance in the field of confidentiality of information.

The data collection method was the selfreporting method from Aga Khan University (Karachi). In present study included 17 nonresponse data. Inclusion criteria in this study are being at least 18 years old, studying in the Aga Khan University and willingness to participate in the study (completing written consent, interview, completing a questionnaire) and, accessibility to internet also, exclusion criteria including lack of hearing and vision health and the mental and perceptual disorder was a reluctance to cooperate.

Based on previous experience, we developed a scale survey process by typical procedures. This measurement instrument's framework was defined in terms of the Media-Literacy Training Center of the American CML (2). The items of C-19MLS were then extracted utilizing the findings of a qualitative study in this regard such as the interviews with students in the groups and subgroups. The predictor or independent variables included 5 factors of (a): Objective, (b) Contractedness, (c) audience, (d), Format, and (e): Filter and omit. C-19MLS was the essential dependent variable in the current assessment. According to the factor analysis, the GOF (goodness-of-fit) indices, the studied model had an appropriate fitting to the data ($\chi^2/df = 2.706 < 3$, $RMSEA = 0.093 \leq 0.1$; $CFI = 0.893 \geq 0.9$; $TLI = 0.874 \geq 0.9$; $GFI = 0.816 \geq 0.9$; and $SRMR = 0.06 \leq 0.08$). Also, the mean scores of CVI and CVR were 0.94 and 0.77, respectively. The reliability of this tool was obtained using Cronbach's

alpha method $\alpha = 0.86$. So, the COVID-19 Media Literacy Scale (C-19MLS) consists of 21 questions which have dimensions and items including: Contractedness of credible Covid-19 media messages with 3 questions, which has a Likert scale of 5 completely disagree to strongly agree (score 5), the score range of this item is between 3 to 15 points. Contractedness of fake media Covid-19 messages creator item 3 questions, which has a Likert scale of 5 completely disagree to strongly agree (score 5), the range of scores of this item is between 3 to 15 points. Fake media Covid-19 messages audience item that has 3 questions, which has a Likert scale of 5 completely disagree to strongly agree (score 5), the range of scores of this item is between 3 to 15 points. The format and technique of 6 questions, which has a Likert scale of 5 completely disagree to strongly agree (score 5), the range of scores of this item is between 6 and 30 points. Lifestyles are represented in Covid-19 fake media messages with 6 questions which has a Likert scale of (score 1) completely disagree to strongly agree (score 5), the range of scores of this item is between 6 to 30 points. Eventually, a total score is calculated by adding up each item score (ranging from 21 to 105). The higher score indicating good COVID-19 media-literacy (10). Notably, according to the qualitative analysis of exploring the experience of people's Covid-19 media-literacy, the last 21 items recognized that the scale was accomplished by the C-19MLS measurement. Base this results contractedness of credible media coronavirus messages dimension means "Who product credible Covid-19 media messages?" contractedness of fake media coronavirus messages dimension means "Who creates fake Covid-19 media messages?" fake media coronavirus messages audience dimension means "Who may deal with fake Covid-19 media messages?" format dimension means "What creative techniques are used to attract individual's attention?" represented lifestyle dimension means that media have embedded value and point of view; "What lifestyle, value and point of view are presented in or omit from this message?" Based on the European health literacy survey (2), and a previous study(6) in health-oriented media-literacy category rank and level of COVID-19 media-literacy in such a way that 0 to 50 COVID-19 media-literacy is Inadequate, 50.01 to 66 COVID-19 media-literacy is somewhat inadequate, 66.01 to 84 COVID-

19 media-literacy is sufficient and 84.01 to 100 is excellent COVID-19 media-literacy was considered. To measure the fear of COVID-19, we use the Fear of COVID-19 Scale (FCV-19S) (2). The Pakistani-version FCV-19S has a high internal consistency and good validity and it can be used as a scientific and valid tool for measuring the fear of COVID-19 with a five-item Likert type scale “strongly disagree,” to “strongly agree”. The minimum score possible for each question is 1, and the maximum is 5. A total score is calculated by adding up each item score (ranging from 7 to 35). The higher the score, the greater the fear of coronavirus.

