

Future Time Perspective and Frustration Intolerance in Medical students

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Abstract

Background: The future perception of students is affected by a series of events happening throughout their course of studies. The objective of this study is to measure Future time perspective (FTP) and Future intolerance (FI) among medical students during the COVID-19 lockdown.

Materials and Methods: It was a descriptive cross-sectional study done from January 15, 2020 to July 20, 2020 among MBBS students of Rawalpindi medical University. The questionnaire consisted of 1) Socio-demographic details, 2) Future Time Perspective scale and 3) Frustration Discomfort scale. An online survey was done using Google Forms. An ANOVA was run to check for differences in FTP and FI between the classes. Bivariate analysis for continuous variables was applied. The data were analysed using the Statistical Package for Social Sciences (SPSS) v.23.0 (IBM, Armonk, US).

Results: Mean age of participants was 21.8 (SD=1.66) with majority females 331(58.4%). The mean FTP score and mean FI scores were 50.8(SD=19.43) and 91.46(SD=17.65) respectively. Final-year students had the highest mean score (Mean=57.94(SD=7.72)) for FI. On the other hand, mean scores for FDS were highest in first-year students (Mean=102.89 (SD=13.52)) while lowest in fourth-year students (Mean=81.73(SD=17.49)) with P=.005. There was a significant difference in the dimensions of Emotional Intolerance and achievement among females and males. Bivariate analysis showed a significant negative correlation was found between FTP and the dimension of discomfort intolerance ($r = -0.158, p < 0.001$), while a significant positive correlation was found between FTP and the dimension of achievement ($r = 0.225, p < 0.001$).

Conclusion: Our study concludes that final-year students have a much higher tolerance level for adversities. Furthermore, they also have a much more positive perspective and a clearer vision regarding their future.

Keywords: Medical students, COVID-19, Frustration, Surveys and Questionnaires, Future time perspective scale, future discomfort scale.

Introduction

Everyone's perception of the future is connected to an array of societally, organizationally, and personally essential behaviours and outcomes.¹ Future Time Perspective (FTP) is the degree to which and how the future is anticipated and integrated into an individual's psychological presence.² FTP is a successful motivator in three required fields of life: education, work, and health, and it is strongly influenced by the person's strategies of coping with stress in his present life.³ Personality traits of a man and FTP have a significant correlation with each other.¹ On the other hand, Frustration Intolerance (FI) is the incapacity or disinclination to persist in an activity due to the disagreeable feelings associated with the task.⁴ Frustration tolerance is an essential feature of psychological well-being.⁵ It plays a vital role in Rational Emotive Behaviour Therapy (REBT) and is one of the two main types of assumptions, along with self-worth assumption, theorized to lead to emotional disturbance.⁶ These factors, i.e., FTP and FI, play a central role in defining the future and psychological behaviors of a student's life, respectively.

In a study conducted by Tahira et al. using the Frustration Discomfort Scale (FDS), there was a significantly positive association of FI with depression, anxiety, and hostility.⁷ Also, Harrington et al. concluded in his study that beliefs regarding FI are as significant as self-worth and must not be overlooked.⁸ In another study, Jerry et al. found that students who have problems tolerating frustration might practice increased difficulties with procrastination, which could negatively impact achievement.⁴ Similar results are shown in a study conducted on university students, stating that frustration intolerance is an important predictor of delaying problems.⁹ Regarding FTP, many authors contributed their efforts in explaining its importance. While applying Eson's technique, Teahan et al. suggested that the high academic achievers are more optimistic towards their future.¹⁰ In the same way, Hilpert et al. concluded from his study that students who operate from an FTP that is conducive to strong associations between desired futures and present activities easily find worth in their school work and attempt to develop elaborate knowledge structures.¹¹

In a third world country like ours, the undergraduates face many difficulties in defining their FTP. Moreover, due to the longer duration of the course and higher

academic pressure, there might be a comparatively higher level of insecurity in medical students about their future. A study done on final year medical students in Pakistan during COVID-19 pandemic stated that students were more concerned about their future and lost confidence to be a competent doctor, especially male students.¹²

Given this general background, we expect to see a positive FTP scoring in senior year students than the junior ones and negative scoring on FDS in senior students. Under these expectations, we will have a more transparent concept of how confident the medical students of different years are about their future and to which level they can endure stressful situations. With this information, we can apply different counselling strategies for our medical students and guide them in their career development. The objective of this study is to measure Future time perspective (FTP) and Future intolerance (FI) among medical students during the COVID-19 lockdown.

