



Original Article:

Depression, Anxiety and Stress Reduction in Medical Education: Humor as an Intervention.

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Abstract:

Background: In recent years there has been a growing appreciation of the issues of quality of life and stresses involved in medical training as this may affect their learning and academic performance. Objective of the study was to explore the effectiveness of humor when used as intervention in large group teaching over negative emotions amongst students. **Method:** The present Interventional, Randomized control trial study was carried out on medical students of 4th Semester of RMCH, Bareilly, which has total 90 students. Using simple random sampling lottery method the whole class was divided in two groups-A and B consisting of 45 students each. Group A as control group and Group B experimental group. In first and last lecture of both groups DASS-21 was used as measuring scale, for depression, anxiety and stress and results were compared to see the effect of humor on these three negative emotions. **Result:** Comparison of Severe and Extremely severe Stress: In Group A 40.54% in class -1 increased to 47.54% in class- 4, while in group B initial 13.15 % was reduced to 0 % (highly significant). Anxiety: In group A, after Class 1 -57.45% increased to 61.11% after class 4, while in group B, after class 1- 23.68% reduced to 2.27% only (highly significant). Depression: In group A, after Class 1 - 40.53% & 41.66 % after class 4 (not significant), while in group B, after class 1- 18.41% reduced to 0% (highly significant). **Conclusion:** In present study humor was found to be very effective intervention in relieving students on their negative emotions of depression, anxiety and stress to a larger extent. Further research would justify the use of humor as an effective teaching aid in medical education.

Key Words: Humor; Stress; DASS-21

Introduction:

Stress and burnout are prevalent throughout medicine for practicing doctors, residents and students. Perceived stress is associated with increased levels of depression, alcohol and drug abuse, relationship difficulties, anxiety and suicide. Stress is receiving increased attention because of the realization that tired, tense, anxious doctors may not provide as high quality care as do those who do not suffer from these debilitating conditions. Burnout is common among residents and leads to decreased job

satisfaction, as well as self-reported suboptimal patient care. Pre-clinical medical students have higher levels of stress than the general population due to such factors as academic pressures, financial problems and excessive working hours, all of which can result in personal and interpersonal relationship problems.(1)

Studies from United Kingdom, that have examined coping strategies of medical students with the stresses of undergraduate education have generally identified use of alcohol as a coping strategy but some studies have reported the use of other substances such as tobacco and drugs . But a study from Pakistan reported that sports, music and hanging out with friends were common coping strategies. Studies from developing countries like Pakistan, India, Thailand and Malaysia have reported stress among medical students and have underscored the role of academics as a source of stress . But these studies have either not assessed the coping strategies or did not use COPE inventory.(2)

Although humor is used regularly by medical and other teachers, there is almost no literature on the use of humor in medical education; indeed, there is a paucity of research on its use in education generally. There have been few published controlled studies of the use of humor in learning, and only about half of these have demonstrated improved learning outcomes. There is almost no literature on the use of humor in medical teaching.(3)

Methods:

Study design: The present interventional, randomized control trial study(4) was carried out with the objective to determine if humor is used as a teaching aid then how does it make a difference to the students on their negative emotions of depression, anxiety and stress. Total 90 students of the fourth semester were chosen for the study. By simple random sampling (lottery system) the whole class was divided in two groups - A and B - consisting of 45 students each. Group A was taken as control group and Group B as experimental group. For both groups four lectures each were delivered on same topic, with a difference that in group A classes, no intervention was used while in group B humor was used as an intervention.

Setting and participants: Study was undertaken after approval from institutional ethics committee and written consent of participating students, by Department of Orthopedics at Rohilkhand Medical College, Bareilly, which is a private institution. Here students come from diverse cultural, socioeconomic and educational backgrounds and majority of students belong to affluent families. They are exposed to a new learning environment, making new friends, and generally adapting to a new and somewhat uncertain world during their training at the medical school.

Dass-21: During first and last lecture of both groups, Dass-21 questionnaire was used as measuring scale(5) for depression, anxiety and stress and results were compared to see the effect of humor on these three negative emotions. Results were simplified by using scoring template & Dass profile sheet for severity ratings.

Data analysis: Data was analyzed using SPSS for Windows (Version 10.0) and Chi-Square test was applied for statistical analysis. A p value of 0.05 and less was considered significant.

Results:

Table 1 shows the effect of intervention on stress. In Group A, level of stress increased from 40.54% in Class 1 to 47.54% in Class- 4, while in group B, the initially stressed 13.15 % was reduced to 0 % (highly significant). On the other, the number of normal students reduced to 41.7% from initial 43.24% in group A (not significant), whereas group B, it increased from 55.26% to 86.36%(highly significant).