Results

According to the findings, the mean age of participants was 26.04 ± 6.9 years with the age range of study participants was between 18 and 47 years and, 68.7% women and 62% at the B.S level and 57.3% of the study participants lived in dormitories. 90.3% of the participants in the study were moderate users and 9.7% of them were heavy users of social networks. As a result, the mean COVID-19 media-literacy score was 71.64 ± 11.36 and about 25% of students had an adequate and high level of COVID-19 media-literacy. The technique and format dimension had the best situation among other dimensions with 66% and the fake media coronavirus messages audience had the worst situation with 51.42% of the average of the maximum achievable score of the total COVID-19 media-literacy. It is necessary to explain that this percentage is a kind of correct judgment and the mean alone cannot be judged and how to calculate it as: The ratio of the difference between the mean of the minimum score on the range of scores is expressed as a percentage. Also, according to the findings, there is a significant relationship between COVID-19 media-literacy and the variables of age ($p < 0.001$), marital status ($p < 0.001$), job ($p < 0.001$), and usage of social media apps ($p < 0.001$). Also, the results of the post hoc test indicate that students over the age of 30 who are married, employed, and low users of social media apps have higher COVID-19 media-literacy. Furthermore, based on the findings, the mean score of Fear of COVID-19 was 11.88 ± 4.34 and, there is a significant relationship between Fear of COVID-19 and age ($P < 0.001$), gender ($P = 0.03$), marital status (0.04), and usage of social network apps status (P

<0.001). In other words, the fear of COVID-19 was higher among female students. Also, students over the age of 30 experienced, divorce students and high user of social network apps more than the fear of COVID-19. Bold font indicates P-value is significantly different ($p < 0.05$) than Obtained by the independent t-test. Also, according to the Pearson correlation coefficient test, the fear of COVID-19 had a negative and significant correlation with the dimensions and total COVID-19 media-literacy ($P < 0.001$). In other words, with the increase of fake media COVID-19 messages, the level of Fear of COVID-19 also increased in individuals with poor COVID-19 media-literacy and critical thinking skills.

Discussion

This study aimed to determine the relationship between media-literacy related to coronavirus disease and Fear of COVID-19 in university students. According to the findings, 75% of students had insufficient COVID-19 media-literacy. In Solhi et al.'s study, the media literacy related to self-medication of slimming supplements in female students of Pakistani University was moderate. In explaining these inconsistencies, we can point to the differences between the topics and populations studied in different studies, as well as focusing on the current study and access to newer information. Therefore, access to more up-to-date information in the field of media-literacy, especially in the field of health and health-oriented issues is recommended. Besides, according to the findings, the level of fear of COVID-19 in students was low. In line with the present study, in the study of Liu et al., About 85% of health care workers had normal and low fear of COVID-19. In the study of Jani et al., The fear of COVID-19 score in urban health care workers before the educational intervention was high. Due to the implementation of monitoring and revention systems in the field of coronavirus disease and continuous information of the Ministry of Health and medical universities to prevent anxiety in society and also the lack of direct contact of most students with patients can reduce the fear of COVID-19 score (7). Besides, because this pandemic is an emerging issue in the world, so it is necessary to plan educational intervention studies on fear of COVID-19 in medical students to reduce it. Another finding of the present study; there was a positive and

significant correlation between fear of COVID-19 score and the dimensions of COVID-19 media-literacy.

Conclusion

Overall, the findings of the present study showed that students' COVID-19 media-literacy was related to their level of Fear of COVID-19. Also, the level of media-literacy associated with COVID-19 was inadequate in most study participants. Therefore, designing and implementing educational interventions to empower students in the field of media-literacy related COVID-19 and media consumption regime seems to be necessary to help reduce anxiety and stress caused by this disease and increase the immune system against this disease.

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