



## Investigating the Influence of Gender and Socioeconomic Status on Casual Attributions Regarding Obesity and Depression

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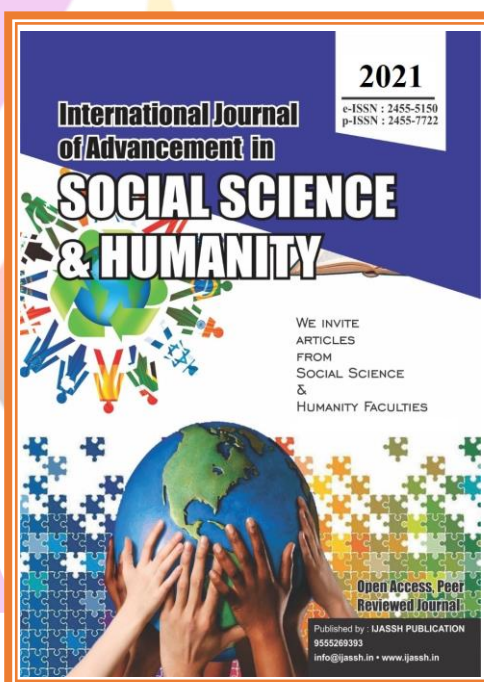
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### ABSTRACT

Instances of obesity and depression and both rising the world over. The development, maintenance and effective treatment of these two disorders can be influenced by emotions of the person suffering from these disorders. How society attributes the blame/causation for these disorders therefore can influence the sufferer and influence the treatment. Therefore this study investigated how factors like gender and socioeconomic status of persons with obesity and depression influence subjective judgements and casations regarding the development of obesity and depression. Vignettes were used to create four conditions varying in terms of gender and socioeconomic status which were about a target person suffering from issues of obesity and depression. T tests and chi square tests were used to measure the differences in the subjective differences in the ratings. Results showed that 'male' and 'affluent socioeconomic status' conditions elicited a higher estimation of efforts to engage in physical exercise. Obesity was attributed to dispositional factors and gender and socioeconomic status had no significant influence on these estimates. Socioeconomic status did have an influence on the causation of depression. In all conditions a need to visit a mental health professional was indicated regardless of gender or socioeconomic status.

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## INTRODUCTION

Attributions may be defined as inferences regarding the cause of a person's behavior or an interpersonal event (APA Dictionary of Psychology, 2020). Attributions generally are characterised as three major patterns. Internal-external, stable-unstable and global-specific factors. A few interesting aspects of the nature of causal attributions for the actions of oneself have been found out by several research studies. Generally, successes are attributed to ability and dispositional factors whereas failures are attributed to external or situational factors. With regards to gender differences however, interestingly males significantly attribute failures to external factors whereas females attribute failures to dispositional factors like ability (Beyer, 1998). It would be of key interest to find out whether males and females project this style of attribution on the behaviors of other individuals.

Gender bias maybe defines as any one of a variety of stereotypical beliefs about individuals on the basis of their sex, particularly as related to the differential treatment of females and males (APA Dictionary of Psychology, 2020). Though human society has advanced tremendously on all spheres of human development some rudimentary structures of mind set still hold a strong grip on human cognition. Millions of years of evolution might be the catalyst of

this perceived segregation between the abilities, interests, potential, morality and decision making between men and women. Whether attributions contribute to medical practitioners approaching health issues of their patients might be debated but evidence of a differential treatment plan adhered to base on the gender of the patient is mounting. Research has shown a gender bias reflected in a delayed diagnosis for serious medical conditions for women (Lyrtzopoulos et al., 2013). Johnston et al. (2013) found gender-based bias for a preference to use relevant treatments more often for men than for women for heart disease.

The World Health Organization reports that a vast majority of people suffering from mental health issues belong to low to middle income sections of the society. It was found that having a person with a mental health issue within the household negatively correlated with the socioeconomic status of the household (Hailemichael et al., 2019). It was considered a relevant variable to be investigated in this study as an awareness of this connection by the general population could be vital to the creation of a positive approach towards the issue of addressing mental health issues in India.

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studies. Generally, successes are attributed to ability and dispositional factors whereas failures are attributed to external or situational factors. With regards to gender differences however interestingly males significantly attribute failures to external factors whereas females attribute failures to dispositional factors like ability. It would be of key interest to find out whether males and females project this style of attribution on the behaviors of other individuals.

