ORIGINAL ARTICLE

Emotional regulation strategies (ER) used by trainees to overcome negative emotions

Fauzia Butt,[1] Usman Mehboob,[2] Gohar Wajid,[3] Rehan Ahmad Khan[4]

Abstract

Objective: To identify the use of different emotion regulation strategies by medical trainees, and to determine the frequency and the predominant pattern of emotional response in emotion-triggering situations.

Method: The descriptive cross-sectional study was conducted at 2 public and 1 private medical college in Lahore, Pakistan, from March to September 2019, and comprised postgraduate medical trainees of either gender from all clinical disciplines from years 1-4. Data was collected using a questionnaire based on the Gross theory of emotional regulation and the Situational model of emotion. Emotion regulation strategies included situation selection, situation modification, cognitive change, attention deployment, and response modulation. Data was analysed using SPSS 25.

Results: Of the 377 trainees approached, 308(81.69%) participated; 206(67%) females and 102(33%) males. The overall mean age was 27.8 ± 2.91 years. The majority of the trainees were from the Obstetrics and Gynaecology department 133(43.2%) and were in the first year of their training 116(37.7%). The most frequent emotion-triggering situation identified was prolonged working hours 292(95%), and the major emotional response was quietness in 5 out of ten situations (50%). The trainees used greater emotion regulation strategies in sad situations 3.49±1.79 ($p<0.01$). Trainees managed sad emotions by keeping themselves involved in other activities 152(49%); in anger, they blamed others 124(40.3%); in fear, they opted for suppression of emotions 71(22.7%); in disgust, they preferred avoidance 90(29.2%); and in shock, acceptance was a common strategy 21(12.7%).

Conclusion: Postgraduate medical trainees struggled to manage emotions and used maladaptive strategies.

Key Words: Emotions, Emotion regulation, Mental health, Emotional skill.

(JPMA 73: 2337; 2023) **DOI: 10.47391/JPMA.7905**

Submission completion date: 11-10-2022— **Acceptance date:** 20-07-2023

Introduction

Emotions are of fundamental importance in the life of every health professional and these emotions affect their social behaviour.[1] Health professionals interact with patients and colleagues, and in this phase of learning undergo a complex process of emotional labour.[2] This process of emotional labour is greatest among junior doctors and in trainees dealing with emotionally challenging situations.[3] High workloads and responsibilities place these doctors at higher risk of developing mental health problems and burnout.[4]

Emotional regulation is a multifaceted process having valance (positive or negative), behavioural and physiological response that is accompanied by specific thoughts and feelings.[5] The positive emotions help in decision making, define an appropriate course of action, inform about other behavioural intentions and motivate socially appropriate behaviour and change the situation in which the emotion is expressed in desirable ways.[6]

Harmful emotions are negative emotions, like sadness, shock, fear, disgust and anger, that are aroused in difficult situations which need to be managed using the emotion regulation process. Harmful emotions are associated with mal-adaption in cognition and behaviour.[7]

The Gross process theory of emotions describes that individuals can control emotions through the emotional regulation process by using some strategies, and these emotions unfold over some time.[8] Strategies are categorised into both antecedents-focussed and response-focussed. Antecedent-focussed strategies occur during the genesis of emotion, and response-modulation strategies occur after the experience of emotion. Antecedent-focussed strategies are situation selection (SS), situation modification (SM), attention deployment (AD), and cognitive change (CC) that occur in sequence.

Most studies have focussed on one or more strategies, like re-appraisal and expressive suppression, to manage

[1]Department of Obstetrics and Gynaecology, Sharif Medical and Dental College, Lahore, Pakistan, [2]Institute of Health Professions Education and Research, Khyber Medical University, Peshawar, Pakistan, [3]WHO, Egypt, [4]Department of Surgery, Riphah International University, Islamabad, Pakistan.

