

Research Paper

Effect of Media Use on Anxiety and Well Being During First Lockdown: A Comparison Between Habitats in India

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ABSTRACT

The present study investigated the effects of social media usage and media consumption on anxiety and subjective well-being of people from three different geographical areas: Rural, Urban Municipal and Metropolitan Cities, during the first lockdown due to the COVID-19 pandemic in India. Our sample of 190 females (45 %) and 236 males (55 %) aged between 33.65 ± 11.46 from which Rural = 90, Urban Municipal = 190, Metropolitan City = 146. The administered tests were Warwick-Edinburgh Mental Well-Being Scale for measuring well-being and Beck's Anxiety Inventory for measuring anxiety. It shows significant positive correlation between daily media usage for Urban municipal area ($r = .25$; $p = 0.00039$), significant negative correlation between media consumption and well-being for metropolitan city ($r = -0.21$; $p = 0.0095$) and urban municipal area ($r = -0.15$; $p = 0.041$). To check the group differences in media consumption we ran one way - ANOVA which showed no significant differences between habituation in daily media usage ($F(2,423) = 2.35$, $p = .097$). Our results show significant systematic differences between the habitats of the three areas, suggesting that further research is needed for other psychological constructs and their differences across habitats, as they might show as well some variance at inter-groups level. We have used Pearson correlation for checking the relationship between daily media usage, well-being scores and anxiety scores.

Keywords: Covid-19, Cross-Habitats, Rural, Urban, Metropolitan, social media, Anxiety, Subjective Well-Being

Psychology by its nature is interested, even if not exclusively, in questions related to our emotional states and subjective experiences, but all questions have something in common – happiness as the final destination. Questioning everything that surrounds us is arguably what distinguish us from animals apart from the uncontested biological differences, and some psychologists picture well-being as the ultimate goal of this never-ending interrogation between the self, the others and “the its” of this world. But asking what is happiness it is a tricky question and it would be irrelevant for the purpose of this study to try and define it when philosophers and even ourselves spend a lifetime defining what happiness is, no matter what model we come up with – there won't be one that would

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account sufficiently for the differences in the definitions of happiness from people all around the world. Instead, we (and others psychologists) will generalize happiness to something called *subjective well-being*, which is defined in terms of a manifestation of a stable state of a person over a period of time subjectively perceived through their personal definition of well-being. Because humans are social creatures that influence and are influenced by each other, our happiness and even the reasons of our sadness can reflect many characteristics of the commonly lived phenomena that make up our present time: Are life conditions getting better or worse? If they are getting better, based on what do we give it the superior attribute? Are some groups prospering or, respectively, declining more than others? If yes, what are the objective differences that make the evolution, good or bad, distinctively from the other groups? (Andrews, 1991).

One thing that we all are experiencing at the moment is the COVID-19 Pandemic that by the date of 22 October, 2021 is figured in 242.348.657 confirmed worldwide cases according to the World Health Organization (WHO) (World Health Organization, 2021). Since its beginning, mental health practitioners and researchers have shown great concern on the effects that the current state of the world imposes over people's well-being as their dear ones are dying and their daily lives had to be reshaped - WHO speculates that safety measures such as self-isolation and quarantine have affected usual activities, routines and livelihoods of people that may in turn have multiple consequences on people's emotional states – an increase in loneliness, depression, anxiety, engagement in consumption of harmful substances such as alcohol and drugs. For example, some studies reported a significant change in the suicide rate due to joblessness increasing from 418 to 2114 and other countries such as India, USA, Pakistan, Germany and Italy also experienced an increase in suicide (Mamun and Ullah, 2020; Thakur and Jain, 2020). A study conducted by Roy et al. (2020) assessed the knowledge, attitude, anxiety and perceived need for mental healthcare on a 662 adults' sample from India reporting that the subjects showed higher levels of anxiety and 80% of them were preoccupied with thoughts about COVID-18, 72% of them overused gloves and sanitizers, 37.8% of the respondent's showed paranoia about getting infected and 36.4% of them reported distress related to social media use. For many, social media became the main information retrieving source during this pandemic, and while this tendency to seek for information on these platforms has always been dangerous, the degree to which the risks rise during a crisis situation like the one we are facing at the moment is even more so this can lead to an overspending of time on social media platforms. A meta-analysis by Huang (2020) found a negative correlation of -0.7, supporting that the use of media can have direct causal relationships on the level of perceived well-being of individuals.