A key and sensitive area where the issue of gender bias and causal attributions might be doing significant damage is that of mental and physical health. Physical issues particularly that of weight issues and mental health issues like that of depression are rising globally and the sufferers of physical and mental health are also increasingly facing stigma, shaming and blame for their issues. Obesity is a severe issue with its impacts spreading from health, social and financial aspects (Kumanyika et al., 2008). Globally obesity is being considered as an epidemic. (Niederdeppe et al., 2011).

Though it is evident from several studies that both obesity which involves diverse causes including among many more genetics and environment in its development (Thaker, 2017) and depression which could involve genetic pre-dispositional and environmental factors in its development are not entirely in the control of individuals.

However, a mindset in the general population seems to exist that these disorders are the consequence of affluence and self-indulgence.

With regards to obesity this blame seems to also be present in health care professionals and is perceived by patients (Malterud & Ulriksen, 2011). The consequence of this is the internalization of the blame and faulty attributions of their disorder by patients.

With respect to depression, the mindset of the general population seems to be that affluent people have no reason to be depressed and that mild sadness is often blown out of proportion to be labeled as depression. Whereas research seems to indicate that the affluent might counterintuitively be at a higher risk of anxiety and mood disorders (Luthar & Latendresse, 2005).

These observations have guided the present study to investigate attributional patterns of the physical and mental issues of individuals of different genders and socioeconomic background.

How society views particular health issues can have an impact on the course of treatment, health policies and the motivation of the patient to make choices that help improve their situation.

The present study investigated whether gender of the main character of a

hypothetical event played a role in the attribution of causation of physical (obesity) and mental (depression) issues to dispositional or situational factors. This study also investigated whether the socio-economic status of the main character of a hypothetical event played a role in the attribution of causation dispositional or situational factors. This study also investigated whether gender and socioeconomic status played a role in the subjective assessment of the severity of issues and the urgency to seek professional help.

## **METHOD**

Participants were members of the general population from three states of India (N= 120). The mean age of the participants was 31 years. Sample was gathered via opportunity sampling. Participants were assigned randomly into four conditions as operationalized by reading one of four vignettes. The vignettes included a description of either a male or a female poor or affluent socioeconomic background and showing signs of obesity and depression. Subsequently surveys were utilized to gather subjective judgements and assessments of the efforts to exercise, and the requirement to visit a mental health professional and the causation and severity of the disorders and the urgency of the requirement to seek

professional help. The following conditions were created by the vignettes:

Condition 1: Male, low socio-economic background showing signs of obesity and depression (n=30).

Condition 2: Male, high socio-economic background showing signs of obesity and depression (n=30).

Condition 3: Female, low socio-economic background showing signs of obesity and depression (n=30).

Condition 4: Female, high socio-economic background showing signs of obesity and depression (n=30).

The responses were gathered via the use surveys presented in the form of google forms and the surveys were online for 1 week.

## **Operational Definition of Variables**

### ***Independent Variables***

1. Gender of the target person presented in the vignette.
  - Male
  - Female
2. Socioeconomic status of the target person presented in the vignette.
  - Poor
  - Affluent

***Dependent Variables***

1. Subjective judgements regarding efforts to exercise regularly.
2. Subjective causation of obesity.
3. Subjective causation of depression.
4. Subjective estimates about the seriousness of the mental health issue.
5. Subjective judgement of the requirement of the target person to visit a mental health professional

**HYPOTHESIS**

1. Socioeconomic status of the target person in the vignette provided will not have an influence on the subjective judgements of the subjects regarding efforts to exercise regularly.
2. The gender of the target person in the vignette provided will not have an influence on the subjective judgements of the subjects regarding efforts to exercise regularly.
3. Socioeconomic status of the target person in the vignette provided will not have an influence on the subjective causation of obesity provided by the subjects.
4. The gender of the target person in the vignette provided will not have an influence on the subjective causation of obesity provided by the subjects.
5. Socioeconomic status of the target person in the vignette provided will not have an influence on the subjective causation of depression provided by the subjects.
6. The gender of the target person in the vignette provided will not have an influence on the subjective causation of depression provided by the subjects.
7. Socioeconomic status of the target person in the vignette provided will not have an influence on the subjective estimates about the seriousness of the mental health issue of the target person.
8. The gender of the target person in the vignette provided will not have an influence on the subjective estimates about the seriousness of the mental health issue of the target person.
9. The socioeconomic status of the target person in the vignette provided will not have an influence on the subjective judgement of the requirement of the target person to visit a mental health professional for the issue of depression.
10. The gender of the target person in the vignette provided will not have an influence on the subjective judgement of the requirement of the target person to visit a mental health professional for the issue of depression.