Materials and Methods

Study Design and Duration:

It is a descriptive cross-sectional study done from January 15, 2020 to July 20, 2020 using simple convenient sampling technique.

Setting:

Students enrolled in Bachelor of Medicine, Bachelor of Surgery (MBBS) studying at Rawalpindi Medical University, Pakistan.

Sample Size:

The following simple formula was used for calculating the adequate sample size:

$$n = Z_{1-\alpha/2}^2 \cdot SD^2 / d^2$$

Where n is the sample size, $Z_{1-\alpha/2}$ is the statistic corresponding to level of confidence, SD is standard deviation of the variable and d is precision (corresponding to effect size). In our study sample size calculated was 208, with $Z_{1-\alpha/2} = 1.96$ at 95% Confidence Interval (CI), $SD = 16.4913$ and $d = 5\%$.

Data Collection:

An online questionnaire was formed on Google Forms website. Its link was shared among all five-year students via social media after selection through simple consecutive sampling. Incomplete forms were excluded from the study. Out of 600 forms distributed, 567 were correctly filled, giving a correct-response rate of 94.5%. Only MBBS students of RMU and age greater than 18 years old were included in this study.

Detained and/or migrated students and those with incomplete forms were excluded from the study.

Instruments and Scales:

A self-structured and self-administered questionnaire was used having three parts; 1) socio-demographic details 2) The Future Time Perspective (FTP) scale and 3) Frustration Discomfort scale. The sociodemographic questionnaire, consisting of; age, gender, boarder or non-boarder, year of study, and living in a rural or urban area, was applied.

The Future Time Perspective (FTP) scale is a 10-item scale scored on a 7-point Likert scale (very untrue; 1, untrue; 2, somewhat untrue; 3, neutral; 4, somewhat true; 5, true; 6, very true; 7). The last three questions (i.e., 8-10) are then reverse scored. The individual scores were then added for a total FTP score out of 7013. The Cronbach's alpha value for the scale was 0.659, indicating an acceptable reliability.

The Frustration Discomfort scale was developed by Harrington in 2005 to measure frustration intolerance (FI)¹⁴. This is a 28-item scale scored on a 5-point Likert scale based on whether the participant agrees or disagrees with a given statement (strongly disagree; 1, disagree; 2, neutral; 3, agree; 4, strongly agree; 5). The individual item scores were then added for a total frustration intolerance score. Frustration intolerance is also further divided into the dimensions of discomfort intolerance, entitlement, emotional intolerance, and achievement. The score for each dimension is obtained by adding the scores from 7 individual items of the scale. The Cronbach's alpha value for the scale was 0.823, suggesting a reasonable reliability.

Statistical Analysis:

Reliability analysis was conducted, and separate Cronbach's alpha values were calculated for both of the scales used in the study. Chi-square/contingency tables were made for the demographic variables. An ANOVA was run to check for differences in the FTP and FI scores between the classes. Further differences between groups were explored with the help of Tukey's HSD test. Independent sample t-tests were used to identify differences in the FTP and FI scores between genders. Finally, bivariate analysis was done to check for a correlation between the continuous variables under study. In all statistical analyses, P-values less than or equal to 0.05 were accepted as statistically significant.

Ethical Statement:

Both the scales used in this study are in the public domain. Each participant signed an informed consent form before undertaking the questionnaire. The synopsis was presented to and approved by the Ethical Review Board of Rawalpindi Medical University.

Results

A total of 236 males (41.6 %) and 331 (58.4 %) females participated in the study, making a male-female ratio of 1:1.4. The mean age of the participants was 21.18 (S.D = 1.66). 368 (64.9 %) lived in hostels whereas 199 (35.1%) were day-scholars. A majority (n=488, 86.1 %) belonged to urban areas while the rest (n=79, 13.9 %) to rural areas. Table-I shows further sociodemographic characteristics of participants.