Correspondence: Fauzia Butt. Email: drfauziabutt@hotmail.com

ORCID ID. 0009-0002-8613-1062

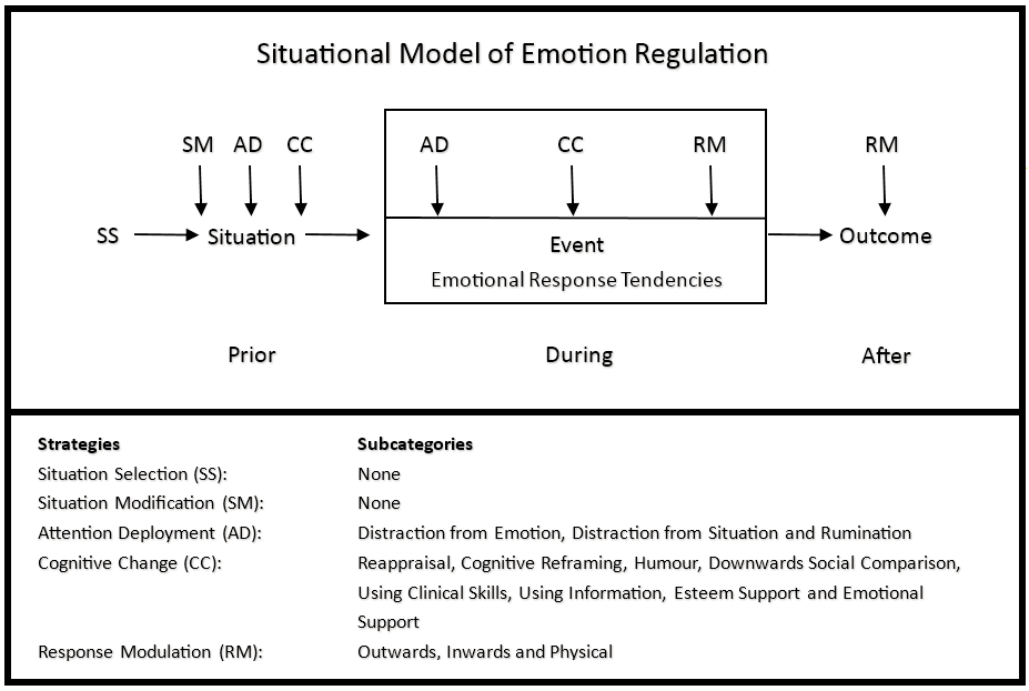

Figure-1: Situational model of emotion regulation.[6]

emotions.[3,5,7] However, in negative emotional situations, the person can use multiple strategies for the same situation rather than a single strategy to control emotions. Some strategies are used on encountering the situation, others during and a few after the situation. The situational model[7] based on the Gross Theory of emotion is used to answer the research question as to how a trainee uses multiple strategies in five negative emotions that change over sometime (Figure 1). This theoretical model helps in determining the relative success of strategies employed in clinical settings.

Considering the lack of literature on emotion regulation and its management in a clinical setting, the current study was planned to identify the use of different emotion regulation strategies in dealing with negative emotions, and to determine the predominant pattern of emotional response in emotion-triggering situations.

Subjects and Methods

The descriptive cross-sectional study was conducted at 2 public and 1 private medical college in Lahore, Pakistan, from March to September 2019. Approval for the study was obtained from the ethics review boards of the University of Lahore and the Sharif Medical and Dental College, Lahore. Using convenience sampling technique, the study included postgraduate medical trainees of either gender from all clinical disciplines and from years 1 -4 of their training. Medical students and house officers were excluded. The sample size was calculated using WHO sample size calculator with 95% confidence interval (CI), anticipated population proportion 0.60 (60%)[7], and margin of error of 5%.[9]

Data was collected using questionnaires designed following the steps given in the Association for Medical Education in Europe (AMEE) guide.[10]

Through literature search, themes were identified to define the construct and the measures related to the emotional regulation construct. To measure construct, 10 items were developed for the first questionnaire (Annexure 1) and 21 items for the second questionnaire (Annexure 2).

The first questionnaire had 2 components; emotion-triggering situations, and emotional response to such situations.

The second questionnaire was about emotion regulation strategies in negative situations.

The second step involved discussions among the co-authors to ensure that the conceptualisation of the construct made theoretical sense and the appropriateness of its language for the population of interest.

The third step was data synthesis, followed by updating of the items.

The next step involved content validations, for which the questionnaires were emailed to 12 experts, including subject specialists, psychologists and medical educationalists. The content validity forms were sent to these experts via email and were asked to accept, reject or suggest modification for each item. The relevance of items was based on the score of each item from 1-4, ranging from not relevant to very relevant. The items were further refined on the basis of their feedback.

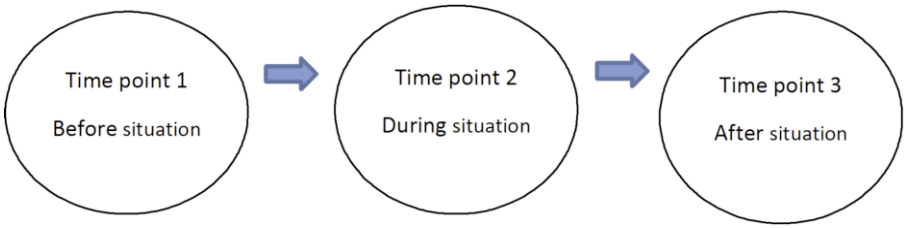

Figure-2: Phases of response assessment.

Content validity index (CVI) of individual items (I-CVI) and of the scale (S-CVI) was calculated with two methods, S-CVI/Average and S-CVI/ universal agreement (UA), using the rating of items based on relevance by the content experts.

The next step[6] involved cognitive probing for trainees' understanding. Five trainees from the Obstetrics and Gynaecology (OB-GYN) department were selected for concurrent verbal cognitive probing. Criteria used for concurrent probing included correct item interpretation, comprehensible explanation, answer choice compatibility with interpretation, and overall item cognition by the five trainees.