## RESULTS

Subjective judgements regarding efforts put in to exercise regularly.

Subjective estimates of effort put to exercise were judged by a 10-point likert scale (1 = Not too much effort, and 10 = A lot of effort). Overall, the male conditions (both poor and affluent) received a mean rating of 5.28 and the female conditions (both poor and affluent) received a mean rating of 5.92.

Overall the poor conditions (both male and females) received a mean rating of 5.03 and the affluent conditions (both male and females) received a mean rating of 6.17. The male/poor condition received a mean rating of 4.9, the male/affluent condition received a mean rating of 5.67, the female/poor condition received a mean rating of 5.17 and the female/affluent received a mean rating of 6.67. The findings are presented in Table 1 below.

Efforts Put to Exercise Regularly		
Condition	Mean Ratings	SD
Male/Poor	4.9	0.99
Male/Affluent	5.67	2.05
Female/Poor	5.17	1.78
Female/Affluent	6.67	1.72
Male	5.28	1.64
Female	5.92	1.89
Poor	5.03	1.43
Affluent	6.17	1.94

Table 1. *Subjective Judgements Regarding Efforts Put to Exercise Regularly.*

The participants in the male condition ( $M = 5.28$ ,  $SD = 1.64$ ) provided significantly higher ratings of the effort put in by the subject to exercise as compared to the participants in the female condition ( $M =$

$5.92$ ,  $SD = 1.89$ ),  $t(58) = -1.95$ ,  $p = .02$ . Thus, the hypothesis that the gender of the target person in the vignette provided will not have an influence on the subjective

judgements of the subjects regarding efforts to exercise is rejected.

The participants in the affluent conditions ( $M = 6.17$ ,  $SD = 1.94$ ) provided significantly higher ratings of the effort put in by the subject to exercise as compared to the participants in the poor conditions ( $M = 5.03$ ,  $SD = 1.43$ ),  $t(58) = -3.62$ ,  $p = .0002$ . Thus, the hypothesis that the gender of the target person in the vignette provided will not have an influence on the subjective judgements of the subjects regarding efforts to exercise is rejected.

The participants in the male/affluent condition ( $M = 5.67$ ,  $SD = 2.05$ ) provided significantly higher ratings of the effort put in by the subject to exercise as compared to the participants in the male/poor condition ( $M = 4.9$ ,  $SD = 0.99$ ),  $t(58) = -1.83$ ,  $p = .03$ .

The participants in the female/affluent condition ( $M = 6.67$ ,  $SD = 1.72$ ) provided significantly higher ratings of the effort put in by the subject to exercise as compared to the participants in the female/poor condition ( $M = 5.17$ ,  $SD = 1.78$ ),  $t(58) = -3.30$ ,  $p = .0008$ .

There was no significant difference in the subjective ratings provided with respect to the effort put in by the subject to exercise by participants in the male/poor ( $M = 4.9$ ,  $SD =$

$0.99$ ) and female/poor conditions ( $M = 5.17$ ,  $SD = 1.78$ ),  $t(58) = -0.71$ ,  $p = .23$ .

The participants in the male/affluent condition ( $M = 5.67$ ,  $SD = 2.05$ ) provided significantly higher ratings of the effort put in by the subject to exercise as compared to the participants in the female/affluent condition ( $M = 6.67$ ,  $SD = 1.72$ ),  $t(58) = -2.03$ ,  $p = .02$ .

### *Subjective causation of the issue of obesity*

For all four conditions the cause of obesity was majorly attributed to dispositional causes. Overall, the attribution of obesity to situational factors was judged by 18.33% of the sample and to dispositional factors by 81.66% of the sample. The attribution of obesity to dispositional factors was judged by 90% of the sample in the male/poor condition, 86.6% of the sample for the male/affluent condition, 66.6% of the sample for the female/poor condition and 83.3% of the sample for the female/affluent condition. The findings are presented in table 2 below.



