ORIGINAL ARTICLE

Influence of Internet Language Hate Speech on Young Adults Mental Health and its Detection Method

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ABSTRACT

Objective: To assess the influence of language hate speech on young adult's mental health and it's detecting the specific hate speeches through computer program.

Study Design: Prospective study.

Place and Duration of Study: Department of Computer Science, Bahria University Islamabad in collaboration with Department of Neurology, Sialkot Medical College, Sialkot from 1st July 2021 to 31st December 2021.

Methodology: One hundred young patients who visited psychological issues due to hate speech on internet within the age group of 16-21 years were enrolled. The questionnaire was developed for psychological assessment of these subjects and influences of violence language on their mental health. The self-reference-index for psychological symptoms (SCL-90) was related with all dimensions of MSQA. A scale with 90 items was opted where each item has a score between 1-5.On the second step a hate speech detection protocol was generated for transfer-learning approach. It used already established pre-trained langue model as BERT.

Results: The mean age of the patients was 19.5±1.1 years. There were more females using internet and victimized of abuse. Anxiety followed by depression was most reported complains among youngsters having emotional problems. While social discomfort was reported in 75% of the total cases. Females were victimized of sexism and abusive language. While male young adults were facing high level of abusive as well as religion related hate speech.

Conclusion: Hate speeches related to sexism, abusive text as well as religious disparities causes depression, learning complications and social discomfort among young adults.

Keywords: Influence, Hate Speech, Young adults, Mental health

INTRODUCTION

Adolescence is a time of physical and mental development but on the same time it is the time of complex transition from irresponsibility to maturity. Young students are more exposed to mental health problems due to anxiety and depression they faced during their curricular activities and in their institutes. This period is regarded as the most unstable period of their life. Due to the exposure of several undesirable phenomenon and instabilities, young people are highly vulnerable to negative thoughts. During this time, their mind frame gets influenced by internet and social media content. Obsessions with digital media, online chats, online game and pornographic websites indulge youngsters into immoral behaviors and became the source of lacking of spiritual civilization and social morality.[1-4]

National and international experts and researchers have conducted various studies to determine and develop the method of mental health interventions.[5-7] Results of these studies have highlighted that, digital addiction has badly impact on student well-being, mental health and sense of security, quality of sleep and social relationships.[7] Internet language has aroused the consideration of whole globe world. Digital addiction prevalence differs greatly in developed and developing countries. World Health Organization (WHO) has now recognized and classified gaming disorder in its international disease classification.[8]

With the emergence of these new problems, it is vital to carefully look into the adverse outcomes associated with the excess use of digital media. Various countermeasures are available to moderate and minimize the digital media use while sustaining healthy balance of their daily activities and internet use. Several software applications have now been developed for the management of digital media or digital device usage. However, this software also has some irrelevant and harmful features.[9-11]

The present study was designed for assessing the psychological influence of internet related hate speech on young adults as well as a mechanism for detecting hate languages through computer-based program. The results of this study not only provide a detailed psychological evaluation of each patient but also assist in detection of specified context which cause a severe influence on medical health of youngsters. This study provides a fundamental ground for facilitating health development by targeting the root cause of mental health deprivation in young adults.

MATERIALS AND METHODS

Each study participant's confidentiality was kept maintained and a written consent was gained for their willingness for participation in the study. A total of 100 study subject who have been a victim of cybercrime/bulling/assault were interviewed in detail by a professional psychiatrist and age 16-21 years with the assistance of a well-designed questionnaire were enrolled. The questionnaire was developed for psychological assessment of these subjects and influences of violence language on their mental health. The self-reference-index for psychological symptoms (SCL-90) was related with all dimensions of MSQA. A scale with 90 items was opted where each item has a score between 1-5. One showed no problem and five presented very severe problem. Young adults within 16-21 years of age who visited psychiatric clinic due to their psychological condition. On the second step a hate speech detection protocol was generated for transfer-learning approach. It used already established pre-trained langue model as BERT. Evaluation of data sets for offensive comments on twitter was conducted followed by formation of Bias elevation system applying existing regularization methods, cross domain approach and labels prediction through classifier training. Data was analyzed using SPSS version 25.0 through chi square test with p value <0.05 as significant.

RESULTS

The mean age of the patients was 19.5±1.1 years. There were more females using internet and victimized of abuse with a percentage of 54%. Out of these severe mental health conditions were diagnosed in 33.92% cases (Table 1).

The dimension variables showed that anxiety followed by depression were two most reported complains among youngsters having emotional problems. While social discomfort was reported in 75% of the total cases under the dimension of social adaption (Table 2).

BERT method used for identifying the hate speech involved presented that majority of the females were victimized of sexism and abusive language. While male young adults were facing high level of abusive as well as religion related hate speech resulting into their declined mental health (Fig. 1).

Table 1: Detection rate of severe mental health condition in enrolled cases

Classification	Severe Mental Health Condition			Detection rate (%)
	Yes	No	Total	
Age in years				
16-18	38	8	46	17.39
19-21	37	17	54	31.48
Gender				
Males	32	12	44	27.27
Females	37	19	56	33.92

Table 2: Psychological assessment of patients (n=100)

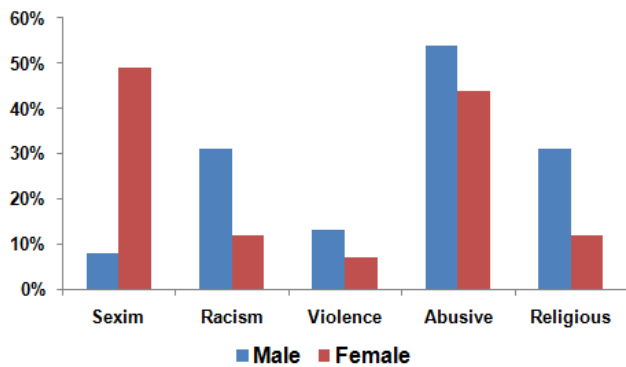| Dimension variables	No.	%
Emotional problems		
Anxiety	38	38.0
Depression	36	36.0
Horror	28	28.0
Suicidal	2	2.0
Social Adaption		
Learning complications	45	45.0
Social discomfort	72	72.0

Fig 1: Detection of internet related hate speech

DISCUSSION

Virtual environment and digital media leads to dissatisfaction and access to the personal information cause verbal violence. Academic burden makes the life of student extremely dull and bore and they get easily vulnerable to digital media addiction. Parents and society usually did not consider it as a problem and students are progressively overwhelmed with internet due to their academic pressure and taking its as their relaxing time. This is creating chaos for the current society and youngsters are suffering badly and creating a gap in their character building, psychological health development and also on their academic performance.[12-15]

Internet and virtual environment aggravate social contradictions due to their regional, cultural and religious differences. Numerous countermeasures have now taken that can be categorized as: software meditation, psychosocial interventions and combination of both of them and showed positive results. Group counselling also proved to be an effective method to reduce mental health problems.[16,17]

Though digital media plays a vital role in information broadcasting, highlighting importance aspects of the society and virtual social networking but media content needs to be reviewed theoretically. Knowledge and information of the media personnel's needs to be assessed and improved meticulously. Everyone needs to be communicated on social media with manners and positive language to avoid any language abuse and violence and creating environment of instability and insecurity. It is important to implement the laws and regulation of virtual society to encourage common users to practice civilized and healthy manners while using digital media.[18-20]

CONCLUSION

Hate speeches related to sexism, abusive text as well as religious disparities causes depression, learning complications and social discomfort among young adults influencing their mental health damagingly.

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