The final step involved pilot testing and final modification to adjust items. The two questionnaires were distributed randomly to 65 postgraduate trainees (PGTs) selected from different clinical specialties to determine the reliability of the instruments. The reliability was calculated using Cronbach alpha and split-half reliability. The first questionnaire had two components whereas the second questionnaire had one component. Cronbach alpha was calculated for the 1st component of the questionnaire and a split-half reliability test was used for the 2nd component of the first questionnaire. For the second questionnaire, only split-half reliability was calculated for multiple response analysis.

The content validity index obtained for the first questionnaire was S-CVI/Ave 0.9 and S-CVI/UA 0.7. Internal consistency measured by Cronbach alpha was 0.77 (Annexure 3).

The second questionnaire had S-CVI/Ave of 0.9 and S-CVI/UA of 0.80, respectively, and internal consistency using the split-half reliability was 0.8 (Annexure 4).

The first component of the first questionnaire comprised 10 situations with a range of options scored on a Likert scale, ranging from 0 = never to 5 = always. These items inquired about the situations at the workplace which generated negative emotions. In the second component, the emotional response of the PGTs in these situations was inquired.

The second questionnaire had 18 items about strategies to regulate negative emotions. These items were categorised into 'before', 'during', and 'after' the negative emotional situation (Figure 2), including fear, disgust, sad, angry, and shock, against which these strategies were used. The strategies were operationally defined as: SS meaning to attend or not to attend the situation; SM meaning modifying the situation after attending; AD meaning redirecting attention towards or away from the situation; and CC meaning using some coping strategies to manage the situation, like acceptance, planning, reappraisal, positive refocussing, and putting into perspective.

Data was analysed using SPSS 25. Demographic data was presented using descriptive statistics for categorical variables, like age, gender, year of study, and specialty, as frequencies and percentages. Choice of strategies was compared with reference to gender and year of training.

Repeated measure analysis of variance (ANOVA) was used to determine the significant negative emotional situation using strategies in 'before' 'during' and 'after' phases. $P<0.05$ was considered significant.

Results

Of the 377 trainees approached, 308(81.69%) participated; 206(67%) females and 102(33%) males. The overall mean age was 27.8 ± 2.91 years. The majority of the trainees were from the OB-GYN department 133(43.2%) and were in the first year of their training 116(37.7%). The most frequent emotion-triggering situation identified was prolonged working hours 292(95%), and the major emotional response was quietness (Table 1).Trainees managed sad emotions by keeping themselves involved in other activities 152(49%); in anger, they blamed others 124(40.3%); in fear, they opted for suppression of emotions 71(22.7%); in disgust, they preferred avoidance 90(29.2%); and in shock,

Table 1: Frequency and pattern of emotional responses in emotion-triggering situations.

S.No	Clinical situation	Response	Frequency	Emotional Responses							
				I remain quite	I become confused and uncertain	I become agitated and aggressive	I lose interest in work	I have non participating behaviour	I blame others	I discuss the situation with others	Any other
1	Humiliation of junior colleagues by senior colleagues in front of patients			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		Never	17	7	1	0	0	0	2	4	3
		Rarely	41	17	5	1	10	0	1	11	2
		Sometimes	107	52	11	9	21	7	1	19	4
		Often	97	39	12	13	31	3	1	13	3
		Always	46	20	5	6	16	2	1	10	2
2	Incident of uncivil and rude behaviour of doctors towards patients	Never	21	5	3	5	1	2	1	3	0
		Rarely	91	21	14	8	4	7	4	30	0
		Sometimes	124	43	24	8	8	12	5	28	1
		Often	62	11	5	11	8	7	2	12	0
		Always	10	4	2	3	1	1	1	2	0
3	Wrong dispensing of medicines to patients by staff	Never	31	2	2	7	0	0	1	7	13
		Rarely	122	13	6	33	2	5	2	54	14
		Sometimes	96	11	4	29	4	10	6	27	6
		Often	49	6	7	27	1	3	3	11	4
		Always	10	2	2	1	0	0	4	3	0
4	Inadequate health care facilities	Never	21	4	2	13	0	1	0	2	11
		Rarely	44	7	4	20	3	4	3	11	5
		Sometimes	61	11	6	21	4	1	7	17	5
		Often	110	19	13	0	19	5	8	43	4
		Always	72	9	6	5	15	2	6	29	2
5	Rude behaviour of patients or their attendants towards staff	Never	2	0	0	0	0	1	0	1	0
		Rarely	17	3	3	5	1	3	1	2	0
		Sometimes	96	15	7	23	16	6	6	24	10
		Often	150	33	19	52	17	7	2	25	8
		Always	43	12	8	18	6	4	1	2	1
6	When I lose a patient, in spite of my best efforts to save his life	Never	20	8	0	3	1	0	1	7	2
		Rarely	114	32	7	4	21	3	4	29	7
		Sometimes	107	38	13	10	20	7	3	20	9
		Often	52	17	9	5	8	0	2	11	3
		Always	15	4	4	1	5	0	0	3	0
7	I am unable to treat the patient satisfactorily, due to my busy schedule and shortage of time	Never	23	9	2	4	0	0	2	1	5
		Rarely	83	9	18	5	9	4	2	21	14
		Sometimes	110	23	21	15	5	7	6	23	14
		Often	70	16	17	13	13	2	3	9	2
		Always	22	7	4	7	3	1	1	3	2
8	Breaking bad news to patient	Never	5	3	1	2	1	1	1	0	1
		Rarely	56	14	6	8	5	7	0	12	6
		Sometimes	105	21	16	7	5	3	2	37	21
		Often	106	22	13	3	2	8	2	32	25
		Always	36	11	5	6	2	1	0	3	9

