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Understanding the Effects of Stigma Associated with Therapy

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Abstract: ***The purpose of our study is to understand the effects of the stigma associated with therapy in the final decision of people whether to seek psychotherapy or not. The study is based on a game-theoretical model which tries to explain the negative effects of the stigma on the total payoff one gets from therapy. The stigma arises from a lack of information on the importance of mental wellbeing. We hypothesise, and our data validates our claim that the people belonging to the age group of 18-25, are amongst the first generations to have received formal education on mental health and its importance, and thus we keep that age group out of our study. The model states that if the sum of the costs, namely the fear of judgement (direct stigma), the presumption of no real benefit arising from therapy (indirect stigma), and even the monetary cost, is more than the perceived benefit, people don't seek therapy. To validate this model, we collect primary data of 251 respondents, filter out the responses of those belonging to the age bracket of 18-25 because of the reasons mentioned above, leaving us with 67 responses, enough to assume normality. We regress the variable, "Whether people consider seeking therapy in the future or not" on the following cost variables. The beta coefficients of the stigma cost variables come out to be significant and negative. Thus, our model correctly explains the reason why people may decide to not seek psychotherapy.***

Keywords: Mental Health, Stigma, Therapy, Game Theory

I. A REVIEW OF LITERATURE

It is not rare to come across a perception that categorizes therapy as a service meant only for those who become outcasts for society after undergoing clinical mental disorders. Over the centuries, this common perception has created a societal and internal stigma that prevents those suffering from mental issues from seeking help to feel better. Through our research, we aim to understand and model the impact of such stigma on one's decision-making and well-being using a game-theoretical approach.

Psychotherapy is a relationship between the client and the therapist which aims in helping to solve the client's psychological problems. These problems could be related to their day-to-day life or some serious medical disorder as well. This is done by ensuring that psychologists are using research-based systematic techniques. A good therapist must provide trustful, unconditional positive regard and an empathic environment for their clients during the course of therapy. Broadly psychotherapies could be divided into 3 categories - psychodynamic, behavioural, and existential.

Although Therapies are generally used to help people in their life, people still avoid going to therapists. Corrigan (2004), in his research, points out how, because of public and self-stigma associated with mental illness, people avoid help-seeking behaviour from professional therapists. In his discussion on why people with Mental Health Issues fail to engage in their proper treatment, he, with the support of archival data, explains how stigma is developed by 4 social cognitive processes- cues, stereotypes, prejudices, and discrimination. He concludes his research by calling for anti-stigma programs in the community to not only remove the negative attitude towards therapy but also promote a positive attitude supported by facts.

Wade and Vogel (2009) also talked about the internalization of public stigma and how self-stigma affects the attitude and behaviour not only of people around them but also of their own. Their study also pointed out how external factors like gender also play a role in self-stigmatization. They pointed out how men are more likely to self-stigmatize themselves for seeking professional help. In their research, they proposed the three main strategies to reduce the public stigma associated with therapy: Protest, Education, Contact. In the field of self-stigma, they suggested individuals should develop cognitive-behaviour skills, their symptoms should be normalized, and the image associated with therapy should be treated as that of empowerment.

Stephanie Knaak (2017) in her qualitative research with healthcare providers and mental health patients explains how stigmatization also works on multiple levels even throughout the healthcare sector and is asserted by those who come from powerful social groups. In her words, "stigma is conceptualized as a complex social process of labelling, othering, devaluation, and discrimination involving an interconnection of cognitive, emotional, and behavioural components."

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She explains how it simultaneously works on an intrapersonal, interpersonal, and structural level. Her work highlights how Negative attitudes and behaviours towards mental health patients by the healthcare staff results in patients devaluing themselves. The therapeutic pessimism about recovery and the lack of skills and awareness from the health staff, as explained by her, also acts as a barrier for the individuals who need therapy. The latter part of the work calls for workshops and de-stigmatization programs for the healthcare sector.

Frankie Mooney C.HT., in his book *The Value of Therapy for Your Mental Health*, very well states and explains all the causes, effects, and solutions to mental health problems all of us can face after going through some kind of trauma. He mentions all the benefits to seeking therapy: "From a broad perspective, the benefits of therapy can include an increased sense of joy, reduced social isolation, improved daily functioning, improved relationships, increased quality of life, decreased use of mental health services, and reduced doctor's visits for physical symptoms". Mooney C.HT. also mentions the various benefits associated with therapy in different sections, which include decreased anxiety, decreased depression, stress management, emotional support, improved relationships, appropriate management of behaviour, and an increase in hopefulness.

Hamre P, Dahl AA, Malt UF (1994) have written about the "*Public attitudes to the quality of psychiatric treatment, psychiatric patients, and prevalence of mental disorders*". Their study also proved that owing to this stigma, public opinion in Norway failed to estimate mental disorders, their prevalence, and even the respondents' vulnerability to mental illness. With a stratified random sample of 499 men and 564 women, the data validated their claim that there is prejudice when it comes to seeking treatment for mental health issues, in comparison to other forms of illness.

D. Bhugra, in their paper "*Attitudes towards mental illness"* mention that the connotations of mental illness with (religious) possession, witchcraft, sorcery, and later with mesmerism and hypnotism have aroused strong feelings among medical practitioners and the lay public. Throughout history, people suffering from mental illnesses have been maltreated and abhorred. The stigma isn't just associated with people suffering from these illnesses, but also with people working in areas of treating these conditions. The psychiatrists are seen as "modern-day witch doctors, wise and powerful and capable of great good and great harm" (Jones K., 1978)

Nunnally in his 6-year survey of public knowledge of mental health and illness discovered some common misconceptions linked with mental health. He surveyed 400 adults with 180 opinion statements and concluded that ". . . mentally ill (people) are regarded with fear, distrust, and dislike by the general public". In this study old and young people, regardless of educational status, considered mentally ill people as relatively dangerous, dirty, unpredictable, and worthless. *(*Nunnally J., 1961),

Several studies have been conducted by various scholars throughout the 20th century to highlight the nature, intensity, and consequences of stigmas associated with these mental illnesses and therapy seeking. Cumming & Cumming (Cumming J, Cumming E., 1965) suggest that the possible reasons for the stigma may be real or perceived. This perception is linked with factors such as age, sex, race, educational background, and socioeconomic status. The 22 people interviewed, after they were discharged, were said to have feelings of shame or inferiority that were linked with an expectation of discrimination or inferior treatment from society.

Stigmas associated with seeking mental therapy are inversely related to the level of education. Ramsey & Seiff in the late 1940s, *(*Ramsey G, Seipp M. *1948,* Ramsey G, Seipp M., 1948.) conducted a series of studies and found that on surveying a sample of 345 adults, 6 questions, subjects with higher educational and occupational status were less likely to stigmatize mental illnesses. They were also more optimistic about recovery.

Another study by the British Broadcasting Corporation audience research department (British Broadcasting Corporation [BBC], 1957) reveals that society's tolerance for people who are or had previously been mentally ill varied depending upon the circumstances. A large fraction of the sample was willing to interact with such people in areas of low personal involvement, such as interaction on the streets. However, with a rise in personal involvement, attitudes hardened considerably. Around half the sample surveyed would work with someone associated with mental illness and only a few felt that such an individual should be in a position of responsibility for others. A notable reason why people might be sceptical about seeking therapy is that society tends to be more tolerant of deviant conduct when it is not described using mental illness labels. Phillips (Phillips D., 1963) found that the largest increase in rejection rates occurred when a person had been admitted to a mental hospital. These people may be rejected, not because they have a health problem or because they are unable to help themselves, but because contact with a psychiatrist or mental hospital (often) defines them as mentally ill or insane.