Something that no study, at least to our knowledge, has checked for is the cross-habitat differences between people living in Rural, Urban and Metropolitan areas. Rural areas are usually associated with higher levels of subjective well-being because of high perceived social support given by the community spirit that they are sharing and because of that it might be the case that media use doesn't have a significant effect of on subjective well-being due to smartphone usage (Gilbert, Colley & Roberts, 2016). After 2016 India has seen considerable changes in the information and news consumption as a result of substantial falling prices of internet connection and smartphone costs, increasing social media consumption for both Rural and Urban areas (Banaji et al., 2019) The reason why this is something important to look at is given by the way in which content on social media is filtered and generated by the algorithms designed by social media companies (Johnson et al., 2017). Because there is a bias in the nature in which media content is generated and

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consumed between cultures and geographical areas that might influence the way psychological outcomes associated with this platform manifest themselves at inter-groups level, generalizing the findings can result as problematic. There are some other differences between Urban and Rural groups but one that this paper is especially interested in is the difference in subjective-psychological-well-being. Previous studies, such as one conducted by Romans, Cohen & Forte, (2011), revealed that Rural habitats exhibit lower risk for depression, these emerging differences possibly being a product of heterogeneity, migration patterns, interaction between population, gender and density (Berry & Okulicz-Kozaryn, 2011).

The present paper aims to explore the differences in the levels of anxiety and perceived well-being levels between groups from Urban, Rural and Metropolitan geographical areas on a sample of 426 individuals (males and females) from India.

METHODOLOGY

Need For the Study

The present study would fill a gap in the literature by showing how media consumption has affected psychological well-being of people living in different geographical areas: Rural, Urban Municipal and Metropolitan City, being the first study that looks into cross-habitat differences of media related levels of anxiety and well-being. Such an analysis would add to our current knowledge on the ways in which media impacts psychological well-being, thus increasing our inference accuracy on this topic that is of great importance given the rapid and continuous advances in technology that this century is experiencing.

Hypothesis

- H₀₁* - There would be no significant difference between Media consumption hours between Habitats.
- H₀₂* - There would be no significant negative correlation between Media consumption hours and subjective well-being in Metropolitan habitat.
- H₀₃* - There would be no significant negative correlation between Media consumption hours and subjective well-being in Rural habitat.
- H₀₄* - There would be no significant negative correlation between Media consumption hours and subjective well-being in Urban Municipal area habitat.
- H₀₅* - There would be no significant negative correlation between Media consumption hours and anxiety in Metropolitan habitat.
- H₀₆* - There would be no significant negative correlation between Media consumption hours and anxiety in Rural habitat.
- H₀₇* - There would be no significant negative correlation between Media consumption hours and anxiety in Urban Municipal habitat.

Sample

The used data was retrieved from an open-data-source published in the peer-reviewed journal "Data in Brief". The journal rigorously reviews the quality of the data and provides it on an open platform for researchers to use (Mukherjee, Maity & Chatterjee, 2021) (data can be accessed at: <http://dx.doi.org/10.17632/sktz4xv4vh.4>). The participants had to be consistent with the following criterions: Indian nationals, who were fluent in English language, aged 18 years or above, and residing in India. The sample comprises of 190 females (45 %) and 236 males (55 %) with Age between 33.65 ± 11.46 . The geographical location of the respondents was: Rural = 90, Urban Municipal = 190, Metropolitan City =

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146. The data was collected 3 weeks after the first nationwide lockdown in India, between April 16 and 22, 2020. Authors of the data have obtained the informed consent from all the participants and assured them confidentiality of their personal information.

Instruments

Two psychometric tools were used to assess the levels of well-being and anxiety of the participants:

- **Warwick-Edinburgh Mental Well-Being Scale** – This scale contains 14 items measuring the subjective well-being of a participant. The Likert response rate ranges from 1-5 from “none of the time” = 1, to “all the time” = 5. The Cronbach Alpha for current sample was .869. In general, the Cronbach Alpha of scale varies between .79 and .90.
- **Beck’s Anxiety Inventory (BAI)** – This scale contains 21 items measuring the mental anxiety levels of respondents during the COVID-19 crisis. It consists of a four-point Likert scale ranging from “Not at all” = 0, to “Severely - it bothered me a lot” = 3. The Cronbach Alpha for current sample is .929. In general, the Cronbach alpha of the inventory ranges from .83 to .94.

