IJMS INTERNATIONAL JOURNAL of MEDICAL STUDENTS

Original Article

21. Psychological effects of symptoms exaggeration by AI symptom checkers among Punjab residents

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Background: The digital health technologies in recent years are advancing, and people are using AI-based tools for online health assessment. Although these tools are convenient, they sometimes exaggerate the user-reported symptoms due to incomplete user input, or a person may misinterpret the symptoms. This can lead to unnecessary health concerns particularly among people lacking health information which leads to general health anxiety, overthinking and repeated online health searches. Exaggeration of symptoms causes psychological stress and behavioral changes in individuals which alter their daily life. Although previous studies have examined anxiety due to search engines, the psychological effects like anxiety, rumination and behavioral changes due to symptoms exaggeration by modern AI-based tools, which are widely used, remain unexplored, which was the aim of this study. **Aims**: To evaluate the extent of symptoms exaggeration by AI symptom checkers among residents of Punjab. **Methodology**: This study utilized a cross-sectional research approach, using a questionnaire that people filled out by themselves on Google Forms. The study comprised of adults aged 18 to 40 old who live in Punjab, Pakistan. The study chose people who have used AI based symptom checkers like ChatGPT, WebMD and Google symptom search etc. The study used scales like CSS-12 and RRS-12 that are validated scales for cyberchondria and rumination. The data from the study was analyzed using a software called SPSS. The study used statistics and special tests like Pearson's correlation and regression to see if there is a connection between what people think about their symptoms and how it affects them psychologically. **Results**: A total of 474 out of 502 responses were analyzed after exclusion of invalid responses. 80.6% of people reported using AI symptom checkers. Symptom exaggeration was moderately linked to cyberchondria (r=0.474, p=0.00) and rumination (r=0.336, p=0.00). Both cyberchondria and rumination were also strongly linked to each other (r=0.589, p=0.00). The mean scores for cyberchondria and rumination were 2.70±0.84 and 2.78±0.87 on a 1-5 scale, respectively. A regression analysis showed symptom exaggeration was a predictor of both cyberchondria and rumination. Relying on using AI symptom checkers more before seeing a doctor was moderately linked to cyberchondria (r=0.351, p=<0.001) and rumination (r=0.374, p=<0.001). 36.1% of people reported behavioral changes. **Conclusion**: Overall, the study assessed psychological impacts of symptom exaggeration by AI tools. There was a positive relationship between symptom exaggeration, cyberchondria and rumination. The mean cyberchondria and rumination score was moderate on scale. The participants also reported behavioral changes showing that symptoms exaggeration by AI tools is leading to psychological concerns and there is a need for improvement in this field to avoid unnecessary concerns.

ISSN 2076-6327

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