The gender aspects of discrimination and stigma regarding mental illness are well analysed by Nasi Khan et al. with the target population of depressive patients of Pakistan. Conducting a cross-sectional study with a sample of 38 patients of Lahore, they use two different scales of measurement. These are: Discrimination and Stigma Scale (DISC) and the Internalised Stigma of Mental Illness Inventory (ISMI). The conclusions of their research indicate that the mean value of DISC for women is somewhat greater than men, but not to the level of significance.

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This reveals that the discrimination levels are not that different. However, the results of ISMI show that women tend to be more internally stigmatized than men, at a 0.05 level of significance. But an important limitation of this study is that it included only those people in the sample who had been sorting out some treatment.

II. METHODOLOGY

After the collection and cleansing of the data and some basic analysis, we perform the Chi-Squared Test to validate our assumption of differential behaviour with respect to therapy and finally regress the variable, "would you consider seeking therapy in the future" on the cost variables, namely, fear of judgement (direct stigma), monetary cost, no real benefit from therapy (indirect stigma).
To prove the validity of our model, the beta coefficients of the regression for the stigma variables should be statistically significant. We use Python's Scikit-Learn Library for the regression analysis.

III. MODEL

We have developed a game theoretical model which attempts to explain why people might not want to seek therapy, even if they accept that there is some benefit attached to seeking therapy. We measure this benefit in terms of the mental contentment one experiences after visiting a therapist.

A. Assumptions

We have based the model on a few simplifying yet realistic assumptions. The first one is that we have measured stigmatizing as a form of sadistic pleasure. The reason the stigma exists is that people place judgement on others. Rational beings do what gives them the maximum payoff. So, we have assumed that there is some positive payoff a person gets solely from judging the person who visits a therapist, while not visiting a therapist themselves. We can look at the second assumption in two ways. The first way is that there are only two individuals in our study. The other way to look at it is that the population of our study is divided into two groups of individuals with the same sets of strategies and payoffs. We can see this assumption in the General Equilibrium studies when we incorporate the Marshal Edgeworth box. The third assumption, again, is realistic. We assume that the payoff one person gets does not solely depend on what they do, but it also depends on what people around them do. So, the payoff one gets from visiting a therapist also depends on whether the other person in the model visits a therapist or not. The argument we propose for the inculcation of this externality takes us back to our first assumption. The cost of seeking therapy is assumed to be C.
If a person goes to a therapist, while all other people in the model also visit the therapist, the only payoff they get is the benefit from seeking therapy. We define this payoff by P. Similarly, if all the people in our model do not go to the therapist, no one will get any payoff. However, if one of them visits the therapist, while the other person does not, the person who visits gets a positive payoff P from their visit to the therapist, and a negative payoff N which we associate with the stigma. Similarly, the person who does not visit the therapist gets 0 payoff from that, but a positive payoff J in terms of the sadistic pleasures associated with stigmatizing the seekers of therapy. The final assumption upon which we base our model is not an assumption, but a misunderstood fact. We assume that therapy is not just for people diagnosed with chronic depression or other mental illnesses. Anyone can visit a therapist and different people might benefit to a different extent from therapy. Some can have a really high positive payoff, while others can have a low, but positive payoff from seeking therapy. There may also be some who receive a negative payoff from therapy.
We study two kinds of stigmas around therapy. First, direct stigma, or the judgement one faces from the society because they seek therapy. Second, indirect stigma, in the form of the presumption or the stereotype that therapy is not effective. This is a part of indirect stigma because this perception arises from lack of access to information about the importance of mental health.

B. Matrix

Keeping in mind the above assumptions, the 2-person 2-strategy game for our model can be depicted as:

Table 1

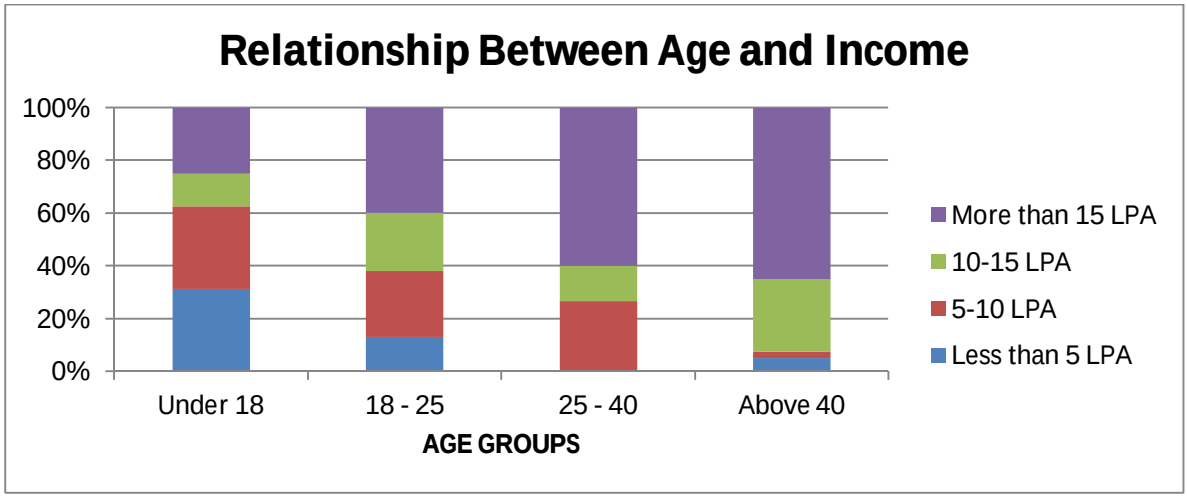
	Visiting	Not Visiting
Visiting	(P-C, P-C)	(P-C-N, J)
Not Visiting	(J, P-C-N)	(0,0)

We assume that in the absence of stigma, the benefit from therapy P is greater than the cost of seeking therapy C. Hence, P-C is positive.

If one person visits the therapist, while the other person does not, the payoffs are P-C-N, J, respectively.
Depending on the values of P, J, N (C is constant for all players), the unique Nash Equilibrium for this model differs. If P-C, or the benefit from seeking therapy (when the other person also visits the therapist and hence does not attach any stigma), is greater than J, then the equilibrium is when both the players visit the therapist. This is because there is no scope for profitable unilateral deviation. Similarly, if J exceeds P-C, Not Visiting becomes the dominant strategy for both players and the Nash Equilibrium changes to the strategy pair "Not Visiting" for both. This equilibrium, however, is Pareto Inferior to the previous one.
This model explains our claim that although therapy is for all, and not just people diagnosed with chronic depression, and it can be beneficial for everyone, the reason most people are unaware of its benefits is because of the stigma associated with visiting a therapist. We also try to validate our claim that the monetary cost of therapy alone does not prevent people from seeking it, but the stigma associated with seeking therapy, adds to the real cost and makes seeking therapy a dominated strategy.

