Original Article

Happiness index of medical students and related factors in Andaman and Nicobar Islands, India

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Abstract:

BACKGROUND: Happiness is an important factor for everyone's good health and general well-being. Medical students need to manage a lengthy medical curriculum, clinical postings, and the stressful environment of hospital setting, which may have considerable effects on their happiness. No such studies have been conducted in the remotely located Andaman and Nicobar (A and N) islands. Hence, the current study was conducted to determine the level of happiness and associated factors among medical college students of the Andaman and Nicobar islands.

METHODS AND MATERIALS: A cross-sectional study was conducted among 315 medical students of the A and N islands. The happiness of students was measured using the Oxford Happiness Questionnaire. Chi-square test and multiple logistic regression were used for data analysis.

RESULTS: Among all the students, 42.5% were happy. There was a significant association between happiness and the relationship of students with family and friends, physical exercise, spiritual beliefs, the presence of stress, and traumatic events. The multiple logistic regression revealed that good relationship with friends increased the odds of happiness of students significantly with an adjusted odd ratio (OR) of 3.204 (1.641–6.257), whereas the presence of stress decreased the happiness of students significantly with an adjusted OR of 0.430 (0.254–0.730).

CONCLUSION: Good relations with friends emerged as a positive predictor of happiness, whereas stress emerged as a negative predictor of happiness among the students. Hence, human relationships, stress management, physical exercise or sports, and orientation to spiritual health should be given emphasis in the medical curriculum.

Keywords:

Happiness, medical students, physical exercise, social relations, spirituality, stress

Introduction

Happiness is very important for the health, well-being, and life satisfaction of everyone. Being happy from the inside is the utmost necessity to be healthy, cultivate in professional life, and ultimately help mankind.[1] The medical field is one of the fields that due to clinical period, the pressure of hospital work, and stressful environment has considerable effects on happiness and job performance. Various studies have shown that age, gender, education, income, and marital status are effectual on positive emotions and happiness levels.[2-4] Identifying all such factors help governments perform necessary reforms to promote happiness in their societies.

The United Nations Sustainable Development Solutions Network started publishing the World Happiness Report in 2012 to rank countries by how happy their citizens perceive themselves to be. India was ranked 136th in 2022.[5] Andaman and Nicobar (A and N) islands are a unique group of 572 islands located in the Bay of Bengal region. It has a combination of rich beaches, rising hinterland, and dense

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How to cite this article: Kumar D, Yadav P, Joshy VM, Thomas B. Happiness index of medical students and related factors in Andaman and Nicobar Islands, India. J Edu Health Promot 2023;12:318.

equatorial forests, which makes it a favorite tourist destination of India and it seems one of the happiest places in the world. However, A and N islands have recorded the highest suicide rate among all states/UTs in India since 2019–2021. Hence, it becomes quite relevant to study the happiness level of students in the A and N islands.[6]

Very few studies have been conducted regarding the happiness of medical students in India and abroad after the pandemic of COVID-19, which had various psycho-social, health, and economic impacts on the well-being of students, healthcare professionals, and the general population.[7,8] The COVID-19 pandemic might have affected the quality of life and happiness level of medical students, which in turn might impact the receipt of medical education by medical students and the quality of health care in the long term. No such study regarding the happiness of medical students has been conducted in A and N islands, which have unique geographical conditions and demography. Hence, the present study was conducted to study happiness and associated factors among medical students on the island so that a strategy for the promotion of the happiness of students can be formulated.

Subjects and Methods

A cross-sectional study was conducted among the medical college students of the A and N islands. The study was conducted from August–October 2022. A and N islands have only one medical college in the islands. All MBBS students from the first year to final years were included in the study, whereas the students who were seriously ill were excluded from the study. The study adopted a non-probability-based voluntary sampling technique. Hence, the online questionnaire was sent to 440 students of college via Google forms, out of which 315 students responded voluntarily. The reminders were sent to the students thrice who did not respond to the questionnaire.