Table-I Sociodemographic characteristics of participants

Characteristics	Male		Female		Total		p-value
	N	%	n	%	n	%	
City							0.003
Rural	45	19.1%	34	10.3%	79	13.9%	
Urban	191	80.9%	297	89.7%	488	86.1%	
Class							0.000
First Year	40	16.9%	75	22.7%	115	20.3%	
Second Year	63	26.7%	51	15.4%	114	20.1	
Third Year	70	26.6%	46	13.9%	116	20.5%	
Fourth Year	29	12.3%	78	23.6%	107	18.9%	
Fifth Year	34	14.4%	81	24.5%	115	20.3%	
Boarding status							0.115
Hostel	162	68.6%	206	62.2%	368	64.9%	
Day-scholar	74	31.4%	125	37.8%	199	35.1%	

The mean FTP score was 50.8 (SD = 19.43). The mean FTP score for fifth-year was 57.94(SD=7.72). The

ANOVA showed a significant difference between the mean FTP score and the study year for MBBS (F =

8.736; $p < 0.001$). As variance was equal, a posthoc analysis was done, and Tukey's HSD test was conducted. The result showed a significant difference between the mean FTP scores between the students of; 1st year and 5th year ($p = 0.029$), 2nd year and 4th year ($p = 0.029$), 2nd year and 5th year ($p < 0.001$), 3rd year and 4th year ($p = 0.003$), and 3rd year and 5th year ($p < 0.001$). The following figure shows the means for the different years.

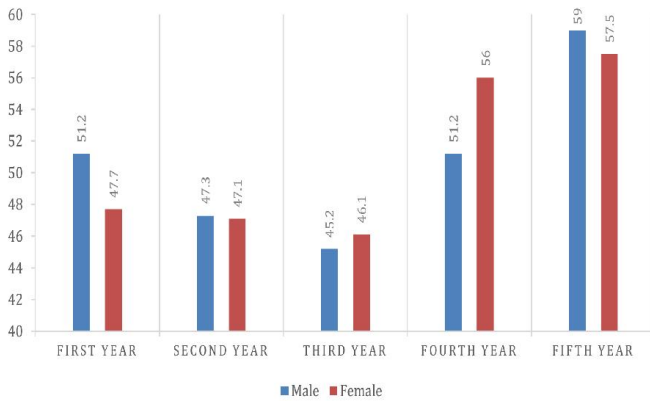


Figure-1 Mean Future-Time Perspective Scores

The overall mean frustration intolerance score was 91.46 (S.D = 17.65). The mean FI scores for fifth-year were 85.09(SD=17.59), and 102.89(SD=13.52) for first-year. An ANOVA was run to find a difference in the overall frustration intolerance scores or its dimensions between different classes. A significant difference was found between the classes regarding the mean total FSD score and its dimensions. A Tukey's HSD test was

run, which revealed further significant differences between the groups.

The total FDS scores for first-year were significantly higher than those for; 2nd year ($p = 0.043$), 3rd year ($p < 0.001$), 4th year ($p < 0.001$), and 5th year ($p < 0.001$). The scores for 2nd year were also significantly higher than those for; 3rd ($p = 0.008$), 4th ($p < 0.001$), and 5th year ($p < 0.001$). The mean score for 3rd year was significantly higher than that of the 4th year students ($p = 0.001$) but not significantly different from that of the 5th year students($p=0.067$).

There were significant decreases in the mean score for discomfort intolerance from 1st year to 4th year ($p < 0.05$). However, the reduction from 4th year to 5th year was not significant ($p = 0.123$). Similarly, the mean score for entitlement also decreased significantly between each year ($p < 0.005$), i.e., they were all significantly different from one another. The emotional tolerance dimension, however, showed mixed results. The mean for first year was only significantly higher than that of 4th ($p = 0.001$) and 5th year ($p = 0.05$). Similarly, the mean for second year was also higher than that of 4th ($p < 0.001$) and 5th year ($p = 0.001$). The mean score for the dimension of achievement was higher in the 1st and 5th year. The mean scores for them were not significantly different from one another ($p = 1$) but were significantly higher than the rest of the years of study ($p < 0.001$). The mean achievement score was also significantly lower in 4th year than in 2nd year ($p < 0.001$), 3rd year ($p < 0.001$), and 5th year ($p < 0.001$).