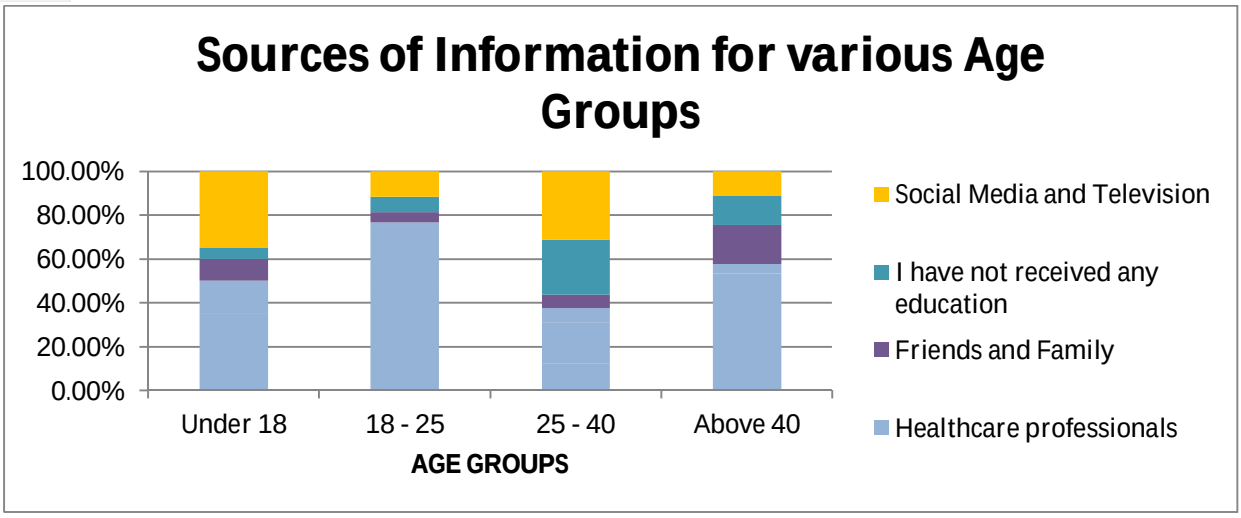
C. Regression Analysis for the Validation of the Model

Our model claims that the decision to seek therapy or not depends on whether others seek therapy or not, because in essence, that affects how their peers perceive them for seeking therapy. The other factor being the monetary cost of therapy. If the real benefit from therapy exceeds the monetary cost and the real cost in terms of the stigma, only then does a person seek therapy.
To validate our model, we convert the variable, "Would you consider visiting a therapist in the future" into a dummy variable with the values 1 if Yes, and 0 if is not Yes. The rationale behind taking the Maybes and Nos together is that they measure their hesitancy when it comes to seeking therapy. We regress this dichotomous dummy variable as a Linear Probability Model (LPM) on the variables which measure the costs of seeking therapy, or in other words, the reasons why people might not seek therapy. The costs include the fear of being judged by the society for seeking therapy, the monetary cost of seeking therapy, and the fact that there may or may not be any real benefit from seeking therapy.
The first out of these three costs measures stigma directly, in the form of being judged. The second variable measures the cost in money terms, but the third variable measures another aspect of stigma, that is, the notion that therapy is not required and has no real benefits to offer.
We hypothesize to see a negative relationship between the dependent variables and the variables measuring stigma (that is, the first and the third cost variables). The relationship with the cost of seeking therapy can also be expected to be negative, but for our model, we have filtered the data in a manner that it contains all age groups other than 18-25. For all the age groups included in the study, along with the given income of the respondents, we hypothesize the cost variable to not be significantly different from 0. This is because most of the respondents in our data earn more than 15 LPA. This argument can be verified by the following figure.



Graph 1

The rationale for excluding the age group 18-25 is that this age group is one of the first generations to have been educated on the importance of mental health and is less hostile towards those who seek therapy. This can be validated by looking at the proportion of respondents in the 18-25 age group who have gained knowledge regarding mental health through the official modes in the following figure. The official modes over here refer to healthcare professionals, educational institutions and literary sources like journals, books and articles.



Graph 2

Here we have grouped Healthcare professionals, Journals and Educational Institutions in one group, and we can see that in the column of 18-25, around 75% of the total respondents in that category have received some form of official education regarding mental health. Before regressing, we check whether the assumptions stated above hold for the data we have collected or not. Then, we check for multicollinearity between the independent variables.

D. Relationship Between INCOME and Willingness to pay for Therapy

In our society, therapy is a luxury that only a few can afford. Therapy demands great commitment in terms of time and money. Monetary cost is one of the greatest barriers to mental health treatment. In India, an average one-hour therapy session costs 1000-3000 INR.[1] Given the stigma associated with therapy, along with fact that mental health is not prioritised, most people are reluctant to spend a large amount of money on mental health treatments, as they would on physical treatments. In our survey, we try to study the relationship between one's income and their willingness to pay for an hour-long therapy session. We divide our population into 4 income brackets (According to their Annual Family Income in INR): Less than 5 LPA, 5-10 LPA, 10-15 LPA, and more than 15 LPA. We then ask them how much they would be willing to pay for a one-hour long therapy session, comprising of 4 categories: Less than 500, 500-1000, 1000-3000, More than 3000.

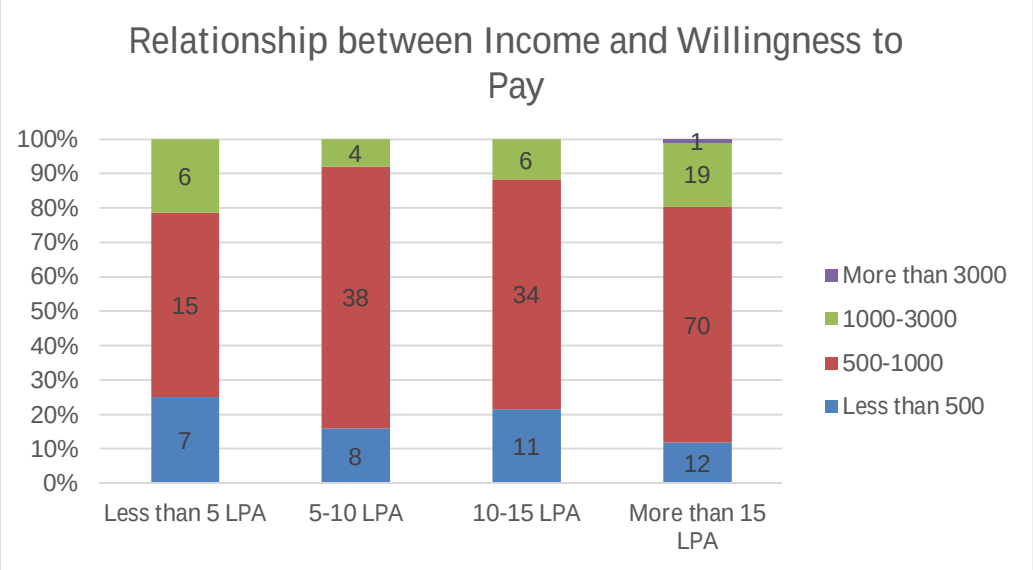
Table 2

	Willingness to pay				
Annual Family Income	Less than 500	500-1000	1000-3000	More than 3000	Grand Total
Less than 5 LPA	7	15	6	0	28
5-10 LPA	8	38	4	0	50
10-15 LPA	11	34	6	0	51
More than 15 LPA	12	70	19	1	102
Grand Total	38	157	35	1	231

"An average therapy session would cost you something between Rs 1,000-Rs 3000 per session" – fit.thequint; 6 Sept 2018
https://fit.thequint.com/mind-it/counsellor-psychologist-or-psychiatrist-depression-suicide-therapy

