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Role of fear of COVID-19 in the relationship of problematic internet use and stress: A retrospective cohort study among Gen X, Y and Z

COVID-19 pandemic affected globally and resulted in collective experience of feeling of loss (Tandon, 2021). These concerns extended to physical health, mental health, economic wellbeing, social interactions and many more (Lathabhavan, 2021a; Lathabhavan et al., 2021a, 2021b). Due to social restrictions and environments such as work from home and online learning, people start spend more time on internet media compare to normal scenario,and directed to both positive and negative outcomes for individuals and society (Lathabhavan, 2021b). Hence an investigation on internet usage and related pandemic effects can better explain mental health concerns.

This article reports the results of study that was conducted to understand the mediating role of fear of COVID-19 in the relationship between problematic internet use and perceived stress. For this, we collected data from three cohorts- Generation X (born between 1965 and 1980), generation Y (born between 1981 and 1996) and generation Z (born between 1996 and 2012). Data were collected from general population including employees, entrepreneurs, home makes and students though an online survey among Indian population. The criterion for allocating cohort group was age. The sample size were as follows: $N_{Gen\ X} = 675$ (360 males and 315 females), $N_{Gen\ Y} = 732$ (400 males and 332 females), $N_{Gen\ Z} = 822$ (474 males and 348 females). Participation for the survey was voluntary and informed consent in electronic form was collected from all respondents. The study used standardized scales of FCV-19S, GPIUS2 and PSS-4, and analyzed using structural equation modeling. SPSS 25.0 and AMOS 24.0 used for performing statistical analyses. The Cronbach's alpha values for variables were above 0.70, showing excellent internal consistency.

The study found significant positive direct relationship among study variables for all cohorts. For Gen X, problematic internet use found to be positively related to both fear of COVID-19 ($\beta_{Gen\ X} = 0.17$, $p < 0.001$) and perceived stress ($\beta_{Gen\ X} = 0.16$, $p < 0.05$). In case of Gen Y, the relationships of problematic internet use were stronger to both fear of COVID-19 ($\beta_{Gen\ Y} = 0.35$, $p < 0.01$) and perceived stress ($\beta_{Gen\ Y} = 0.36$, $p < 0.05$). Gen Z has also shown significant positive relationship with fear of COVID-19 ($\beta_{Gen\ Z} = 0.28$, $p < 0.01$) and perceived stress ($\beta_{Gen\ Z} = 0.33$, $p < 0.001$). The direct relationships between the fear of COVID-19 and perceived stress were also significant among all cohorts ($\beta_{Gen\ X} = 0.21$, $p < 0.01$, $\beta_{Gen\ Y} = 0.25$, $p < 0.001$, $\beta_{Gen\ Z} = 0.25$, $p < 0.01$). For mediation analysis, we tested the model for significance using the bootstrap estimation procedure (a bootstrap sample of 2000 was specified). The estimates of indirect effects (lower limit 95% confidence interval/ upper limit 95% confidence interval) were as follows for different cohorts: $\beta_{Gen\ X} = 0.03$, ns. (0.01/0.05), $\beta_{Gen\ Y} = 0.09$, $p < 0.001$ (0.02/0.11), $\beta_{Gen\ Z} = 0.08$, $p < 0.001$(0.03/0.14). The estimates for direct effects were: $\beta_{Gen\ X} = 0.16$, $p < 0.05$ (0.11/0.21), $\beta_{Gen\ Y} = 0.45$, $p < 0.01$(0.32/0.57), $\beta_{Gen\ Z} = 0.43$,$p < 0.05$(0.31/0.55).

Overall, the study found that problematic internet use and pandemic fear enhances the stress among individuals all age groups. The relationships were stronger among GenY and Gen Z cohorts. Likewise, the study also revealed that the fear of COVID-19 mediates the association between problematic internet use and stress, except in case Gen X for which the result found to be insignificant. The probable reason might be less exposure of very elderly people to technology among Indian population. Future studies can focus on longitudinal methods and different variables to understand behavior over time and situation.

Conflict of interest statement

The authors report no actual or potential conflicts of interest.

Ethical statement

The research confined to the highest level of ethics. All procedures performed in this study involving human participation are conducted according to the ethical standards of 1975 Helsinki Declaration. Electronic consent received from all participants for participation.

References

Lathabhavan, R., 2021a. First and second waves of COVID-19: a comparative study on the impact of pandemic fear on the mental health of university students in India. J. Loss Trauma 0 (0), 1–2. https://doi.org/10.1080/15325024.2021.1950432.

Lathabhavan, R., 2021b. People and social media platforms for positive mental health- A paradigm shift: a case on COVID-19 impact form India. Asian J. Psychiatry 56 (October 2020), 102460. https://doi.org/10.1016/j.ajp.2020.102460.

Lathabhavan, R., Barami.A, N., Kurikkal, M.P.M.M., Manoj, N., 2021a. Mental health concerns of small business entrepreneurs in India due to COVID-19 financial distress. Asian J. Psychiatry 64, 102774. https://doi.org/10.1080/13518040701205365.

Lathabhavan, R., Kurikkal, M.P.M.M., Manoj, N., Barami A., N., 2021b. Mental health concerns due to pandemic fear and financial distress on employees in india during the pandemic: a cross-sectional multi-group study. J. Loss Trauma 1–2. https://doi.org/10.1080/15325024.2021.1989190.

Tandon, R., 2021. The bitter lessons of COVID-19: acknowledging and working through many points of tension. Asian J. Psychiatry 55, 102545.

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