Table-II Difference between the years of study (class) in the scores for frustration intolerance and its dimensions

Factor	First Year		Second Year		Third year		Fourth Year		Fifth Year	
	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D	Mean	S.D
Frustration Intolerance	102.89	13.52	97.00	16.13	89.97	14.71	81.73	17.49	85.09	17.59
Discomfort Intolerance	27.09	3.39	24.92	4.26	22.97	3.97	20.54	5.32	19.14	4.84
Entitlement	26.59	4.32	24.83	4.52	22.93	4.71	20.81	4.57	18.57	4.61
Emotional Intolerance	23.20	4.93	23.97	5.09	22.10	4.85	20.51	5.32	21.32	5.85
Achievement	26.01	4.21	23.27	4.43	21.96	4.38	19.86	4.85	26.05	4.77

Note: *=significant value ($p < 0.05$)

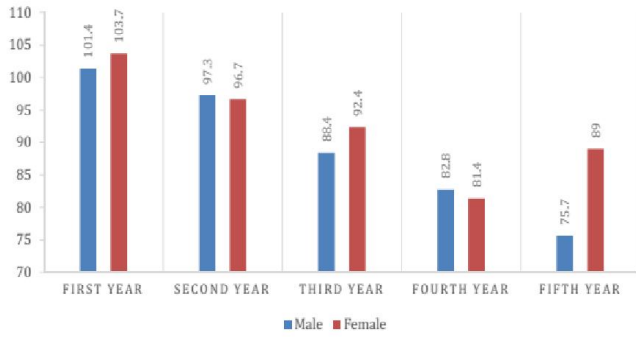


Figure-2 Mean Frustration Intolerance Scores

Independent sample t-tests were conducted to find the difference between the genders for the various dimensions of FDS and FTP scores. There was a significant difference in the scores for the dimension of Emotional Intolerance in males (M = 21.69, SD = 5.22) and females (M = 22.64, SD = 5.40); $t(565) = -2.101, p =$

0.036. Similarly, the means for achievement were also significantly different between males (M = 22.97, SD = 4.74) and females (M = 23.84, SD = 5.31); $t(565) = -1.991, p = 0.047$.

Bivariate correlation between FTP scores and FDP scores and age was done, and spearman’s rho values were calculated. A significant negative correlation was found between FTP and the dimension of discomfort intolerance ($r = -0.158, p < 0.001$), while a significant positive correlation was found between FTP and the dimension of achievement ($r = 0.225, p < 0.001$). Age was also significantly related to overall frustration intolerance, discomfort intolerance, entitlement, emotional intolerance, and FTP scores. Table-III shows further details of the correlations between these variables.

Table-III Correlation between Future time-perspective and frustration intolerance and its dimensions

	Future time perspective	Frustration Intolerance	Discomfort Intolerance	Entitlement	Emotional Intolerance	Achievement	Age
Future time perspective	--						
Frustration Intolerance	-0.010	--					
Discomfort Intolerance	-0.158**	.816**	--				
Entitlement	-0.081	.857**	.682**	--			
Emotional Intolerance	.003	.837**	.571**	.6909	--		
Achievement	.225**	.785**	.468**	.542**	.614**	--	
Age	.299**	-.331**	-.451**	-.449**	-.123**	-.078	--

Note. **correlation is significant at the .01 level(two-tailed)

*correlation is significant at the .05 level(two-tailed)

Discussion

Future time perspective and Frustration intolerance have always been a part of the lives of medical students. This study, in particular, focuses on how these change with time during medical education. Frustration intolerance means the difficulty in accepting that all our wishes or desires are not fulfilled in reality.¹⁶ It is an irrational belief related to emotional and behavioral issues based on the theory of rational emotive behavior therapy.¹⁷