Table 3

	Willingness to pay				
Annual Family Income	Less than 500	500-1000	1000-3000	More than 3000	Grand Total
Less than 5 LPA	25%	54%	21%	0%	100%
5-10 LPA	16%	76%	8%	0%	100%
10-15 LPA	22%	67%	12%	0%	100%
More than 15 LPA	12%	69%	19%	1%	100%
Grand Total	16%	68%	15%	0%	100%



Graph 3

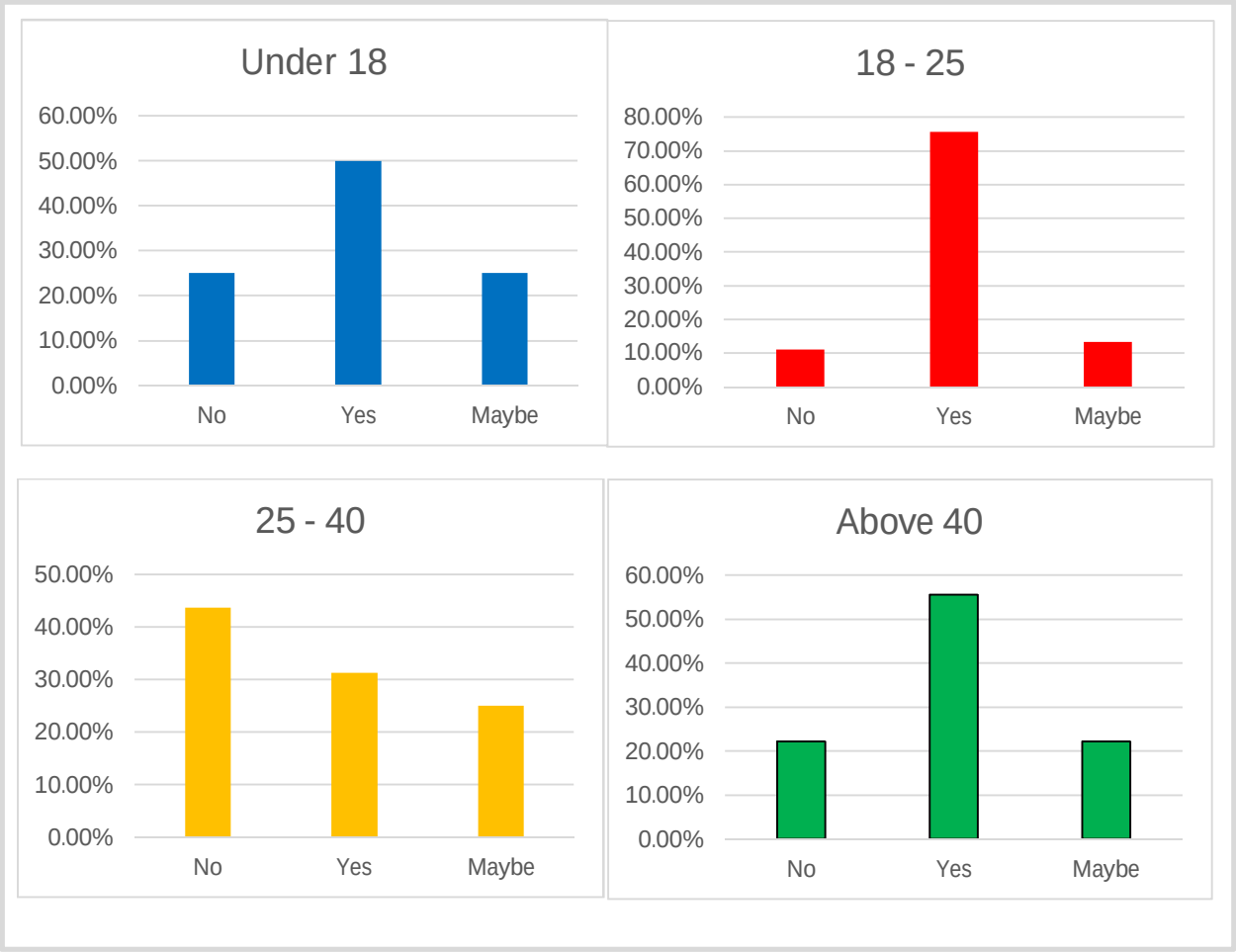
As we can see, there is no clear relationship between income and willingness to pay. Regardless of the income bracket, a large majority of people from each income group are willing to pay between 500-1000 INR for a one-hour therapy session, which is less than the average cost of therapy in India. We speculate that due to the taboo and stigma around therapy, one receives a certain negative payoff, which reduces the overall positive payoff from seeking therapy, thus reducing the monetary value one associates with therapy. This fact can be supported by the third assumption of our model, i.e., the payoff one person gets does not solely depend on what they do, but it also depends on what people around them do.

Another notable observation is that the highest proportion of people willing to pay 1000-3000 INR lies in the “Less than 5 LPA” income bracket. From Graph 1, we can see that most people belonging to the “Less than 5 LPA” bracket belong to the 18-25 age category. As stated before, these people are one of the firsts to have been educated on the importance of mental health and are less hostile towards those who seek therapy, thus, the monetary value they associate with therapy is relatively higher.

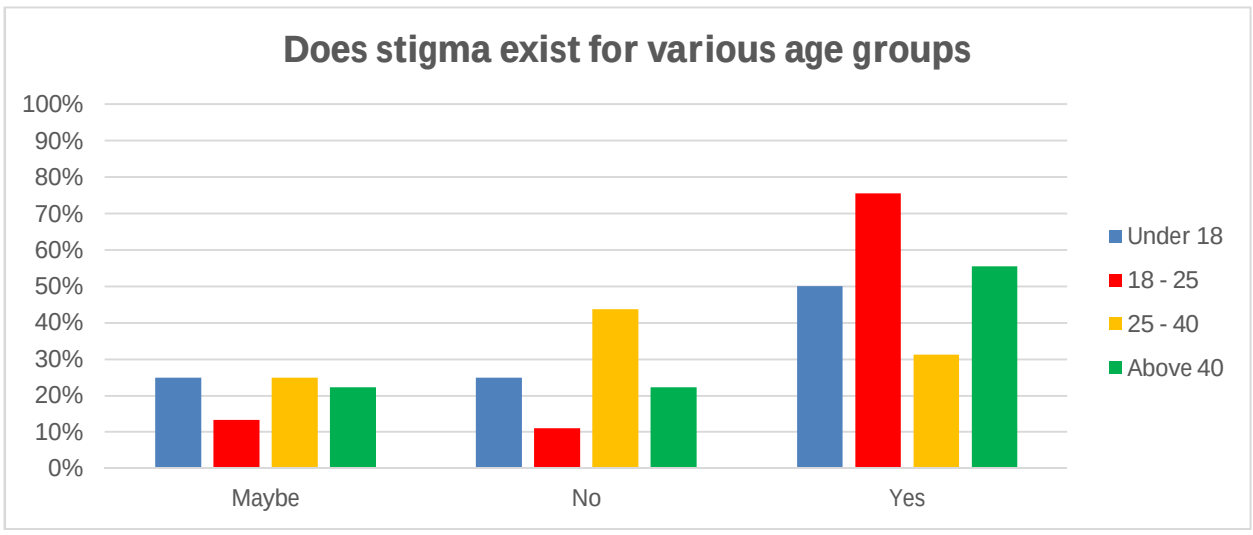
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E. Relationship Between Age and Stigma around Therapy

Our population has been divided into 4 categories- Under 18, 18-25, 25-40 & Above 40. The responses we got from "Is there a stigma around therapy?" were either Yes, No or Maybe. Below are the responses of each age group.