Continued to next page...

Continued form previous page...

9	Prolonged working hours in hospital	Never	2	0	0	1	0	0	0	0	1
		Rarely	14	3	3	1	2	2	1	2	0
		Sometimes	43	10	4	14	6	2	1	1	5
		Often	103	14	18	29	26	11	7	8	4
		Always	146	23	25	64	38	3	5	15	5
10	Miscommunication between nursing staff and doctors	Never	11	4	1	0	2	0	2	1	2
		Rarely	71	12	5	14	6	2	2	28	3
		Sometimes	119	17	18	24	7	10	8	37	7
		Often	80	14	14	20	8	7	3	19	6
		Always	27	10	3	10	3	0	0	4	0

Table-2: Types and patterns of emotional regulation strategies in negative emotions.

Items	Strategies	Disgust	Sad	Angry	Fear	Shock
			Before			
1.	Situation Selection (SS)	29.2	33.4	28.9	14.3	4.2
2.	Situation Modification (SM)	17.2	49.4	26.6	13	4.2
3.	Reappraisal (CC)	18.5	38.3	30.8	14.3	6.8
4.	Expressive suppression (AD)	17.5	38.3	28.6	17.5	6.2
			During			
5.	Planning (CC)	24	39	24	16.6	8.8
6.	Reappraisal (CC)	14	39.5	23.4	21.1	8.8
7.	Acceptance (CC)	21.8	34.1	24	15.9	12.7
8.	Humour (AD)	23.7	33.1	31.5	11.4	6.8
9.	Catastrophising (CC)	23.4	36.4	24.4	16.6	6.2
10.	Blame others (CC)	19.8	26	40.3	12.3	8.1
11.	Rumination (AD)	18.5	30.2	32.8	18.2	4.2
12.	Distraction (AD)	15.9	37.0	26.9	23.1	6.8
13.	Expression of emotion (RM)	15.6	41.6	29.5	22.7	5.5
			After			
14.	Rumination	17.2	32	28.9	22.7	7.5
15.	Suppression of emotions	28.9	39.6	23.7	16.6	8.4
16.	Outward (Cry)	17.9	50.6	28.9	11.7	7.1
17.	Take a sleep or some medicine as a pill to relax	19.5	40.6	25.6	21.1	5.8
18.	Distraction from situation (Walk, exercise, shopping, watch TV or read)	17.5	45.8	33.1	16.9	6.5

*Values presented as percentages.

SS: Situation selection, SM: Situation modification, AD: Attention deployment, CC: Cognitive change, RM: Response modulation

Table-3: Mean difference in the use of emotion regulation strategies among five negative emotions.

Emotions	Strategies	Mean ± SD	F-Ratio	P-Value
Disgust	Disgust while encountering the situation	0.83 ± 0.846	544.932	0.000
	Disgust during the situation	1.94 ± 1.664		
	Disgust after the situation	0.84 ± 1.005		
Sadness	Sadness while encountering the situation	1.63 ± 1.075	1823.863	0.000
	Sadness during the situation	3.49 ± 1.799		
	Sadness after the situation	.52 ± 1.064		
Angry	Angry while encountering situation	1.16 ± 0.883	1056.394	0.000
	Angry during the situation	2.86 ± 1.928		
	Angry after the situation	1.12 ± 1.054		
Fear	Fear while encountering situation	0.59 ± 0.798	993.434	0.000
	Fear during the situation	2.86 ± 1.928		
	Fear after the situation	1.05 ± 0.992		
Shock	Shock while encountering situation	0.22 ± 0.511	136.122	0.000
	Shock during the situation	0.76 ± 1.099		
	Shock after the situation	0.31 ± 0.916		

SD: Standard deviation.

acceptance was a common strategy 21(12.7%).During the situation, rumination 128(41.6%), and after the situation, crying 156(50.6%) were the common patterns (Table 2).

