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Original Article

Clinical Anger among Doctors of Tertiary Care Hospitals: An Analytical Cross-sectional Study

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ABSTRACT

Anger is a psychobiological, subjective experience that incorporates the involvement of displeasure. The prevalence of anger may be increased in patients with psychological illnesses such as depression and anxiety, which are reported to be high in healthcare workers, especially doctors.

After signing an informed consent form, the participants were asked to fill out two questionnaires: One containing demographic details and work-related questions and the second being the Clinical Anger Scale, a validated self-administered measure of clinical anger. Data analysis was done using SPSS version 21. Clinical Anger Scale categories were compared for age and gender differences, across private vs. public hospitals, years of service, working hours per day, and the number of night shifts per week. ANOVA test was performed to test for differences in the CAS anger scores for different levels of practice

65.32% (n=162) participants had minimal clinical anger, whereas 17.74% (n=44) had mild, 9.27% (n=23) had moderate and 7.66% (n=19) reported severe clinical anger. There was a significant difference between professional levels with resident doctors reporting the maximum levels of clinical anger.

Anger triggers aggressive behavior that has psycho-biological effects on doctors and affects the relationship among healthcare professionals, negative treatment outcomes ultimately leading to compromised patient care.

There is a lack of expression of / conversation around negative emotions -such as anger in healthcare settings which may have various unwanted outcomes such as negative relations within and between different tiers of healthcare providers, leading to compromised patient care. Therefore, a concern for researchers as well as policymakers.

Abbreviations

Clinical Anger Scale (CAS); Analysis of Variance (ANOVA); Coronavirus Disease 2019 (COVID-19).

Keywords

Anger, aggression, healthcare, patient-care, mental health.

INTRODUCTION

Anger is a psychobiological, subjective experience that over time and throughout different situations, is considered to be an emotional state that incorporates

the involvement of displeasure and consists of subjective feelings that may show variation in intensity[1]. As per our literature search, our study is the first to measure the prevalence of clinical anger among doctors and measure it across various groups.

Anger can be classified as state or trait anger; State anger is an emotional state involving displeasure and feelings ranging from irritation or annoyance to intense rage and fury, whereas trait anger may be a general temperament of low threshold reactivity in which angry feelings are experienced in response to relatively innocuous triggers[1]. There has been a lack of research on negative emotions - specifically anger- in organizations (including hospitals)[2]. A study on anger among the general public found the prevalence of anger to be 7.8% (n=34000) which was more common among males and young adults and was associated with decreased psychosocial functioning[3]. The prevalence significantly increased ranging from 35.3% to 73.3% (n=328) in patients with psychological illnesses such as depression and anxiety[4] which are very common among people associated with the health care profession such as medical students (70%) (n=142)[5], nursing students (76%) (n=150)[6] and doctors (47.78%) (n=203)[7]. This increased prevalence of psychological illnesses, specifically in doctors, is due to greater psychological demands of their work[8], tiredness, and pressure because of the high workload[9]. These mental health problems are found to be a predictor of aggressive behavior among health professionals[10]. A local study found the prevalence of anger problems in medical students to be more than 90%[11]. Medical students, who later become clinical doctors, have a high prevalence of anger[11] and other healthcare staff also reported aggressive behavior among doctors to be an important stress factor for them[12]; we hypothesize that the prevalence of clinical anger could be significant among doctors. Of note, tertiary care hospitals bear a high patient load, as well as increasing incidences of workplace violence against doctors[13].

We utilize the Clinical Anger Scale (CAS) to measure the prevalence of Clinical anger[14], a 21-item self-report instrument formulated to categorize the intensity or severity of clinical anger. Our study primarily analyses the prevalence of clinical anger as measured by CAS to standardize the severity and the relationship between anger and age differences, gender differences, across private and public hospitals, working hours per day, number of night shifts per week. The Coronavirus Disease 2019 (COVID-19) pandemic affected every healthcare system globally, therefore, we also assessed if working during the pandemic had any effect on anger among doctors.

METHODS

Data collection and instruments

Data was collected through a convenient sampling technique from one public and one private hospital in Karachi, Pakistan. Our inclusion criteria were medical doctors who have at least obtained a medical degree from a recognized institute and now working either as house officers/interns, residents, or consultants in a tertiary care hospital. Exclusion criteria were practitioners who practice other than Allopathic medicine; non-medical and para-medical staff, and those who refuse to give consent. The participants signed an informed consent form and two questionnaires. A self-reported data on demographics and other variables using a structured questionnaire and a self-reported measure of the trait of anger using CAS[14]. While using CAS the participants selected the single statement (from the 4 statements in each set) that best describes how they felt. In addition, the 4 statements per set are sequenced on basis of symptom intensity he/she felt with the fourth one- statement D being associated with more intensity in clinical anger. Then each set of statements is scored on a 4-point Likert scale, with A = 0, B = 1, C = 2, D = 3. After that the scores are then summed up for all items and interpretations of the scores by categorizing the following ranges as 0-13; minimal clinical anger, 14-19; mild clinical anger, 20-28; moderate clinical anger, 29-63; severe clinical anger.