Obesity				
Condition	Situational Causation		Dispositional Causation	
	Frequency	Percentage	Frequency	Percentage
Overall	22	18.33%	98	81.66%
Male/Poor	3	10%	27	90%
Male/Affluent	4	13.3%	26	86.6%
Female/Poor	10	33.3%	20	66.6%
Female/Affluent	5	16.6%	25	83.3%
Male	7	11.65	53	88.3
Female	15	25%	45	75%
Poor	13	21.66%	47	78.33%
Affluent	9	15%	51	85%

Table 2. *Subjective Causation of the Issue of Obesity*

A chi-square test was performed to examine the relation between gender of the target person and subjective causation of the obesity of the target person. The relation between these variables was not significant,  $X^2(1, N = 120) = 3.56, p = .59$ . Therefore, the hypothesis that the gender of the target person in the vignette provided will not have an influence on the subjective causation of obesity provided by the subjects could not be rejected.

The relation between socioeconomic status of the target person and subjective causation of the obesity of the target person was not significant,  $X^2(1, N = 120) = 0.89, p = .34$ .

Therefore, the findings failed to reject the hypothesis that gender of the target person in the vignette provided will not have an influence on the subjective causation of obesity provided by the subjects.

#### *Subjective causation of the issue of depression*

Overall, the mental health issue of depression was attributed to dispositional factor by 74.16% of the sample and to situational factor by 25.83% of the sample.

The causation of the mental health issue of depression was attributed to dispositional factor by 56.6% of the sample and to

situational factor by 43.3% of the sample in the male/poor condition. In the male/affluent condition it was attributed by 90% of the sample to dispositional factors and by 10% to situational factors. In the female/poor condition it was attributed by 66.6% of the sample to the dispositional factor and by 33.3% to situational factors. In the

female/affluent condition it was attributed by 83.3% of the sample to the dispositional factor and by 16.6% to situational factors. The findings are presented in table 3 below.

Depression				
Condition	Situational Causation		Dispositional Causation	
	Frequency	Percentage	Frequency	Percentage
Overall	31	25.83%	89	74.16%
Male/Poor	13	43.3%	17	56.6%
Male/Affluent	3	10%	27	90%
Female/Poor	10	33.3%	20	66.6%
Female/Affluent	5	16.6%	25	83.3%
Male	16	26.66%	44	73.33%
Female	15	25%	45	75%
Poor	23	38.33%	37	61.66%
Affluent	8	13.33%	52	86.66%

Table 3. Subjective Causation of the Issue of Depression

A chi-square test was performed to examine the relation between gender of the target person and subjective causation of the mental health issue of the target person. The proportion of subjects who rated the mental health issue as situational or dispositional did not differ by based on the gender of the target person,  $X^2(1, N = 120) = 0.04, p = .83$ . Therefore, the findings fail to reject the hypothesis that the gender of the target

person in the vignette provided will not have an influence on the subjective causation of depression.

A chi-square test was performed to examine the relation between socio economic status of the target person and subjective causation of depression of the target person. The relation between these variables was significant,  $X^2(1, N = 120) = 9.78, p = .001$ .

Therefore, the hypothesis that socioeconomic status of the target person in the vignette provided will not have an influence on the subjective causation of depression provided by the subjects is rejected.

***Subjective estimates about the seriousness of the subject's mental health issue***

There was no significant difference in the subjective ratings for the severity of the issue of depression faced by the subject between participants in the male conditions ( $M = 6.85$ ,  $SD = 1.70$ ) and female conditions ( $M = 6.93$ ,  $SD = 2$ ),  $t(58) = -0.25$ ,  $p = .39$ . The findings are presented in table 4 below.