Graph 4



Graph 5

If there was no relationship between age and the person's view on stigma around therapy, all of these graphs (in Graph 4) would have been the same, but through these graphs (Graphs 4 & 5), we notice that there is a difference between responses of different age groups. To conclude that there exists a certain relationship between these 2 variables, and that the relationship is statistically significant, we use the Chi-Squared Test.

Below is the Contingency Table of our responses.

Table 4

	Age				
Is there Stigma Around Therapy?	Under 18	18 – 25	25 - 40	Above 40	Grand Total
Maybe	5	23	4	10	42
No	5	19	7	10	41
Yes	10	130	5	25	170
Grand Total	20	172	16	45	253

To test the Null Hypothesis that the proportions are equal:

$$H_0: \pi_1 = \pi_2 = \pi_3 = \pi_4$$

against the alternative that not all four proportions are equal:

$$H_1: not\ all\ \pi_j\ are\ equal\ (where\ j = 1, 2, 3, 4$$

We use Observed Frequencies and Expected Frequencies table to calculate the χ^2_{STAT} Test Statistic.

Table 5

Expected Frequencies	Under 18	18 - 25	25 - 40	Above 40	Grand Total
Maybe	3.32	28.55	2.66	7.47	42
No	3.24	27.87	2.59	7.29	41
Yes	13.44	115.57	10.75	30.24	170
Grand Total	20	172	16	45	253

The expected frequency assumption is met as all the frequencies are at least 1.

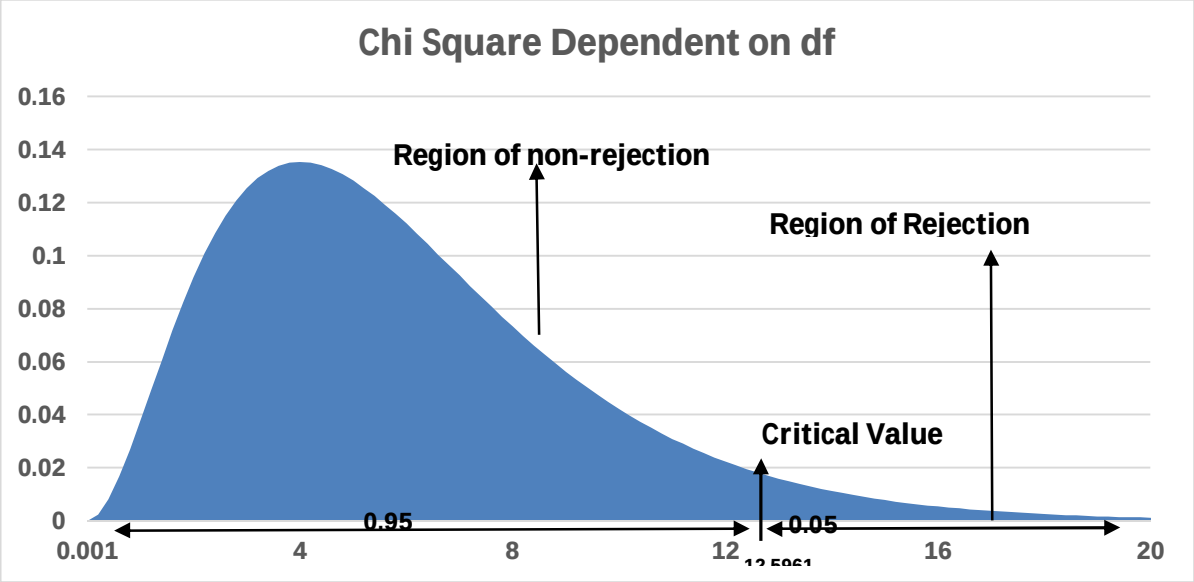
The calculations are as follows

Table 6

Deviations	Under 18	18 - 25	25 - 40	Above 40
Maybe	0.85	1.08	0.68	0.86
No	0.95	2.82	7.49	1.01
Yes	0.88	1.80	3.08	0.91

Table 7

Level of Significance	0.05
Degrees of Freedom	(3-1)×(4-1) = 6
Critical Value	12.5916



Graph 6

We calculate the χ^2_{STAT} Test Statistic by the formula:

$$\chi^2_{STAT} = \sum_{All\ Cells} \frac{(f_0 - f_e)^2}{f_e}$$

where,

f_0 = observed frequency in a particular cell of a 3x4 contingency table
f_e = expected frequency in a particular cell if the null hypothesis is true

Therefore, we get

Table 8

Chi-Square Test Statistic	22.40615918
p-value	0.001021833

Because the p-value is less than the level of significance, we reject the Null Hypothesis. Further, this p-value indicates that there is 0.1% chance that there will be differences this large or larger among the four sample proportions, if the population proportions for the different age groups are equal. Thus, there is sufficient evidence to conclude that the age groups are different with respect to the proportion of people who are likely to believe that there exists stigma around therapy.This difference in the behaviour between different age groups comes from the differential access to the sources of information related to mental health. The age group 18-25 can be seen to have had the greatest access to these sources and hence, the existence of the fear of judgement, and the stigma in general, is less significant in this age group.

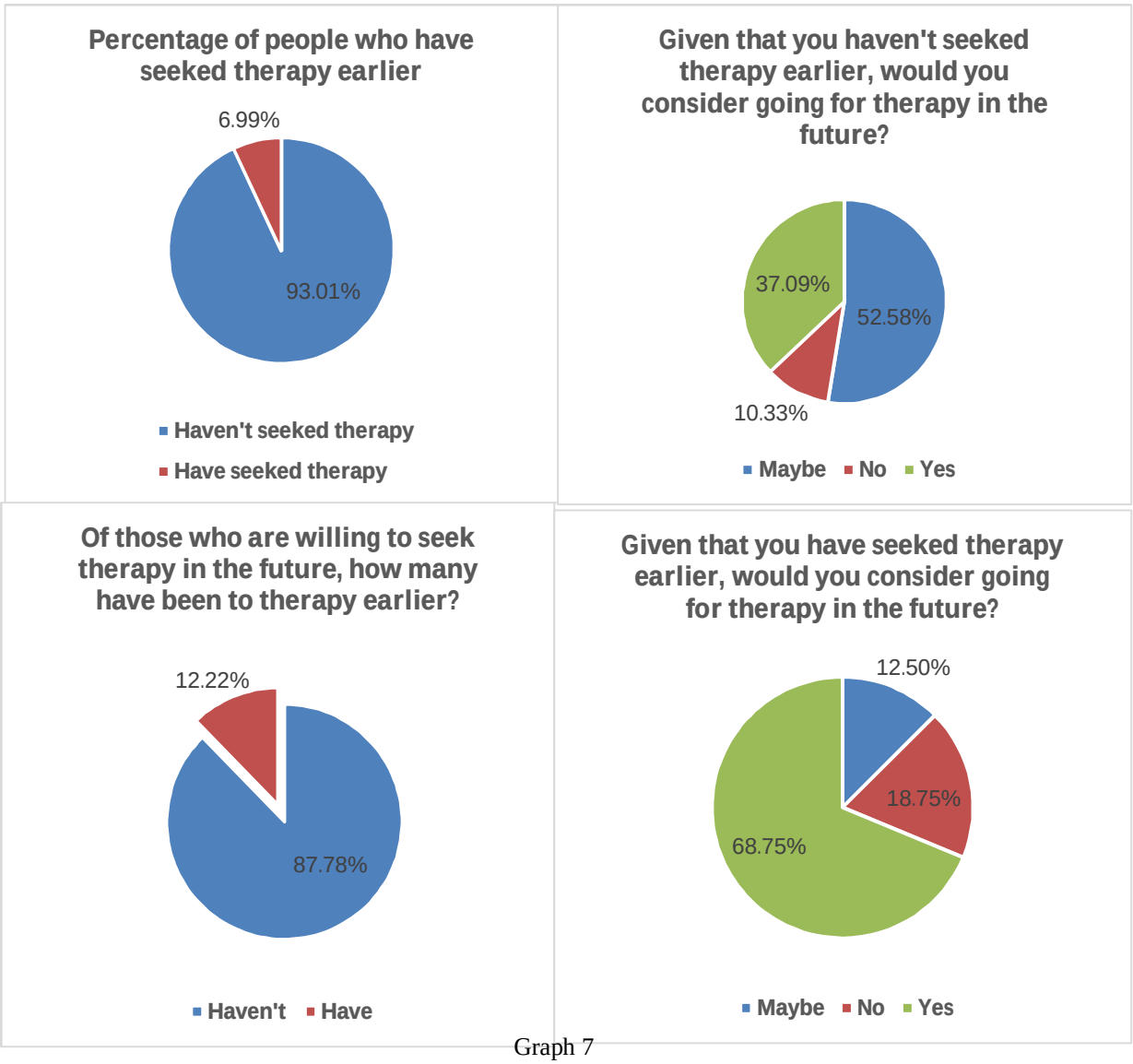
F. Decision Making When It Comes To Therapy