Ethical Considerations

All participants consented to voluntarily participate in the study by signing an informed consent form. The participants were also anonymized and their personal information and responses remain confidential. No intervention was performed on any human/animal.

The study is reported following the EQUATOR network guideline[15]; STROBE checklist for cross-sectional research[16].

Data Analysis

Data analysis was done using SPSS® version 21. Demographic information of study participants and other nominal and categorical variables are on using descriptive statistics; i.e., frequencies (n; mean; S.D.) and proportions (% of n). The CAS scores were categorized for increasing levels of anger. The item-total score will be computed for CAS and categories were defined.

To test the hypothesis: Pearson's chi-square test was used, and CAS categories were compared for age and gender differences, across private vs. public hospitals, years of service, working hours per day, and the number of night shifts per week. ANOVA test was performed to test for differences in the CAS anger scores for different levels of practice (house job, residency, and consultancy) while controlling for differences in age, gender and, and place of practice.

$\alpha = 0.05$ and ρ is significant at <0.05 where we will reject the null hypothesis H_0.

RESULTS

A total of 248 medical doctors participated in the study out of which 42.7 (n=106) identified as male and 57.3% (n=142) were female. The mean age was 28.86 ± 6.926. Frequencies of other demographic characteristics and other details are shown in **Table 1 and Table 2**. The results of individual CAS categories are listed in **Table 3**.

Table 1. Demographic Details of Participants

	Frequency (n=)	Percentage (%)
Gender of respondent		
Male	106	42.7
Female	142	57.3
Marital status of the respondent		
Single	156	62.9
Married	92	37.1
Workplace		
Public	136	54.8
Private	112	45.2
Professional Level		
House-Officer/Intern	108	43.5
Resident/Trainee	105	42.3
Consultant	32	12.9
Other	3	0.1
Whether the respondent worked during the Pandemic		
Yes	158	36.3
No	90	63.7

Table 2. Professional characteristics of participants

	Number of hours of duty per day	Age of the respondent	Years since the respondent has been serving as a doctor	Number of night shifts/calls per week
Mean	7.782	28.86	4.04	1.58
Std. Error of Mean	0.1313	0.449	0.352	0.067
Std. Deviation	2.0551	6.926	5.492	1.050
Range	16.0	60	34	4

Table 3. Individual Responses

STATEMENTS	OPTIONS	FREQUENCY (n=)	PERCENTAGE (%)
Feeling of anger	A	97	39.1
	B	112	45.2
	C	34	13.7
	D	5	2.0
	N/A		
Anger interfering with interest in others	A	118	47.6
	B	93	37.5
	C	24	9.7
	D	10	4.0
	N/A	3	1.2
Anger on failure	A	73	29.4
	B	41	16.5
	C	48	19.4
	D	12	4.8
	N/A	73	29.4
Anger about things	A	118	47.6
	B	79	31.9
	C	35	14.1
	D	8	3.2
	N/A	8	3.2
Hostility	A	148	59.7
	B	55	22.2
	C	24	9.7
	D	10	4.0
	N/A	11	4.4
Feeling that others are trying to annoy the participant	A	112	45.2
	B	92	37.1
	C	31	12.5
	D	12	4.8
	N/A	1	0.4
Anger on oneself	A	137	55.2
	B	81	32.7
	C	18	7.3
	D	8	3.2
	N/A	3	1.2
Anger on having screwing up one's life	A	129	52.0
	B	67	27.0
		25	10.1
	D	14	5.6
	N/A	13	5.2
Angry enough to hurt someone	A	163	65.7
	B	57	23.0

	C	19	7.7
	D	6	2.4
	N/A	3	1.2
Shout at people	A	143	61.7
	B	70	28.2
	C	14	5.6
	D	11	4.4
	N/A		
Things are more irritating	A	104	41.9
	B	99	39.9
	C	34	13.7
	D	6	2.4
	N/A	4	1.6
Anger interfering with the ability to make decisions	A	142	57.3
	B	78	31.5
	C	18	7.3
	D	7	2.8
	N/A	3	1.2
Anger interfering with work	A	145	58.5
	B	70	28.2
	C	21	8.5
	D	9	3.6
	N/A	3	1.2
Hostile that others dislike me	A	168	67.7
	B	59	23.8
	C	13	5.2
	D	4	1.6
	N/A	4	1.6
Anger interfering with sleep	A	150	60.5
	B	76	30.6
	C	13	5.2
	D	7	2.8
	N/A	2	0.8
Anger making one tired	A	120	48.4
	B	98	39.5
	C	18	7.3
	D	8	3.2
	N/A	4	1.6
Anger interfering with appetite	A	129	52.0
	B	84	33.9
	C	20	8.1
	D	10	4.0
	N/A	5	2.0
Anger interfering with health	A	136	54.8
	B	81	32.7
	C	17	6.9
	D	9	3.6
	N/A	5	2.0
Anger interfering with the ability to think clearly	A	113	45.6
	B	107	43.1
	C	17	6.9
	D	5	2.0
	N/A	6	2.4
Anger interfering with sex life	A	116	46.8
	B	30	12.1
	C	10	4.0
	D	14	5.6
	N/A	78	31.5