Data-Analysis

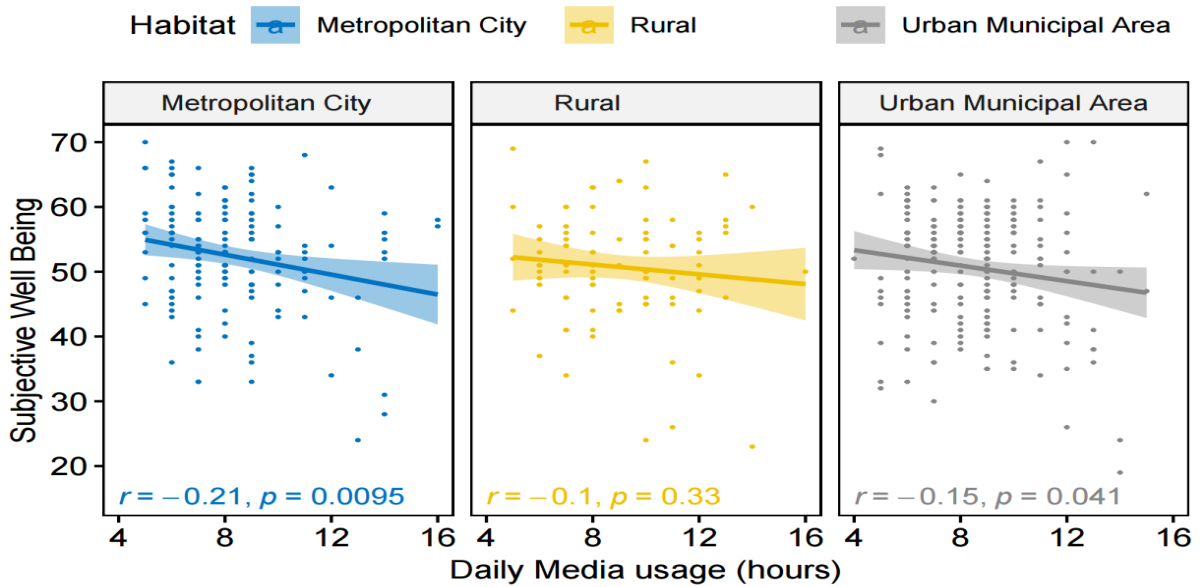
The sample data was analyzed using R-Studio version 2021.09.0+351. The correlation between Media usage scores and Subjective well-being / anxiety scores was performed and plotted using the following r-packages “ggpubr” (Kassambara & Kassambara, 2020), “psych” (Revelle & Revelle, 2015), “ggiraph” and “ggiraphExtra”. The one-way ANOVA between Media usage hours, anxiety scores and Subjective well-being for Rural, Urban and Metropolitan City was performed using r-package “car” (Fox et al., 2012), “jmv” and “psych” (Revelle & Revelle, 2015).

RESULTS

The results showed a consistent negative correlation between subjective well-being and Daily media usage, interestingly the correlation between anxiety scores and daily media usage hours cannot reach the significance value of .05 for Rural habitat and hence we fail to reject our Null hypothesis H_{03} of insignificant relationship between subjective well-being and Daily media usage for Rural habitats. We reject the null hypothesis H_{02} and H_{04} as there was a significant negative correlation of -0.21** for Metropolitan City habitats and -0.15* for Urban Municipal area habitats.