From the data collected, we can draw several conclusions about how people make their decision when it comes to seeking therapy. While a variety of factors have been taken into consideration, we try to analyse results from two specific columns of our dataset. We first consider how many people have previously been to therapy, and compare that data with how many people would consider going for professional therapy in the future. From the table given below, it is easy to gauge that the highest proportion of the population has *not* been to therapy (approx. 93%). However, most are not against the idea of seeking therapy and would probably consider availing the service in the future. Almost half of those who have been to therapy earlier marked their preference as 'maybe' for considering to go to therapy in the future, irrespective of whether they have been to therapy earlier or not.

Table 9

	Would you consider going for therapy?			
Previously Seeked Therapy	Maybe	No	Yes	Grand Total
No	48.91%	9.61%	34.50%	93.01%
Yes	0.87%	1.31%	4.80%	6.99%
Grand Total	49.78%	10.92%	39.30%	100.00%

Comparing these two variables with another variable in the data set, namely "No real benefit" under "Factors stopping you from seeking therapy", we observe only 3 respondents who said they have been to therapy earlier but would not consider going for therapy in the future since they did not find it beneficial. This helps us come closer to the conclusion we were trying to draw, that the primary reason people do not wish to seek therapy is usually not based on a previous bad experience. Rather, it's based on an assumption that therapy would not provide a real benefit. There are 14 respondents who have not been to therapy previously, and do not consider going for therapy in the future. On a scale of 1 to 5, 1 being the lowest and 5 being the highest, they rate "no real benefit" under "Factors stopping you from seeking therapy" between 3 and 5. These are clear indications of the adverse effects stigma has around the topic of mental health and approaching therapy. Although there are a multitude of other reasons which stop people from seeking therapy, one cannot leave out stigma from the picture.



Graph 7

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G. Checking for Multicollinearity

We calculate the correlation coefficients for the independent variables. In case some of the independent variables have high positive or negative correlation, we need to change our model.

H. Correlation Matrix

	Fear of Judgement	Really High Monetary Cost	No Real Benefit from Therapy
Fear of Judgement	1.00000	0.263823	0.109489
Really High Monetary Cost	0.263823	1.00000	0.117080
No Real Benefit from Therapy	0.109489	0.117080	1.00000

Constructed using Python's Pandas Library

As is demonstrated in the correlation matrix, partial correlation for all variables is really low. Hence, there is no problem of multicollinearity in our model. We can go ahead with the regression.

The data, after cleansing and filtering consists of 67 responses. The number of parameters including the intercept are 4.

We perform the regression using Python's machine learning library Scikit-Learn, which yields the following regression coefficients:

Intercept 0.71029025857 (No statistical relevance)

I. Beta Estimates

Fear of judgement -0.09605072
Really high monetary cost 0.05334614
No real benefit from therapy -0.15823965

J. Standard Error of Beta Estimates

Fear of judgement 0.048686
Really high monetary cost 0.044396
No real benefit from therapy 0.042808

K. t Values

Fear of judgement -1.9728750476454204
Really high monetary cost 1.201607869615697
No real benefit from therapy -3.6964997323450204

L. Sample Regression Line

$y = 0.71029025857 - 0.09605072x_1 + 0.05334614x_2 - 0.15823965x_3$

se= 0.048686 0.044396 0.042808

t value = -1.97 1.20 3.7

Count $R^2 = 0.746269$

Since our model expects the fear of judgement to have a negative relationship with the willingness to visit a therapist, or in this case, the probability of the respondent visiting a therapist, we use the single-tailed t test. Since n = 67, p = 4, df = 63. The coefficient is significant at 5% level of significance.

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Our estimate of beta 2, however, which measures the partial slope of the high monetary cost of visiting a therapist is insignificant even at 10% level of significance. The Beta coefficient for really high monetary cost for the age groups in our study does not appear to be significantly different from 0, which is what we expect when the majority in our sample earns more than 15 LPA.
The estimate for the slope coefficient of the no real benefit from therapy is significant at any level of significance, with a t score of -3.7. The regression results validate the model in stating that the stigma associated with therapy, in the form of being judged and the lack of awareness of the benefits of therapy make it difficult for the majority to benefit from it. The society is stuck in a Pareto Inferior Nash Equilibrium. The model's R2 value is 0.23413602460148686. A value so low appears to suggest that the model is inferior, but a low R2 value is justified by the fact that the model is a Linear Probability Model. This is because all y values are either 0 or 1, but the regression gives a continuous function between 0 and 1.

We check the significance using the F-test.

$$\text{F Statistic} = \frac{R^2/k-1}{1-R^2/n-k}$$

$$= \frac{0.234/4-1}{1-0.234/67-4}$$

= 6.420012788919553, which is significant at 3, 63 degrees of freedom.

Hence, the model works well in explaining the relationship between the costs of therapy in terms of stigma and money, and the final decision whether to seek therapy or not.

IV. CONCLUSION

In our study, we collected data from 251 respondents to validate the game-theoretical model that we had defined. We hypothesised that the age groups have different notions and behave differently when it comes to seeking therapy. This hypothesis was tested at five percent level of significance using the Chi-Squared test. The reason for this difference was the differential access to sources of information related to mental well-being and stigma. This assumption of ours was validated by our data as the people belonging to the age group of 18-25, who we hypothesised to have had the greatest exposure to the information relating to the importance of mental well-being. Thus, this age group cannot be a part of the two-person game defined in our model, as people belonging to this age group, will always go for therapy. Thus, for our model, we regress the dummy variable for planning to visit a therapist on the three cost factors: Fear of judgement (direct stigma), Cost of seeking therapy (monetary aspect), No real benefit from therapy (indirect stigma).
The resulting regression gave us statistically significant estimates for the partial slope parameters of the direct and indirect stigma (fear of judgement and no real benefit from therapy), but an insignificant estimate for the monetary cost variable in the dichotomous Linear Probability Model. Both the stigma variables have a negative beta coefficient, the R2 value is significant and hence the model holds. Thus, the game-theoretical model set up by us holds true. The probability of the person's decision to seek therapy depends on the real benefit from therapy as perceived by them on the margin. If it exceeds the monetary cost and the fear of judgement by those who do not seek therapy because of the indirect stigma associated with it. This leads to a Pareto Inferior Nash Equilibrium.