All these strategies were mostly used by Year-1 trainees followed by Year- 2 trainees. SM 57(18.5%) vs 50(16.2%), p≤0.001, rumination 52(16.9%) vs 32(10.4%), p 0.7, outward crying 56(18.2%) vs 40(13.0%), p≤0.28. When strategies were compared in the sad emotional situations among the gender group; more females used these strategies. Before situation, strategy used was SM 109(35.4%) in females vs 43(14%) in males, p 0.08. During situations, rumination was used as strategy in 91(29.5%) female's vs 37(12%) in males, p 0.18. After the situation, outward crying was observed in 97 (31.5%) in female's vs 44 (14.3%) in males, p 0.15.

The trainees used greater emotion regulation strategies in sad situations 3.49±1.79 (p<0.01) (Table 3).

Discussion

Dealing with emotions and learning to manage emotions is an important component of professional behaviour. Workplace and clinical environments are far from ideal places and trainee doctors should transform seamlessly from students to professionals in order to face stressful

situations as patiently as possible.

The emotionally challenging situations could be due to personal factors (personality trait, career development, opportunities, mental health problems etc.), interpersonal relationship factors (colleagues, staff nurses, and patients and their attendants), or organisational and responsibility factors (prolonged working hours). The major factor identified as emotion-triggering in the current study was prolonged working hours by 292(95%) subjects, followed by the rude behaviour of patients or their attendants towards health professionals 289(94%). The results are consistent with earlier findings. [2,11,12]

Incidences of rude behaviour of patients and their relatives are becoming increasingly common, and affect the interaction between patients and doctors. Understanding the perspective of patients and effective communication strategy, in simulation-based learning appears to be an effective tool in the teaching of the trainees to handle such conflicts.[13] Simulation-based training for conflict management was not routinely practised in the hospitals that took part in the current study.

The emotional response of individuals varies in different situations and reflects the emotional sensitivity to that situation. Emotional sensitivity (initial response) to the situation is not only influenced by the nature of stimuli, but also by personal characteristic (personality trait) which determines the subsequent coping response of an individual that is called the emotion regulation process.[14] The current study also determined the emotional responses generated in different situations. A total of 10 situations were identified that could trigger negative emotions. In five out of 10 such situations, the major emotional response (50%) was quietness, followed by a discussion with others and aggressiveness, when there was rude behaviour of patients. The results are comparable to earlier studies.[13,15] The reason might be that most of the trainees were from first year, and, lower down in the hierarchy, they felt powerless, had limited knowledge and experience, and failed to struggle with challenging situations that influenced their emotional and behavioural response.

In addition to identifying the frequency of negative emotions, another important element is how trainees react to negative emotions. The current study found that 292(95%) respondents recognised prolonged working hours as the major factor, while the most common emotional reaction was aggressiveness 107(34%), followed by loss of interest in work 70(22%), and both were emotion-focussed maladaptive responses.

The results are consistent with findings from junior doctors in Australia that work-related stress is identified as a major reason for psychological distress.[16]

The current study also determined the emotional regulation strategies in 5 negative emotions. SM strategy by 152(49%) subjects was used when dealing with sad emotions, while in a disgusting situation, SS strategy was preferred by 90(29.2%). This was consistent with the finding of a study in the United Kingdom.[17]

Reappraisal is more effective in down-regulating negative emotional experience, and in the current study, 95(30.8%) subjects managed anger using this strategy. However expressive suppression was used to manage fear by 54(17.5%). Expressive suppression is a less effective strategy compared to reappraisal as it does not down-regulate negative emotional experience, and is positively linked to psychopathology.

The fourth and the last aspect of the current study was to see how the trainees controlled their emotions. While in the middle of a situation, most trainee opted for AD (rumination) and CC (planning). More females (60.8%) and year-1 trainees (21.2%) used these two strategies. A meta-analysis also found that to deal with negative emotions, females were more likely to use rumination and need emotional support from others.[18] Rumination is a maladaptive strategy and a strong predictor for mood, anxiety disorder and depression, and is associated with long working hours and work-related burnout among healthcare professionals.[7,19]

The current study found that after the situation, suppression of emotions, and crying (seeking social support) was used as a strategy in disgust and sad emotional state, particularly among the females. A study found that the strategies after the situation were physical distraction and crying, and that suppression during a situation and expression after the experience was the preferred strategy. The emotional dysregulation identified in the current study not only hinders their learning, achievement, goal-oriented behaviour, and adaption to the emotion regulation process, but also affects a compassionate, caring attitude towards the patients. [15,18]

The current study has limitations, as it designed the instrument to cover 5 major negative emotions, while leaving out others, including jealousy, lust, panic/grief, rage and contempt.

The strength of the study is that it included trainees from

all years of training and from all clinical disciplines. Longitudinal studies with larger samples on trainees from different countries should be conducted to compare the inter-cultural variation in emotion regulation for negative emotions and response to them.

Conclusion

The trainees struggled to manage emotions and used maladaptive strategies. Sadness was the most common discrete emotion, followed by anger, fear, disgust and shock. Lack of cognitive coping strategies and the use of maladaptive strategies in high demanding situations identified the need for emotional development programmes.

Disclaimer: The text is based on a Master in Health Professions Education (MHPE) project.

Conflict of Interest: None.