Our study shows some interesting results. Future-time perspective scores increase as a student progresses from third to fifth year of medical education. To understand this result, we need to know that medical students study basic sciences for the first two years in

Pakistan. Thus, they do not visit hospitals and wards and do not find themselves in the scenario they have imagined themselves in. However, from third year onwards, students start visiting different wards and familiarize themselves with the hospital setting. They can finally visualize themselves in the place they worked so hard to get to. By the time they reach the fourth and final year, they have seen the various levels of progression and the clinical hierarchy they must progress through to fulfill their ambitions. Furthermore, while going through their ward rotations in different specialties and subspecialties, they have assessed their attributes and have a clearer idea of what they are compatible with. Thus, the students have become more confident in their abilities and have acquired a more precise road map for the

years ahead. In a similar study conducted in Germany, students at the very start of their studies were more interested in surgery. Still, as they progressed to later years, they grew more interested in internal medicine, citing reasons such as the promise of a safe job and income.¹⁸ This corroborates that the fifth-year students have a lot of exposure, and they know which specialty is best for them. This means they have specific goals and are confident about their future.

There is a gradual decrease in the frustration intolerance scores as we move from first to fifth year, which means fifth-year students become more tolerant and are not easily frustrated. A study conducted at the University Medical Center Hamburg-Eppendorf reported higher levels of perceived stress and higher levels of anxiety and depression among first year medical students.¹⁹ However, Shantanu et al. found that final year students who displayed positive coping strategies had lesser stress and general psychopathology.²⁰ There are many reasons for higher levels of frustration in first-year students, one of them being "change in the curriculum." The syllabus and books studied in MBBS are entirely different from the higher secondary school education. So, students feel stressed and frustrated because they do not know how to cope with such a curriculum. This is in line with a study which reported that life stressors along with medical school stressors lead towards reduced medical education satisfaction, ultimately resulting burnout among students.²¹ Also in a study, it was mentioned that high academic demands from the parents can be a cause of frustration in students⁹. Since the curriculum changes and then emotional pressure imparted by the parents induces frustration in the students. Furthermore, there was a minimal difference in the scores for "emotional intolerance" and "achievement" in the students of all attending years.

The scores for entitlement are also high for first-year medical students. We have to keep in mind that getting into a medical college is not an easy task. There is tough competition among students, which naturally creates a sense of entitlement in those who are successful in this endeavor. Our study also shows that first-year students have a higher "discomfort intolerance" score than fifth-year students. This means that first-year students cannot adequately withstand a stressful situation and are quickly unsettled. This correlates with a similar study, which states that students' typically perceived stress increased within the last ten years.¹⁸ Also, at the beginning of the first year, there are many changes in a student's life like leaving home, living on their own, establishing new

relationships, examinations at medical college, and above all, dissecting corpses. In all these situations, first-year students' coping efforts fail, which causes discomfort in them.

A significant correlation was observed between age and future time perspective, which means that the higher the age, the broader is the future time perspective. The reason for this might be, with increasing age, there is increased exposure to the 'hierarchy' of the hospital environment, which allows a student to refine and focus their goals. Furthermore, an inverse correlation was observed between frustration intolerance, and age. The logic behind this might be the learning of better coping abilities and pressure handling over time.

Because of lockdown due to the Covid-19 pandemic, we could not use any technology to randomly select participants or get the questionnaires filled in the classroom. Therefore, this convenience sample produced the loss of randomization as a limitation to the e-study and the failure to volunteer and leave no control over respondents. Furthermore, the study is cross-sectional and possesses all of their inherent drawbacks, including, but not limited to, the lack of longitudinal follow-up. In future studies, it would be interesting to observe how the variables under study change in the same group of students as they progress through their education.

Conclusion

The mean scores for FI were higher in the earlier years of medical education. The FTP scores also showed a decline for the first two years and then a rise in the following years, which indicates that fifth-year students have a much higher tolerance level for adversities. Furthermore, they also have a much more positive perspective and a clearer vision regarding their future.

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