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ANNEXURE

We have collected primary data on the following variables:

1) Age:
   a. Under 18
   b. 18-25
   c. 25-40
   d. Above 40

2) Gender:
   a. Male
   b. Female
   c. Other
   d. Prefer not to say

3) Annual Family Income:
   a. Under 5 LPA
   b. 5-10 LPA
   c. 10-15 LPA
   d. More than !5 LPA

4) Have you ever been to a therapist?
   a. Yes
   b. No

5) If not, would you consider visiting a therapist in the future?
   a. Yes
   b. No
   c. Maybe

6) Do you feel there is a stigma associated with seeking professional psychotherapy?
   a. Yes
   b. No
   c. Maybe

7) On a scale of 1 to 5, 1 being the lowest, how much would the following factors weigh in stopping you from seeking professional therapy?
   a. Fear of judgement
   b. Really high monetary cost
   c. No real benefit from therapy

8) From where have you received any knowledge or education about psychotherapy?
   a. Educational Institutions
   b. Journals, books, articles, and other literary sources
   c. Social Media and Television
   d. Healthcare professionals
   e. Friends and Family

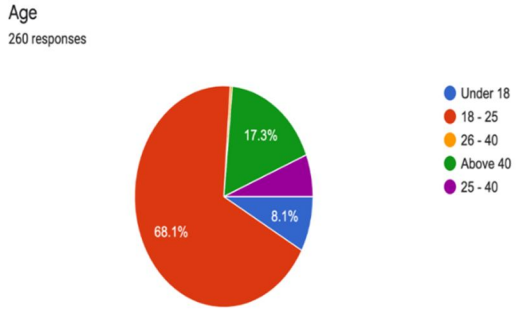
9) According to you, who should be seeking professional therapy?
   a. Those suffering from mental illnesses
   b. Those going through life problems
   c. Anybody who wants to seek therapy

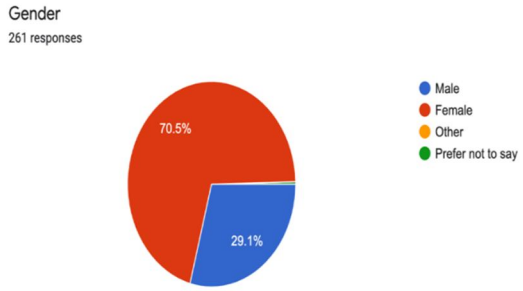
10) How much would you be willing to pay for a one-hour therapy session in person? (Given that the average is Rs.1000- Rs.3000)
   a. Less than 500 Rs.
   b. 500-1000 Rs.
   c. 1000-3000 Rs.
   d. More than 3000 Rs.

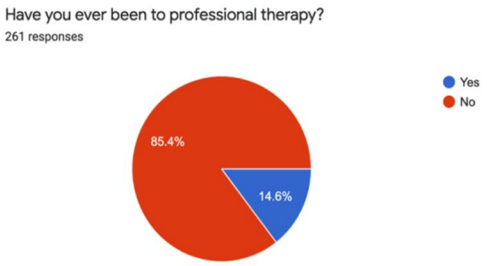
11) How effective do you think the following modes for seeking professional therapy are? (1 being the least effective, 5 being the most effective)
   a. Therapy in person
   b. Telephonic sessions
   c. Email-based sessions
   d. Online video sessions

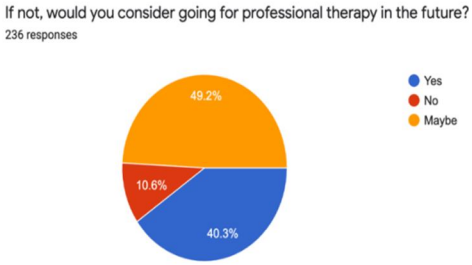
12) Do you agree that seeking therapy has the following positive/adverse effects?
   a. Increased quality of life
   b. Improvement in physical health
   c. Reduced social isolation
   d. Improved daily functioning
   e. Facing societal judgement
   f. No proper recovery

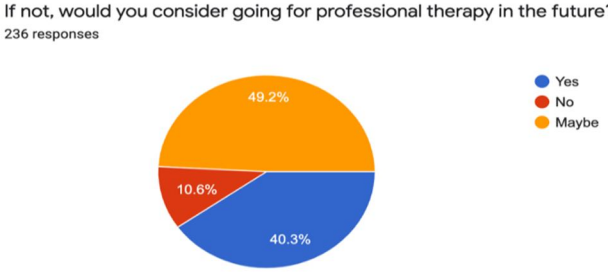
FORM RESPONSES – A SUMMARY OF RESULTS



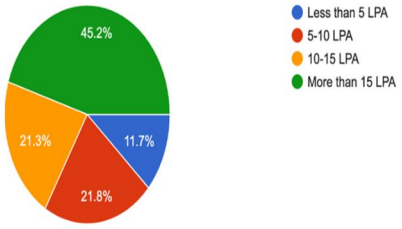




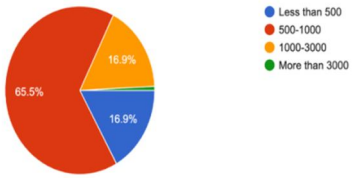




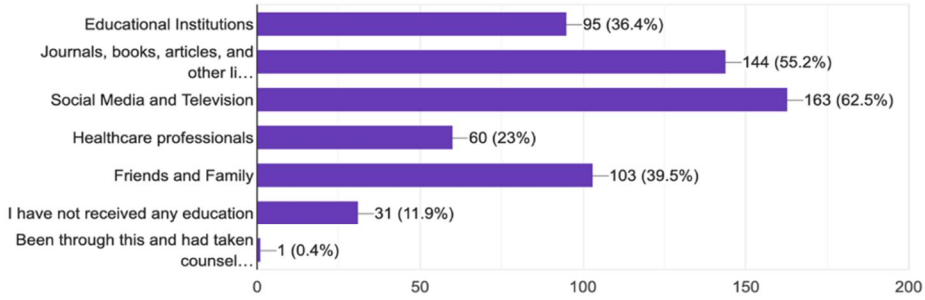
Family income (annual)
239 responses



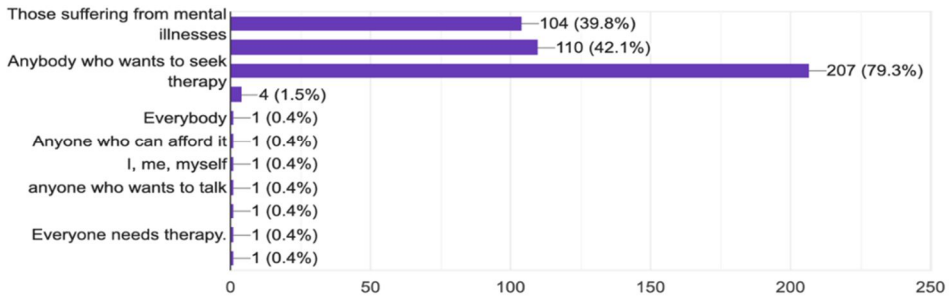
How much would you prefer to pay for a 1 hour psychotherapy session in-person? (given that the average is Rs. 1000-3000)
261 responses