Source of Funding: None.

References

1. Bolier M, Doulougeri K, de Vries J, Helmich E. 'You put up a certain attitude': a 6-year qualitative study of emotional socialisation. Med Educ 2018;52:1041-51. doi: 10.1111/medu.13650.
2. Weurlander M, Lönn A, Seeberger A, Broberger E, Hult H, Wernerson A. How do medical and nursing students experience emotional challenges during clinical placements? Int J Med Educ 2018;9:74-82. doi: 10.5116/ijme.5a88.1f80.
3. Atif K, Khan HU, Malik AF. Do doctors have hidden distress; a study conducted at tertiary care hospital at Lahore. J Pak Med Assoc 2016;66:63-7.
4. Rogers ME, Creed PA, Searle J. Emotional labour, training stress, burnout, and depressive symptoms in junior doctors. J Vocat Educ Train 2014;66:232-48. Doi: 10.1080/13636820.2014.884155.
5. Gross JJ. The extended process model of emotion regulation: Elaborations, applications, and future directions. Psychol. Inq 2015;26:130-7. DOI: 10.1080/1047840X.2015.989751.
6. Yaqoob N, Zulfiqar S. Emotional intelligence and burnout among medical officers of twin cities in Pakistan. J Pak Med Assoc 2022;72:1311-4. doi: 10.47391/JPMA.1382.
7. Lundin RM, Bashir K, Bullock A, Kostov CE, Mattick KL, Rees CE, et al. "I'd been like freaking out the whole night": exploring emotion regulation based on junior doctors' narratives. Adv Health Sci Educ Theory Pract 2018;23:7-28. doi: 10.1007/s10459-017-9769-y.
8. Gross JJ. Emotion regulation: taking stock and moving forward. Emotion 2013;13:359-65. doi: 10.1037/a0032135.
9. Lwanga K S, Lemeshow S. Sample size determination in health studies: a practical manual. Geneva, Switzerland: WHO Press; 1991. [Online] 1991 [Cited 2023 August 13]. Available from URL: https://apps.who.int/iris/handle/10665/40062.
10. Artino AR Jr, La Rochelle JS, Dezee KJ, Gehlbach H. Developing questionnaires for educational research: AMEE Guide No. 87. Med Teach 2014;36:463-74. doi: 10.3109/0142159X.2014.889814.
11. Doulougeri K, Panagopoulou E, Montgomery A. (How) do medical students regulate their emotions? BMC Med Educ 2016;16:312. doi: 10.1186/s12909-016-0832-9.
12. Akram Z, Sethi A, Khan AM, Zaidi FZ. Assessment of burnout and associated factors among medical educators. Pak J Med Sci 2021;37:827-32. doi: 10.12669/pjms.37.3.3078.
13. Keskitalo T, Ruokamo H. Students' emotions in simulation-based medical education. J Interact Learn Res 2017;28:149-59.
14. Wall K, Kalpakci A, Hall K, Crist N, Sharp C. An evaluation of the construct of emotional sensitivity from the perspective of emotionally sensitive people. Borderline Personal Disord Emot Dysregul 2018;5:e14. doi: 10.1186/s40479-018-0091-y.
15. Vandevala T, Pavey L, Chelidoni O, Chang NF, Creagh-Brown B, Cox A. Psychological rumination and recovery from work in intensive care professionals: associations with stress, burnout, depression and health. J Intensive Care 2017;5:e16. doi: 10.1186/s40560-017-0209-0.
16. Tallentire VR, Smith SE, Facey AD, Rotstein L. Exploring newly qualified doctors' workplace stressors: an interview study from Australia. BMJ Open 2017;7:e015890. doi: 10.1136/bmjopen-2017-015890.
17. Monrouxe LV, Grundy L, Mann M, John Z, Panagoulas E, Bullock A, et al. How prepared are UK medical graduates for practice? A rapid review of the literature 2009-2014. BMJ Open 2017;7:e013656. doi: 10.1136/bmjopen-2016-013656.
18. Nolen-Hoeksema S. Emotion regulation and psychopathology: the role of gender. Annu Rev Clin Psychol 2012;8:161-87. doi: 10.1146/annurev-clinpsy-032511-143109.
19. Malkoç A, Gördesl MA, Arslan R, Çekic F, Sünbü ZA. The Relationship between Interpersonal Emotion Regulation and Interpersonal Competence Controlled for Emotion Dysregulation. Int J High Educ 2019;8:69-76.

SUPPLEMENTARY DATA
ANNEXURE 1:

Research Instrument: Questionnaire 1.

Dear respondents, we are conducting research on the topic "Emotional regulation strategies used by trainees to overcome negative emotions". Your response in this regard will help us to complete this research in an efficient way. By filling this questionnaire, you are giving your consent to participate in this study. Ensure that data generated shall be kept confidential.