Data collection tools
The happiness of students was measured using the Oxford Happiness Questionnaire (OHQ). OHQ is a 29-item measure of happiness. It has a rating scale ranging from 1 (strongly disagree) to 6 (strongly agree). Out of 29 questions, 12 questions were reversely scored. The lowest score participant could get on a single question was 1 and the highest score was 6. The total score of happiness of participants was calculated by adding the total scores for the 29 questions (considering the reverse items) and dividing it by 29. The students with a score of <4 were considered not happy, whereas students with a score of ≥4 were considered happy. OHQ is a validated scale with high reliability (Cronbach's alpha $r = 0.90$ and above).[9,10]

Various factors such as age, gender, socioeconomic status using the Modified Kuppuswamy Scale 2021,[11] residence, year of MBBS, relationship with family and friends, physical exercise including sports, yoga, gym, walking at least 5 days a week, stay in the hostel, belief in God/higher power, smoking/smokeless tobacco, drinking, presence of stress, and traumatic events in past 6 months were studied in relation to the perception of students regarding their happiness. The traumatic events included any event or series of events, which caused a lot of stress and were marked by a sense of horror, helplessness, serious injury, and the threat of serious injury or death.[12]

Statistical analysis
Data were entered in a Microsoft Excel sheet and were analyzed using the SPSS version 19.0 statistical software. The association between all covariates and the happiness of students, crude odds ratio (OR), and 95% confidence interval (CI) was assessed using a simple univariate analysis. The multiple logistic regression analysis was performed to evaluate the effects of variables after adjustment for the covariates. The effect was presented as adjusted OR and 95% CI and a *P* value less than 0.05 was considered to be statistically significant. Spearman's correlation was used to analyze the relation between the aggregate percentage of marks with happiness among students.

Ethical considerations
Before conducting the research, the necessary explanations were provided to college students about the purpose of the research and instructions on how to complete the happiness questionnaires. Voluntary informed consent was taken online from participants who were involved in the study. The responses were recorded anonymously and the confidentiality of responses was maintained. The study was approved by Institutional Ethics Committee ANIIMS Port Blair (approval no. ANIIMS/IEC/2021-22/62).

Results

The study regarding happiness among the medical college students of the A and N Islands involved 315 students. Among all students, 134 (42.5%) were found to be happy, whereas the rest of the students, that is, 181 (57.5%) were not happy. The mean OHQ happiness score of the students was 3.80 ± 0.72.

The mean age of the students was 20.51 ± 1.322 years. Table 1 depicted that the majority (*n* = 245) of students belonged to the 18.1–21.0 years of age group, whereas 70 (22.2%) students belonged to the 21.1–24.0 years of age group. There was no significant difference in the happiness level of students of these two groups (*P* value = 0.446)

and the crude OR (95% CI) was 1.23 (0.72–2.13). The percentage of happiness among girls was 44.1%, whereas the percentage of happiness among boys was 39.2%. The difference in happiness among both genders was not significant (*P* value = 0.446) and the crude OR (95% CI) was 1.22 (0.76–1.98). From the upper socioeconomic status, 53.3% of students were happy, whereas, from the middle socioeconomic status, 57.9% of students were happy. The difference between the happiness levels of students from different socioeconomic status was not significant (*P* value = 0.824) and the crude OR (95% CI) was 1.2 (0.57–2.56).

The study involved students from the first year to the final year. Out of 315 students, 108 students were in the first year, whereas 70, 77, and 60 students were in the second, third (pre-final), and fourth year (final), respectively. The maximum percentage of happy students in the first year was 51.9%, whereas the final year had the least % (28.3%) of happiness as shown in Figure 1. Chi-square test revealed that there was a significant difference in the happiness of students of different years (*P* value = 0.030).

The relationship of students with family members and friends in relation to happiness is depicted in Table 2. The students with good relations with family members were happier (46.6%) as compared to the students with no good relations with family members (23.9%). This difference was also statistically significant with a *P* value of 0.0009 and the crude OR (95% CI) was 3.17 (1.56–6.45). Similarly, the students with good relations with friends were happier (51.1%) as compared to the students with no good relations with friends (17.5%). This difference

was also statistically significant (*P* value = 0.00001) and the crude OR (95% CI) was 4.92 (2.62–9.24).

Among all the students, 110 (35%) students were hostlers and 205 (65%) students were day scholars. The hostler students were comparatively happier (50.9%) as compared to day scholars (38%). The difference between the happiness of day scholar students and hostler students was statistically significant (*P* value = 0.028) and the crude OR (95% CI) was 1.69 (1.06–2.7). In contrast to this, there was no significant difference in the happiness of the students who were active (44.2%) on social media as compared to the students who were not active (35.9%) on social media (*P* value = 0.231) and the crude OR (95% CI) was 1.41 (0.8–2.49).