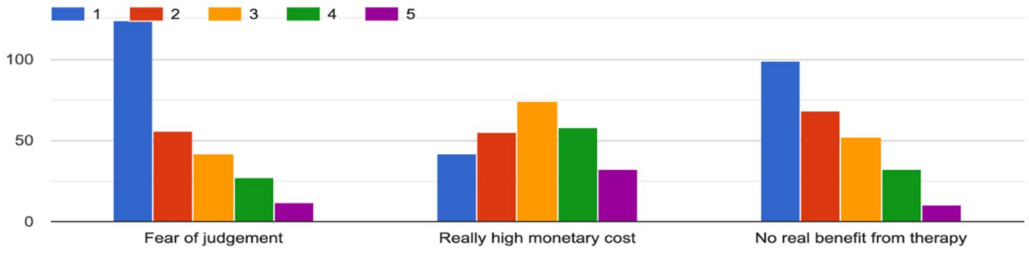
From where have you received any knowledge or education about psychotherapy?
261 responses



According to you, who should be seeking professional therapy?
261 responses



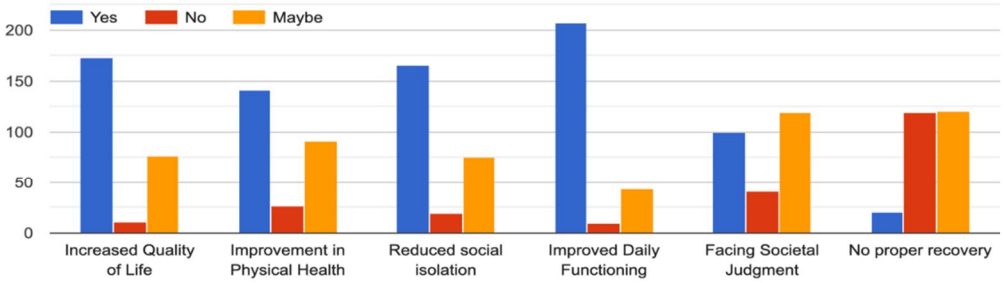
On a scale of 1 to 5, 1 being the lowest, how much would the following factors weigh in stopping you from seeking professional therapy?



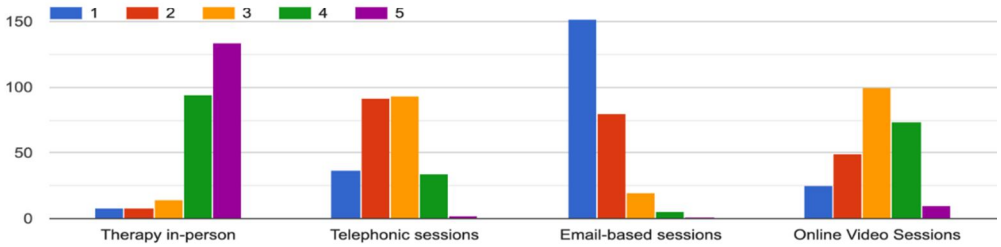
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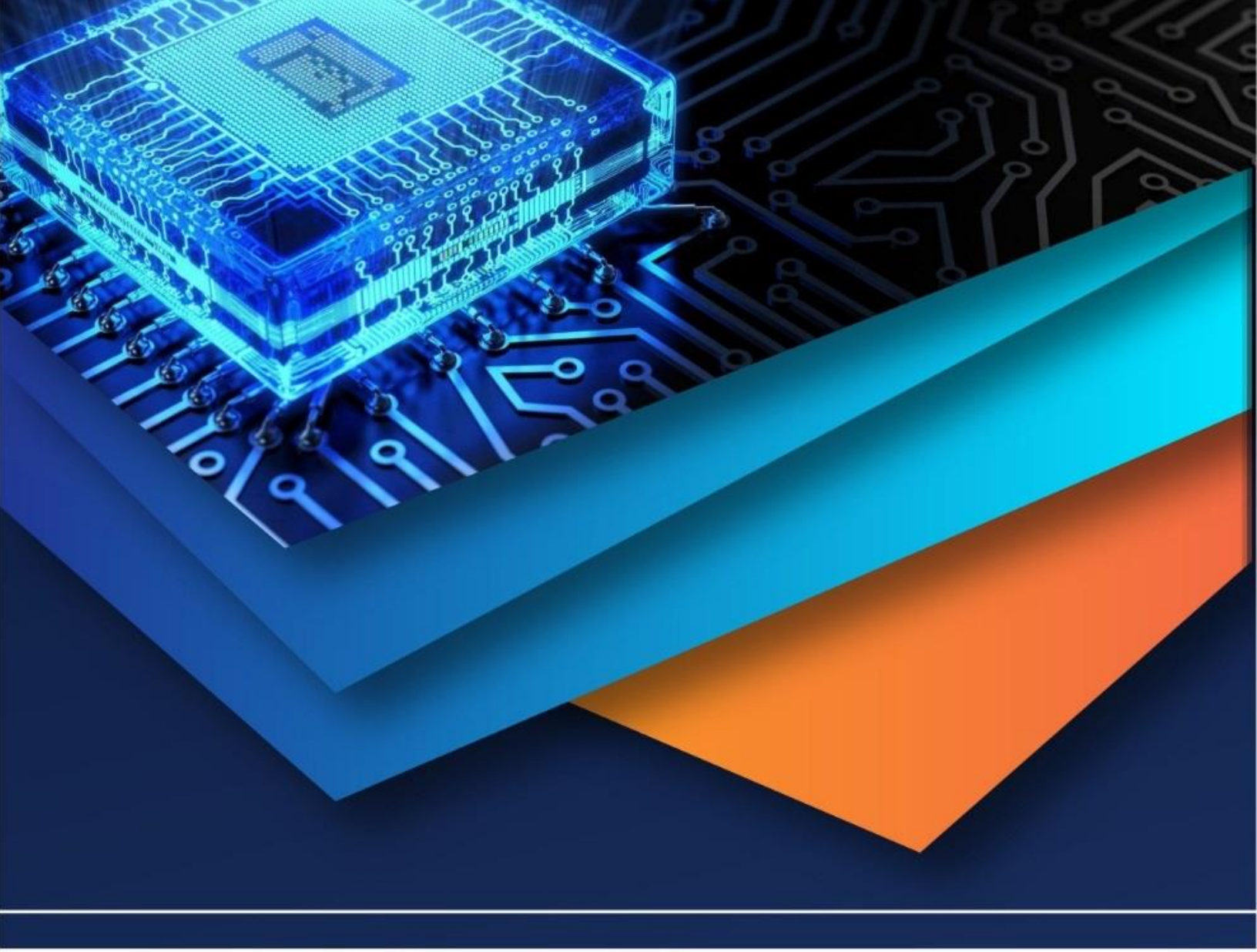
Do you agree that seeking therapy has the following positive/adverse effects?



How effective do you think the following modes for seeking professional therapy are? (1 being the least effective, 5 being the most effective)



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