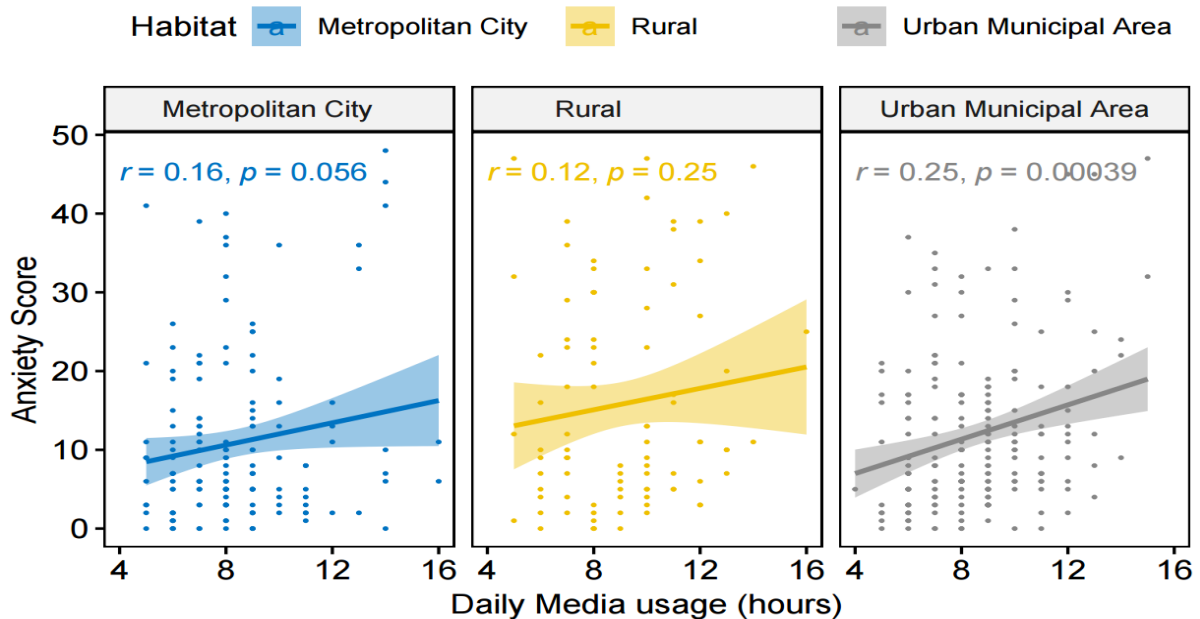
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Graph 1: shows the correlations between Well-Being and Media usage hours for different habitats.



The results for showed a consistent positive correlation between anxiety scores and Daily Media usage, but the p-values for H_{05} and H_{06} cannot reach the significance level of .05, hence we fail to reject the null hypothesis of insignificant relationship between anxiety score Daily Media usage in hours for Metropolitan City habitats and Rural habitats. The correlation between anxiety scores and Daily Media usage for Urban Municipal Area was 0.25***. We reject the null hypothesis of insignificant relationship between anxiety scores and daily media usage hours for Urban Municipal area.

Graph 2: shows the correlations between Anxiety Score and Media usage hours for different habitats.



The following table gives the inter-correlations between anxiety score, subjective well-being and media usage hours.

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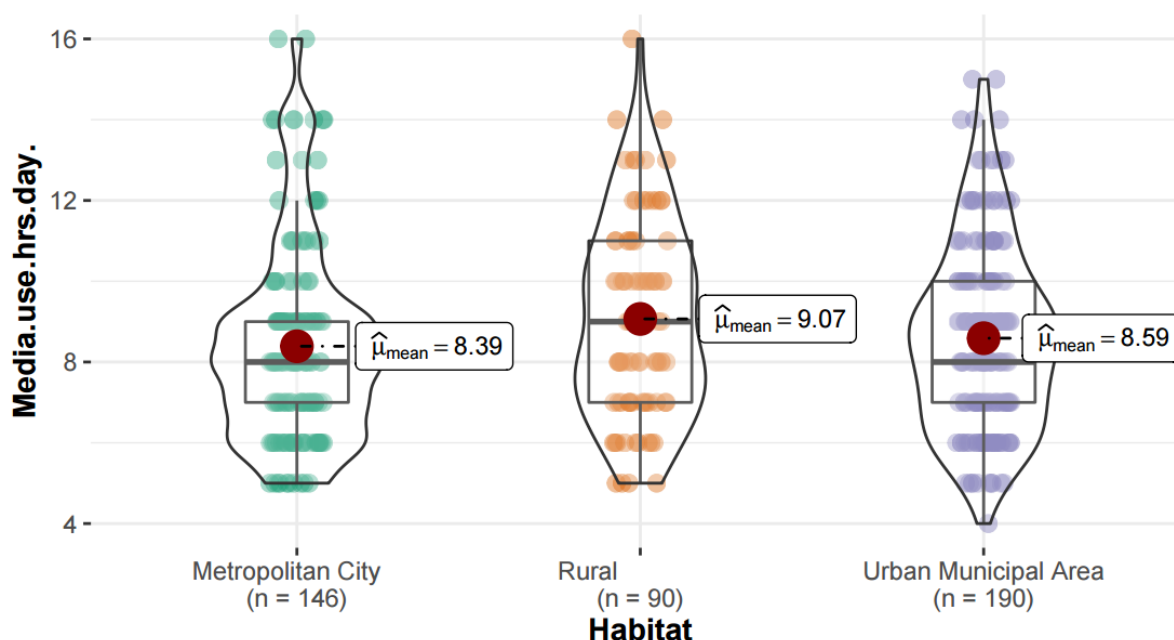
Table No. 1 shows the correlations between Well-Being, Anxiety score and Media usage hours for habitats