Group A					
No.	Grading	Class 1 (n= 37)		Class 4 (n= 36)	
		No.	%	No.	%
1	Normal	16	43.24	15	41.7
2	Mild	3	8.11	1	2.78
3	Moderate	3	8.11	3	8.33
4	Severe	7	18.92	8	22.22
5	Extremely Severe	8	21.62	9	25.00

$X^2 = 1.1358, df= 4, P > .05, \text{Not Significant.}$

Group B					
No.	Grading	Class 1- (n= 38)		Class 4 (n= 44)	
		No.	%	No.	%
1	Normal	21	55.26	38	86.36
2	Mild	10	26.31	5	11.36
3	Moderate	2	5.26	1	2.27
4	Severe	2	5.26	0	0
5	Extremely Severe	3	7.89	0	0

$X^2 = 10.17, df= 4, P < .05, \text{Significant}$

Table 2 shows the effect of intervention on anxiety. In group A, severe and extremely severe anxiety increased to 61.11% after class 4 compared to 57.45% after Class 1, while in group B, reduced to 2.27% only after Class 4, compared to 23.68% after Class 1 (highly significant). On the other, the normal students in Group A were 13.51% after Class 1 and 11.11% after Class 4.(not significant), whereas in Group B, initially 34.21 % were normal and after Class 4, 84.09% were normal.(highly significant).

Table 3 shows the effect of intervention on depression. In group A, severe & extremely severe depression was found in 40.53% students after Class 1 and in 41.66 % students after Class 4 (not significant), while in group B, it was found in 18.41% students after Class 1, but reduced to 0% after Class 4 (highly significant). On the other, in Group A, the normal students were 21.62 % after Class 1 and 16.66% after Class 4, (not significant), whereas in Group B, the corresponding figures were 47.36% & 81.81% respectively (highly significant).

Group A					
No.	Grading	Class 1 (n= 37)		Class 4 (n=36)	
		No.	%	No.	%
1	Normal	5	13.51	4	11.11
2	Mild	2	5.40	1	2.78
3	Moderate	8	21.62	9	25.00
4	Severe	9	24.32	10	27.78
5	Extremely Severe	13	35.13	12	33.33

$X^2 = .617, df = 4, P > .05 \text{ Not Significant}$

Group B					
No	Grading	Class 1 (n= 38)		Class 4 (n= 44)	
		No.	%	No.	%
1	Normal	13	34.21	37	84.09
2	Mild	7	18.42	2	4.54
3	Moderate	9	23.68	4	9.09
4	Severe	3	7.89	1	2.27
5	Extremely Severe	6	15.79	0	0

$X^2 = 22.89, df = 4, P < .001 \text{ (highly significant)}$

Group A					
No.	Grading	Class 1 (n= 37)		Class 4 (n= 36)	
		No.	%	No.	%
1	Normal	8	21.62	6	16.66
2	Mild	7	18.91	8	22.22
3	Moderate	7	18.91	7	19.44
4	Severe	8	21.62	7	19.44
5	Extremely Severe	7	18.91	8	22.22

$X^2 = .471, df = 4, P > .05, \text{Not Significant.}$

Group B					
No.	Grading	Class 1 (n= 38)		Class 4 (n= 44)	
		No.	%	No.	%
1	Normal	18	47.36	36	81.81
2	Mild	12	31.57	5	11.36
3	Moderate	1	2.63	3	6.81
4	Severe	3	7.89	0	0
5	Extremely Severe	4	10.52	0	0

$X^2 = 16.54, df = 4, P < .005, \text{Significant}$

Discussion:

Humor appears to be widely used in medical teaching. At the Sydney Children's Hospital, a recent survey of senior staff showed that almost all used humor in their teaching (personal unpublished data). Almost 80% included humor in their teaching sessions, and regularly elicited laughter from their students. Most found it difficult to use humor and would like to use it more. Although they do not see humor as essential to good teaching, they believe that too little use of humor is made in teaching and that humor in teaching reduces stress; increases motivation; improves morale, enjoyment, comprehension, interest and rapport; and facilitates socialization into the profession. They did not think humor trivialized, distracted, encouraged dogmatism, or demeaned patients (if used in bedside teaching) or that its use was unprofessional. They thus attributed to the use of humor in education those qualities which are claimed for it in the educational literature.(6) They stressed that humor should be appropriate to the topic and should be in context. The importance of using humor that is relevant to the subject is stressed by Ziv.(7)

It is also possible that the use of humor in teaching could "seduce" students into believing the teaching to be of high quality, a concept studied in the "Dr Fox" experiment.(8,9) This research showed that a charismatic and impressive teacher could be rated highly by students, despite the absence of content in

the material presented. Surprisingly, student performance may be enhanced by a "seductive" lecture, even though they may have learned nothing. Content, on the other hand, affects student learning, but does not affect student rating of the teacher. (10,11)

The place of humor in medicine thus appears to be paradoxical. Humor is widely used in medical teaching, although rarely mentioned in medical educational writings and apparently virtually never researched in this context. There is significantly more literature on the therapeutic value of humor, yet its clinical use is so rare that it attracts media attention. While better evidence of its educational value is awaited, humor will, no doubt, continue to be used in medical teaching, at least by those who accept that supporting evidence is not always available in the form of randomized controlled studies.

In the present study, humor was found to be very effective intervention in relieving students on their negative emotions of depression, anxiety and stress to a larger extent. We therefore conclude that humor is effective as an intervention.

Virtually all studies of laughter and health indicate positive results. A wide range of low-risk humor techniques can be very effective. Strategies for using humor must be planned well and executed systematically to achieve specific outcomes. Both content-specific and generic humorous material tailored to the characteristics of each class can be effective in appropriate applications. Humor tends to be more effective when two or more of the senses, especially visual and aural, are involved rather than just one sense. Offensive humor should never be used in the classroom.

So an ardent desire of every student is to have a resourceful, motivated, interactive, inspiring teacher. Students adore such teachers.

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