Having the information you have read, how serious do you believe Rohit's issue of depression is?		
Condition	Mean Ratings	SD
Male/Poor	6.16	1.70
Male/Affluent	7.5	1.43
Female/Poor	6.86	2.01
Female/Affluent	7	2.03
Male	6.85	1.70
Female	6.93	2

Table 4. *Subjective Estimates About the Seriousness of the Subject's Mental Health Issue.*

The participants in the male/affluent condition ( $M = 7.5$ ,  $SD = 1.43$ ) provided significantly higher ratings for the seriousness of the issue of depression faced by the subject compared to the participants in the male/poor condition ( $M = 6.16$ ,  $SD = 1.70$ ),  $t(58) = -1.83$ ,  $p = .03$ . Therefore, the hypothesis that gender of the target person in the vignette provided will not have an

influence on the subjective estimates about the seriousness of the mental health issue of the target person could not be rejected.

The participants in the affluent conditions ( $M = 7.23$ ,  $SD = 1.76$ ) provided significantly higher ratings for the seriousness of the issue of depression faced by the subject compared to the participants

in the poor conditions ( $M = 6.43$ ,  $SD = 1.84$ ),  $t(58) = -2.42$ ,  $p = .008$ . Therefore, the hypothesis that socio economic status of the target person in the vignette provided will not have an influence on the subjective estimates about the seriousness of the mental health issue of the target person is rejected.

There was no significant difference in the subjective ratings for the seriousness of the issue of depression faced by the subject between participants in the female/poor ( $M = 6.86$ ,  $SD = 2.01$ ) and female/affluent conditions ( $M = 7$ ,  $SD = 2.03$ ),  $t(58) = -0.25$ ,  $p = .39$ .

There was no significant difference in the subjective ratings of the seriousness of the issue of depression faced by the subject between participants in the male/poor ( $M = 7.5$ ,  $SD = 1.43$ ) and female/poor conditions ( $M = 6.86$ ,  $SD = 2.01$ ),  $t(58) = -1.45$ ,  $p = .07$ .

There was no significant difference in the subjective ratings of the seriousness of the issue of depression faced by the subject between participants in the male/affluent ( $M = 7.5$ ,  $SD = 1.43$ ) and female/affluent conditions ( $M = 7$ ,  $SD = 2.03$ ),  $t(58) = -1.17$ ,  $p = .12$ .

### ***Should the Target Person Visit a Mental Health Professional***

The relation between gender of the target person and the subjective judgement of the requirement to visit a mental health professional was not significant,  $X^2(1, N = 120) = 1.86$ ,  $p = .17$ . Therefore, the findings failed to reject the hypothesis that the gender of the target person in the vignette provided will not have an influence on the subjective judgement of the requirement of the target person to visit a mental health professional for the issue of depression.

The relation between socioeconomic status of the target person and the subjective judgement of the requirement to visit a mental health professional was not significant,  $X^2(1, N = 120) = 1.86$ ,  $p = .17$ . Therefore, the findings failed to reject the hypothesis that the socioeconomic status of the target person in the vignette provided will not have an influence on the subjective judgement of the requirement of the target person to visit a mental health professional for the issue of depression. The findings are presented in table 5 below.

Should the target person visit a mental health professional.				
Condition	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Male	37	61.66	23	38.33
Female	44	73.33	16	26.66
Poor	37	61.66	23	38.33
Affluent	44	73.33	16	26.66

Table 5. *Should the Target Person Visit a Mental Health Professional.*

## DISCUSSION

Overall males were estimated to have put in significantly more effort to exercise regularly as compared to females. This estimation is in line with some research evidence showing that males did indeed engage in physical exercise than females (Azevedo et al., 2007).

Affluence does seem to be an influential factor on the subjective estimation of effort to exercise as both the male and female condition had higher ratings as compared to the poor condition of both genders. People in affluent positions and seen as this might be due to a perceived availability of time and financial means. It could also indicate a mindset suggesting that the affluent are not encumbendond as much as the people for lower socioeconomic strata by the pressures of day-to-day life which aids them to partake in more health maintaining and enhancing behaviors like exercising. This view is supportive of the findings by

McCormack et al. (2011), who found that an affluent familial background positively correlated with physical activity by children. And that due to an increased opportunity for the indulgence in unhealthy behaviors individuals for lower socio-economic strata might have a higher potential to develop obesity. (Shrewsbury & Wardle, 2008; Inchley et al., 2005. This finding also supports the finding from Azevedo et al. (2007), that found positive correlation with socioeconomic status and the engagement in physical activity.