The association of happiness with various variables such as physical exercise, belief in God, presence of severe stress, and presence of traumatic events in the last 6 months are described in Table 3. Physical exercise including sports, yoga, gym, and walking at least 5 days
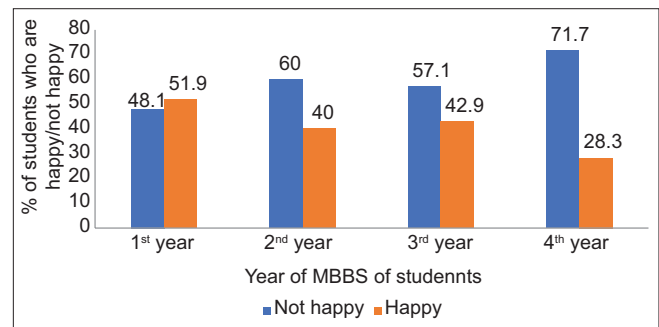

Figure 1: Happiness among medical students of different years of MBBS in Andaman and Nicobar islands

Table 1: Association of socio-demographic characteristics with happiness among medical college students of A and N islands

Variable	Categories	Not happy *n* (%)	Happy *n* (%)	Total	Crude odds ratio (95%CI)	*P* (Chi-square)
Age (in years)	18.0-21.0	138 (56.3%)	107 (43.7%)	245	1.23 (0.72–2.13)	0.446
	21.1-24.0	43 (61.4%)	27 (38.6%)	70		
Gender	Girl	119 (55.9%)	94 (44.1%)	213	1.22 (0.76–1.98)	0.409
	Boy	62 (60.8%)	40 (39.2%)	102		
Socioeconomic status	Middle	120 (42.1%)	165 (57.9%)	285	1.2 (0.57–2.56)	0.824
	Upper	14 (46.7%)	16 (53.3%)	30		

Table 2: The association of social relationships and social media activity with happiness among medical college students of A and N islands

Variable	Categories	Not happy *n* (%)	Happy *n* (%)	Total	Crude odds ratio (95% CI)	*P* (Chi-square)
Relations with family members	Good	141 (53.4%)	123 (46.6%)	264	3.17 (1.56–6.45)	0.0009
	Not good	40 (76.1%)	11 (23.9%)	51		
Relations with friends	Good	115 (48.9%)	120 (51.1%)	235	4.92 (2.62–9.24)	0.00001
	Not good	66 (82.5%)	14 (17.5%)	80		
Residence	Hostler	54 (49.1%)	56 (50.9%)	110	1.69 (1.06–2.7)	0.028
	Day scholar	127 (62.0%)	78 (38.0%)	205		
Social media activity	Active	140 (55.8%)	111 (44.2%)	251	1.41 (0.8–2.49)	0.231
	Inactive	41 (64.1%)	23 (35.9%)	64		

Table 3: The association of personal history-related factors with happiness among medical college students of A and N islands

Variable	Categories	Not happy *n* (%)	Happy *n* (%)	Total	Crude odds ratio (95% CI)	*P* (Chi-square)
Physical activity	Yes	117 (52.5%)	106 (47.5%)	223	2.07 (1.24–3.47)	0.005
	No	64 (69.6%)	28 (30.4%)	92		
Belief in God/higher power	Yes	160 (55.7%)	127 (44.3%)	287	2.38 (0.98–5.78)	0.049
	No	21 (75.0%)	7 (25.0%)	28		
Severe stress in past 6 months	Yes	136 (69.4%)	60 (30.6%)	196	0.27 (0.17–0.43)	0.0001
	No	45 (37.8%)	74 (62.2%)	119		
Traumatic events in past 6 months	Yes	52 (82.5%)	11 (17.5%)	63	0.22 (0.11–0.44)	0.0001
	No	129 (51.2%)	123 (48.8%)	252		

a week was performed by 223 (70.8%) students. The physically active students were happier (47.5%) than the inactive students (30.4%). There was a statistically significant difference between the happiness of physically active and inactive students (*P* value = 0.005) and the crude OR (95% CI) was 2.07 (1.24–3.47). Most students (*n* = 287) believed in God/higher power. These students were comparatively happier (44.3%) than students who did not believe in a higher power/God (25.0%) and the difference between these two groups was statistically significant (*P* value = 0.049) and the crude OR (95% CI) was 2.38 (0.98–5.78).