The aim of this research is to determine the prevalence of negative clinical situations which generate negative emotions among our trainees at the workplace, response of trainees to difficult clinical situations and coping strategies used for regulation of emotions in difficult clinical situations. Sharing their experience of coping negative emotions helps in developing teaching strategies for other doctors which improves their working ability; reduces stress and burnouts at the workplace and improves the quality of care for patients.

Department/ Specialty: …….
Year of training: ……..
Age: ……..
Gender: …….
Institution: ……
Email address……

1st Questionnaire: (Emotional situations and response questionnaire)

Please rate how frequently you encounter the following situations which generate negative emotions from your daily clinical experience.

Please select your most appropriate emotional response when you encountered these emotional situations written below:

S.No	Clinical Situations	How frequently you encounter these situations Always 5 often 4 Some Times 3 Rarely 2 Never 1	Emotional Reaction
1	The humiliation of junior colleagues by senior colleagues in front of patients		**Please tick the most appropriate responses from the list given below. Tick as many as you feel appropriate** [ ] I remain quite [ ] I become confused and uncertain [ ] I become agitated and aggressive [ ] I lose interest in work [ ] I have non participating behaviour [ ] I blame others [ ] I discuss the situation with othersAny other:
.2	Incident of the uncivil and rude behavior of doctors towards patients		[ ] I remain quiet [ ] I become confused and uncertain [ ] I become agitated and aggressive [ ] I lose interest in work [ ] I have non participating behaviour [ ] I blame others [ ] I discuss the situation with others:
.3	Wrong dispensing of medicines to patients by staff		[ ] I remain quiet [ ] I become confused and uncertain [ ] I become agitated and aggressive [ ] I lose interest in work [ ] I have non participating behaviour [ ] I blame others [ ] I discuss the situation with othersAny other:
4	Inadequate health care facilities		[ ] I remain quiet [ ] I become confused and uncertain [ ] I become agitated and aggressive [ ] I lose interest in work [ ] I have non participating behaviour [ ] I blame others [ ] I discuss the situations with others Any other:

Continued to next page...

Continued from previous page...

5	Rude behaviour of patients or their attendants towards staff	[ ] I remain quiet [ ] I become confused and uncertain [ ] I become agitated and aggressive [ ] I lose interest in work [ ] I have non participating behaviour [ ] I blame others [ ] I discuss the situation with others Any other:
6	When I lose a patient, in spite of my best efforts to save his life	[ ] I remain quiet [ ] I become confused and uncertain [ ] I become agitated and aggressive [ ] I lose interest in work [ ] I have non participating behaviour [ ] I blame others [ ] I discuss the situation with others Any other:
7	I am unable to treat the patient satisfactorily, due to my busy schedule and shortage of time	[ ] I remain quiet [ ] I become confused and uncertain [ ] I become agitated and aggressive [ ] I lose interest in work [ ] I have non participating behaviour [ ] I blame others [ ] I discuss the situation with others Any other:
8	Breaking the bad news to the patient or his/her relatives	[ ] I remain quiet [ ] I become confused and uncertain [ ] I become agitated and aggressive [ ] I lose interest in work [ ] I have non participating behaviour [ ] I blame others [ ] I discuss the situation with othersAny other:
9	Prolonged working hours in the hospital	[ ] I remain quiet [ ] I become confused and uncertain [ ] I become agitated and aggressive [ ] I lose interest in work [ ] I have non participating behaviour [ ] I blame others [ ] I discuss the situation with others Any other:

Annexure 2: Questionnaire 2: Emotion regulation strategies questionnaire.

Instructions:

I will ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your negative emotions. Negative emotional reactions include Sad, Angry, Fear, Disgust and Shock. These reactions are described below.

Sad: Thoughts of loss or failure, for example; when I lose a patient, in spite of my best efforts to save his/her life

Anger: Thoughts of having been harmed, having been treated unfairly, for example; rude behaviour of patients or their attendants towards staff

Fear: Thoughts of having done something that goes against your own morals, for example; wrong dispensing of medicines to patients by staff or something went wrong by you while managing a patient

Disgust: A feeling of revulsion or strong disapproval aroused by something unpleasant, for example; the humiliation of junior colleagues by senior colleagues in front of patients

Shock: A sudden upsetting or surprising event or experience, for example; uncivilized and rude behaviour of doctors towards patients

Different emotional regulation strategies are used for the control of these emotions some strategies are used before, others are used during and some are used after encountering the difficult clinical situations.

For example:

You encounter a situation of breaking the bad news to one of your patients who is being admitted in hospital in and waiting for reports for a few days. You feel sad when you heard the reports are not good.

In reaction to this news before breaking news to the patient:
Your strategy would be either you decided to break bad news yourself and take responsibility but your other strategy during this situation would be, you ask your colleague to break the bad news to the patient. Your third strategy could be to bring your colleagues with you and try to break some component of news or you become involved in other activities like writing patient notes to detach yourself from the development of the emotional reaction.
During this situation of breaking news, you think about how you can best explain to the patient without expressing your sadness or you feel that you can learn something from disclosing the news to the patient.
After you have gone through the situation and explained to the patient, you go home and feel sad and in order to reduce this emotional reaction, your strategy could be to take a pill to relax, you go for walk or continuously focus on the situation and criticize yourself or you share your feelings with others.