Both gender and socioeconomic status did not have a significant influence on the subject causation of the issue of obesity. Situational factors of a lack of time could have a role to play in this result as the sample consisted of majorly city dwellers and a time crunch is a well-known problem amongst city dwellers in India. Prominent Indian cities like Mumbai and Delhi have been listed as the most stressful and the third

most stressful city to live in among a list of hundred prominent cities in the world, (The Least and Most Stressful Cities Index 2021,2021) Attributing 'non availability of time' to exercise on the part of the target person to situational factors might be the preferred choice based on personal experience and knowledge.

Within affluence however males were given higher estimation of effort to exercise over females. This is contrary to self-report findings where females reported engaging in physical activity than males specifically for maintaining a specific weight (Craft et al., 2014). This finding could be a result of an availability bias wherein a majority of real-world examples of gym workouts may be attributed to males rather than females. The findings for the causation of obesity when read together with the findings for the causation of obesity go against the findings that males attribute their engaging in exercise to achieve a physique superior to their peers (Markland & Hardy, 1993) whereas females attribute their engaging in exercise for maintaining weight targets (Crawford & Eklund, 1994).

Majority of the sample in all conditions attributed the mental health issue to dispositional factors. The mental health issue was overwhelmingly attributed to dispositional factors in both the male and female affluent conditions. In the poor

conditions for both the male and female conditions the dispositional attribution was reduced and relatively more credit was given to situational factors as compared to the affluent conditions. This could suggest a mindset that the affluent population is not perturbed by social and environmental triggers of mental health issues and that the mental health issues of those from the lower socio-economic sections could be a consequence of their pressing conditions. This view goes against the findings by Luthar & Latendresse (2005) who found that the affluent are somewhat at a higher risk of affective disorders. Poverty does have an influence on mental illnesses, especially depression (Ridley, Rao, Schilbach, & Patel, 2020) however the results of this study show the pervasiveness of this view within the general population.

The depression issue was rated as relatively serious in all conditions and there was no significant difference in the male and female conditions.

The only significant difference was found between the male/poor and the male affluent conditions. There was no other significant difference found amongst other groups. These results failed to validate the study by Lyratzopoulos et al., 2013 as all groups received a mean rating which were almost similar and there was no significant difference in the perceived severity of the



mental health issue of males and females overall.

In all conditions the subjects indicated a higher number of 'YES' responses suggesting a non-gender biased concern and assessment of the target person's mental health condition. This finding could be the result of an increased awareness of the issue of depression and the importance given to mental health. This could be considered as a positive finding especially in the Indian context as in 2016 a study by (Ogorchukwu et al, 2016) found a very low level of mental health understanding among Indian youth. This finding is also promising as it might indicate a reduction in the stigma attached to mental health issues and especially the action of visiting a mental health professional. Is as recently as 2015 the stigma towards people with psychological issues was at an alarming level in India, (Venkatesh et al, 2015).

A potential limitation of this study could be that all participants in the sample were educated and were from a high socioeconomic background which could have allowed for the gathering of the perspective of one section of the society and did not collect viewpoints from the weaker sections of the society. This could have influenced the findings on few of the factors of interest in this study. Specifically, that of the requirement of the target person to visit a

mental health professional and the seriousness of the mental health issue. It could be argued that the awareness of and sensitization to mental health issues could be higher in the educated and affluent sections of the Indian society. Future studies could compare the attributions, causations, views and understanding of obesity and depression between samples from different socioeconomic backgrounds. Comparative studies could also investigate the views towards obesity and depression across nations and cultures.

## CONCLUSION

The mindset of the general population towards physical and mental issues is relevant as it has shown to impact the motivation and emotions of sufferers of those issues which are integrally related to treatment. The present study investigated the influence of gender and socioeconomic status on perceived estimations of effort to maintain physical health and the causation for physical and mental health issues. Responsibility for obesity was not found to be influenced by either gender and socioeconomic status. Gender biases in the estimation of positive lifestyle choices like engaging in daily physical exercise were observed. The ownership of a healthy mental health in this study was largely attributed to dispositional factors which might not be the most appropriate way to

address such issues, however the finding that the sample was more inclined to direct the target person to seek help for mental

health issues is suggestive of the increased awareness and sensitivity within the Indian mentality of mental health issues.



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