Stress was faced by 196 (62.2%) students in the last 6 months. The students who had stress were comparatively less happy (30.6%) as compared to students who had no stress (62.2%). The difference was found statistically significant (*P* value = 0.0001) and the crude OR (95% CI) was 0.27 (0.17–0.43). Traumatic events were faced by 63 (20%) students in the last 6 months. The students who had traumatic events were comparatively less happy (17.5%) as compared to students who did not face any traumatic event (48.8%). The difference was found statistically significant (*P* value = 0.0001) and the crude OR (95% CI) was 0.22 (0.11–0.44) [Table 4]. The mean aggregate marks of students in last year were 78.68 ± 52.286. There was a positive correlation between the aggregate marks of students and the happiness of students (Spearman's correlation coefficient® = 0.121 and *P* value = 0.032).

In Table 4, multiple regression analysis results were performed to calculate adjusted OR (95% CI). Multiple regression analysis revealed that among all significant variables, only two variables, that is, relationship with friends and stress were found significantly associated with the happiness of medical students. There was a significant association between good relationship with friends and happiness, with the adjusted OR (95% CI) =3.252 (1.625–6.510), which meant that the students having good relations with friends were 3.252 times more likely to be happy than students not having good relations with friends. There was a significant association of stress with happiness, with the adjusted OR (95% CI)

Table 4: The multiple regression analysis showing adjusted Odds ratio (95% CI) of medical student happiness for various variables (*n*=315)

	Adj. odds ratio	CI		*P*
		Lower	Upper	
Hostel stay	1.631	0.966	2.757	0.067
The relationship with family	1.237	0.549	2.791	0.608
The relationship with friends	3.252	1.625	6.510	0.001
Belief in a higher power/God	1.978	0.737	5.306	0.175
Year of MBBS	1.216	0.729	2.027	0.454
Physical exercise	1.657	0.926	2.965	0.089
Experience of stress	0.422	0.249	0.716	0.001
Experience of traumatic events	0.501	0.229	1.092	0.082

CI) =0.422 (0.249–0.716), which meant that the students having stress were 58% less likely to be happy than students having no stress.

Discussion

The current study was conducted to determine happiness levels and related factors among medical college students of the A and N islands. Out of the total students, 42.5% students were found to be happy and the mean OHQ happiness score of the students was 3.80 ± 0.72. The happiness of the medical students in the A and N islands was lesser as compared to studies conducted among students from various countries such as India (Meerut), Iran, UAE, Turkey, and China.[1,13-16]

The lesser happiness among the medical students in the islands could be attributed to various reasons. A and N islands are a group of 572 islands, which are remotely located in the Bay of Bengal region with less connectivity to the mainland and the world. The connectivity among different islands across the sea, access to the Internet and mobile network, and source of entertainment were comparatively lesser as compared to the mainland. These factors might have caused problems for students in making frequent contact with friends and family members and decreased their happiness levels. Another important reason is that, unlike other studies, the current study is conducted in the post-COVID era in 2022. The psycho-social impact of the COVID-19 pandemic might have impacted the happiness level of students

as the COVID-19 pandemic caused many stressful and traumatic events such as COVID-19 infection, hospital admission, and even the death of family members or relatives of many individuals in the islands.[17]

The associations of various socio-demographic and other factors with happiness were also analyzed. The happiness of female and male students was similar in A and N islands. Various other studies reported that happiness was similar among male and female students.[1-3,18,19] On the contrary, females were happier than males in other studies[4,20] and educated men were happier than educated women in Hongkong study,[21] which indicated cultural factors played important role in the happiness of different gender. The current study indicated that both female and male students were treated equally, equally accepted, and were provided gender-neutral learning enlivenment in colleges and islands.

The difference between happiness of different age groups of 18–21 years and 21.1–24 years was found not significant as the range of different age groups was not wide enough. Similar results were found in various other studies also.[18,20] In contrast, another study in which the age of participants was from 15–29 years found that the happiness of students increased with the increasing age of youth.[22]

Socioeconomic status did not have much influence on the happiness of students in the islands as various other factors such as social relations, stress-free enlivenment, peace of mind, and physical and mental health also played an important role in happiness. Kahneman *et al.* (2006) in their study explained that high-income/SES individuals were not associated with greater happiness as they had slightly higher tension and stress.[23] Another study also showed that an increase in absolute income beyond a certain threshold level might not bring more happiness.[24] In contrast, the students with higher socioeconomic status were found to be happier in some studies.[25,26] In some countries, depressive symptoms were found in university students, which belonged to low socio-economic status.[25] In the current study, all students belonged to the upper and middle class, no students belonged to the lower socio-economic status. Hence, no significant difference was found between the happiness levels of students belonging to a different class.