Please mark/tick, in which of the following five negative emotional states, you use these strategies. You can select more than one emotional state for a particular emotional regulation strategy.

S.No.	Please read the strategies mentioned below and tick the emotions for which you are likely to use these strategies.	Disgust	Sadness	Angry	Fear	Shock
	FIRST ENCOUNTERING THE NEGATIVE SITUATION					
1.	I distract from situations that might upset me					
2.	I keep myself involved in other activities					
3.	I change my way of thinking in order to feel less negativity					
4.	I make sure not to express my feelings					
	DURING NEGATIVE SITUATION					
	Please read the strategies mentioned below and tick the emotions for which you are likely to use these strategies.	**Disgust**	**Sadness**	**Angry**	**Fear**	**Shock**
5.	When I face negative emotion I think about a plan of what I can do best					
6.	I think I can learn something from the situation					
7.	I think that I have to accept that this has happened					
8.	I laugh sometimes to keep myself calm					
9.	I think that what I have experienced is much worse than what others have experienced					
10.	I feel that others are responsible for what has happened					
11.	I criticize myself to make myself feel worse					
12.	I concentrate on the task and try not to think about it					
13.	I need to talk about my feelings with others that worried me					
	AFTER NEGATIVE SITUATIONS					
	Please read the strategies mentioned below and tick the emotions for which you are likely to use these strategies.	**Disgust**	**Sadness**	**Angry**	**Fear**	**Shock**
14.	I will continuously focus on the situation and think about it					
15.	I will try not to think about it					
16.	I will cry sometime when I feel these emotions.					
17.	I take a sleep or some medicine like a pill to relax when I feel these emotions.					
18.	I go for a walk, exercise, movie, or have shopping , watch TV or read, to think less about these emotions					

Annexure 3: Content validity index of the first study questionnaire.

item	Exp1	Exp2	Exp3	Exp4	Exp5	Exp6	Exp7	Exp8	Exp9	Exp10	Exp11	Exp12	NO.OF AGREEMENT	I-CVI
1	4	4	4	4	4	4	3	4	4	4	4	3	12	1.0
2	4	4	4	4	3	4	4	4	4	3	4	3	12	1.0
3	4	4	4	2	4	4	4	3	4	3	4	1	10	0.8
4	4	4	4	4	2	4	4	4	3	4	4	2	10	0.8
5	4	4	4	4	3	4	4	4	3	4	4	2	11	0.9
6	4	4	4	3	4	4	4	4	4	4	4	2	11	0.9
7	4	4	4	3	2	4	4	4	4	3	4	4	11	0.9
8	4	4	4	2	3	4	4	4	4	4	4	3	11	0.9
9	4	4	4	2	3	4	4	4	4	4	4	1	10	0.8
10	4	4	4	4	0	4	4	4	4	4	4	3	11	0.9

S-CVI/Ave 0.9
Total Agreement 7
S-CVI/UA 0.7

Annexure 4: Content validity index of the second study questionnaire.

Item	Exp1	Exp2	Exp3	Exp4	Exp5	Exp6	Exp7	Exp8	Exp9	Exp10	Exp11	Exp12	NO.OF AGREEMENT	I-CVI
1	4	4	1	4	4	4	3	4	4	4	4	4	11	0.92
2	4	4	1	4	3	4	3	4	3	3	4	4	11	0.92
3	4	4	1	4	3	4	3	4	4	4	4	4	11	0.92
4	4	4	1	4	4	4	3	4	4	4	4	4	11	0.92
5	4	4	1	4	4	4	3	4	4	4	4	3	11	0.92
6	4	4	1	4	4	4	3	4	4	4	4	3	11	0.92
7	4	4	1	4	3	4	3	4	3	4	4	2	10	0.83
8	4	4	1	4	3	4	3	4	3	4	4	3	11	0.92
9	4	4	1	4	3	4	3	4	3	4	4	2	10	0.83
10	4	4	1	4	4	4	3	4	4	4	4	3	11	0.92
11	4	4	1	4	4	4	3	4	3	4	4	4	11	0.92
12	4	4	1	4	4	4	3	4	4	3	4	4	11	0.92
13	4	4	1	4	3	4	3	4	4	4	4	2	10	0.83
14	4	4	1	4	3	4	3	4	4	4	4	3	11	0.92
15	4	4	1	1	4	4	3	4	4	4	4	4	10	0.83
16	4	4	1	4	4	4	3	4	3	4	4	4	11	0.92
17	4	4	1	4	4	4	3	4	4	4	4	4	11	0.92
18	4	4	1	4	4	4	3	4	3	4	4	4	11	0.92

S-CVI/Ave 0.90
Total Agreement 14
S-CVI/UA 0.8