Metropolitan City			Rural			Urban Municipal Area		
	Media use hours	Anxiety Score		Media use hours	Anxiety Score		Media use hours	Anxiety Score
Well-being Score	-0.21**	-0.33***	Well-being Score	-0.10	-0.19	Well-being Score	-0.14*	-0.24***
Anxiety Score	0.15	-	Anxiety Score	0.12	-	Anxiety Score	0.25***	

Correlation is significant at; * = $p < .05$, ** = $p < .01$, *** = $p < .001$

One-way ANOVA between Habitats as independent variable and Media Usage hours per day as dependent variable did not show a significant difference between groups. We fail to reject the null hypothesis of difference between Habitats on Media use hours. We get $F(2,423) = 2.35$, $p = .097$.

$$F_{\text{Fisher}}(2,423) = 2.35, p = 0.097, \hat{\omega}_p^2 = 6.29\text{e-}03, \text{CI}_{95\%} [0.00, 0.03], n_{\text{obs}} = 426$$



DISCUSSION

COVID-19 has brought many uncertainties with it, which in turn made people consume content through media channels excessively, for which Boursier et al., (2020) found anxiety levels increasing. We can see that on average the time consumption for media content across habitats lies around 8-9 hours on average. The current study provides evidence of heterogeneous nature of how subjective well-being and anxiety is getting affected with contrast to habitats. Even though the mean media usage was higher in Rural area it wasn't significantly related to any subjective well-being or anxiety score. Speculations can be made at the level of how society forms and conducts itself around the media use - for example we have seen in Indian context that the community in villages usually live-in houses which aren't as separated as living in buildings in Metropolitan Cities, speculating that Rural habitats have a stronger feeling of security and less of loneliness due to their community

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lifestyle. Indian villages also felt relatively less the consequences of the COVID-19 pandemic ("Second wave spreading much faster in Rural India than first", 2021).

Both Metropolitan Cities and Urban Municipal areas have shown a decrease in well-being scores as their media usage time was increasing and it can happen due the need of social support (Fu et al., 2020), high social media exposure (Gao et al., 2020), lack of certainty (Clark Bryan et al., 2020). The impact of media usage and anxiety scores between habitats is seen to have an increasing trend but it can be due several reasons, we have also showed that well-being scores are also negatively correlated with anxiety scores, our findings being consistent with previous studies - Gao et al., (2020) have also shown that social media exposure of COVID-19 can increase levels of anxiety.

Although there was insignificant relationship between anxiety scores and media use in Metropolitan City it's interpretation should be cautious as the p-value is very close to .05 and hence there can be an effect in subsequent replications (Dahiru, 2008). We consider that the study is of major importance given the paramount implications that media, and especially social media usage has on people from all around the globe. Some studies showed that social media use led to lower-to-lower performance on task performance tests (Brooks, 2015), another study showing that social media use along with envy is a significant predictor of burnout (Liu & Ma, 2020). McCord et al. found that Facebook social interaction was associated with social anxiety in an adult sample, but with our findings showing systematic differences across habitats, the question if the previous studies also could possibly show differences should be addressed in future research studies. The current study advances our understanding on how anxiety and subjective well-being manifest themselves across different geographical areas but further research is needed for extending our understanding on the differences between other psychological constructs across habitats.

LIMITATIONS

One of the limitations of current study is the sample size of Rural area, it consists of 90 respondents and it might not be an appropriate representation of Rural area habitats, although the results were robust meaning that they should be consistent with the further explorations of well-being and media use in Rural habitats.

CONCLUSION

The current study supports the notion of cross-habituation differences in effect of media use on subjective well-being and anxiety. This will be going to motivate the research to look into the cross-habituation differences between various psychological traits. This research lays a foundation for further research on psychological traits that might differ systematically across habituations.

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Conflict of Interest

The author(s) declared no conflict of interest.

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