Among all the students, the maximum percentage of happy students was from the first year, whereas the least happy students were from the final year. The first-year medical students completed the foundation course a few months ago in the college as per the National Medical Commission (NMC) guidelines in which sports,

extracurricular activities, and language skills have been introduced in the curriculum. The course emphasized better communication and social interaction among students, hence it might have increased social bondage and happiness among first-year students. The final-year students were least happy, which might be due to the high academic burden in the final year as reported by another study also.[27]

In this study, a positive correlation was found between academic performance and the happiness level of the students, which signified that students could study with much enthusiasm in a happy state. Happy students could cope well with the stress of academics and expectations from family members. Various other studies also found that students with positive emotions performed better in academics.[14,28]

The results suggested that good relationship of students with family members and friends was significantly associated with their happiness. This was consistent with the widely known attachment theory that individuals have to communicate meaningfully with each other to lead a happy life.[2]

The multivariate regression analysis found that good relations with friends were significantly and positively associated with the happiness of students as compared to good relations of students with family members. This happened because the medical students felt secured with friends and shared emotions easily with friends as compared to parents because problems related to academic stress or intimate relations could be easily shared with friends than parents. Another study also found that better family and social relationships were associated with less psychological distress and better life satisfaction.[29]

In the islands, the students staying in the hostel were found much happier than students not staying in the hostel. In contrast, a study of medical students in Iran found that students who lived with their families were happier than students living in dormitories. The difference in findings in the studies was due to the better support system in the hostel in these islands as compared to other areas.[30]

There was no difference in the happiness of students in relation to their activities on social media, which signified that social media might not be a much effective medium among the students regarding sharing emotions and venting out their stress. Primack *et al.* also found that the use of social media did not provide much emotional and social benefits.[31] In contrast, Pittman (2018) found that the frequency of use of social media determined the relationship between happiness and social media

activity.[32] The internet facilities in many parts of the islands are not good. Therefore, the use of social media among many students was limited, which resulted in no significant relationship between social media activity and the happiness of the students on the A and N islands.

A significant association was found between happiness and physical exercises such as sports, gyms, yoga, and jogging if done at least for more than half an hour 5 days a week. Various studies also found that physical activity could improve mood, self-esteem, and happiness, whereas another study also pointed out that physical exercise could reduce depressive symptoms and help in coping with stressful situations.[33-35]

Happiness was found significantly associated with spiritual belief in God/higher power. In fact, spirituality played an important coping strategy against various challenges such as stressful enlivenment, relationship problems, or poor health. The spiritual thought gave a sense of hope to students in dealing with such challenges in life and students with spiritual beliefs felt somewhat happier. The other studies also reported that students with spiritual attitudes had higher levels of happiness.[1,36]

In this study, univariate and multivariate analyses revealed that stress was negatively associated with the happiness of medical students. Similarly, the traumatic events causing stress to students were also negatively associated with the happiness of the students. Various other studies had also observed the inverse relationship between happiness and stress among students.[13,26,37] Further, Schiffrin pointed out that stress produced a negative effect on the well-being of individuals, hence, decreasing the happiness of students, whereas exercise, meditation, and written expression decreased stress and increased happiness.[38] Another study conducted in Iran found that mindful training was helpful in increasing the happiness of students.[39]

There are a few limitations in this study. The students were requested to fill out a questionnaire via Google form. The students should have access to the internet to read and fill out the questionnaire. In addition, many students did not participate in this study, which might have affected the results of the study. The cross-sectional nature of the study was also a limitation of the study because the reciprocal relationship of various factors with happiness could not be accessed. For example, the study could not tell whether the better academic performance of students leads to their happiness or happy state of mind of students increased academic performance of students in the islands. Hence, a prospective cohort study can be conducted in the future to find out the causal association of happiness with various other factors.

Conclusion

Happiness is an important feeling in the life of students, which plays an important role in their well-being and life satisfaction. There are various factors such as the year of MBBS, relationship with friends and family, stress and traumatic events, hostel stay, physical exercise, and belief in God/higher power, which play a significant role in the happiness of the students. Good social relations emerged as significant positive predictors of happiness of medical students, whereas stress emerged as a significant negative predictor of happiness of medical students in the A and N islands. Hence, we suggest that human relationships, stress management, physical exercise or sports, and orientation to spiritual health can be emphasized in the medical curriculum for the happiness of students. These changes will help in transforming medical students into good doctors, which can treat the patients and community in a better way.

Conflicts of interest
There are no conflicts of interest.

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