Scores: A = 0, B = 1, C = 2, D = 3

65.32% (n=162) participants had minimal clinical anger, whereas 17.74% (n=44) had mild, 9.27% (n=23) had moderate and 7.66% (n=19) reported severe clinical anger. During the Pandemic, there was no significant difference between genders, workplace, marital status, and work. Age, work hours, years of practice, and calls/night shifts also did not significantly impact the level of clinical anger. ANOVA test reported a significant difference between professional levels with resident doctors reporting the maximum levels of clinical anger (p=0.006). The differences in professional levels are reported in **Table 4 and Table 5**.

Table 4. Professional Level of the respondent; Crosstabulation

	Clinical Anger Scale Scores				Total (n=)
	Minimal clinical anger (n=)	Mild Clinical Anger (n=)	Moderate Clinical Anger (n=)	Severe Clinical Anger (n=)	
House officer	63	21	14	10	108
Resident	75	18	7	5	105
Consultant	22	5	2	3	32
Other	2	0	0	1	3
Total	162	44	23	19	248

Table 5. Professional Level of the respondent; ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1161.150	3	387.050	4.192	0.006
Within Groups	22528.749	244	92.331		
Total	23689.899	247			

DISCUSSION

To our knowledge, our study is the first of its kind to define the prevalence of clinical anger among among physicians of tertiary care hospitals using the CAS. We found that 17.74% (n=44) exhibit mild, 9.27% (n=23) moderate and 7.66% (n=19) severe clinical anger. It is maximum among resident doctors, significantly more than junior doctors in their intern years or consultants. A limitation to our findings may be during data collection when many aggressive doctors refused to participate in the study due to which the prevalence of moderate to severe anger may be underrecognized. Social taboos may also lead to under-recognition of anger such as in the last statement of the CAS where many participants refused to answer.

Although there seem to be significant differences in government and private healthcare setups in terms of patient load and facilities, with government setups having higher patient loads but lower facilities and vice versa; there was no significant difference in the anger levels of doctors working in the government or private setups.

Söğütlü Y et al. assessed the anxiety, anger, sleep, and emotion regulation among healthcare professionals about COVID-19 pandemic[17] and reported anxiety and insomnia levels of the healthcare professionals had a positive correlation with the trait anger levels, however, whether, the healthcare professionals resulted positive for COVID-19 or negative was not a significant predictor of the effect of state or trait anger. Adding to our study also found that working in COVID-19 also did not have any significant effect on anger levels. Even though Söğütlü Y et al. reported that insomnia affects anger, our study did not find any correlation between the number of night shifts and levels of clinical anger.

In contrast to our study which found no significant different differences between genders, a study in the general population of the United States of America found that males were more likely to report anger3. It also reported that anger is inversely related to age as older adults are more effective at regulating emotions and Söğütlü Y et al. also reported the trait anger levels of healthcare professionals under the age of 35 are significantly higher than those above 35 years and the level of emotional regulation difficulties being positively correlated with trait anger levels[17]; which may explain why in our study the consultants had a lesser level of clinical anger than resident doctors. This distinction may also be due to workload differences. Evil F, Demirel G reported that health-care professionals who perceived the workload as higher had higher levels of trait anger[18]. The population of consultants was also lesser as compared to other professional levels in our study which may be a limitation.

As mentioned earlier, mental health problems, which are higher in doctors as compared to other populations, are found to be a predictor of aggressive behavior among health professionals. Aggression can be defined as the intention to harm any person or object. There have been various classifications of aggression, however, the intent of harm is the necessary feature; the differences are in the proximate and ultimate goals which may be profit-based or harm-based[19]. It can also be classified as hostile, uncontrolled, unplanned; instrumental, planned, and proactive[1].

Anger may not be the only cause of aggression; however, it does modulate aggression by reducing inhibitions against aggressive behavior. It does so by either providing a justification for aggressive retaliation or by maintaining aggressive intention over time[1]. Anger also increases attention to provoking events, thus increasing processing and recall of any such events[1].

Anger triggers aggressive behavior[20] which not only has psycho-biological effects on doctors but also affects the relationship among health care professionals[21] as well as negative treatment outcomes[12]; ultimately leading to a compromised patient care[9]. Patient-centered care results in patients' better recovery and their mental health[22] thus decreased patient care would result in slow recovery leading to an increased workload for doctors; thus creating a self-amplifying cycle. This model of workload stress, anger, aggression, and patient care is illustrated in **Figure 1**.

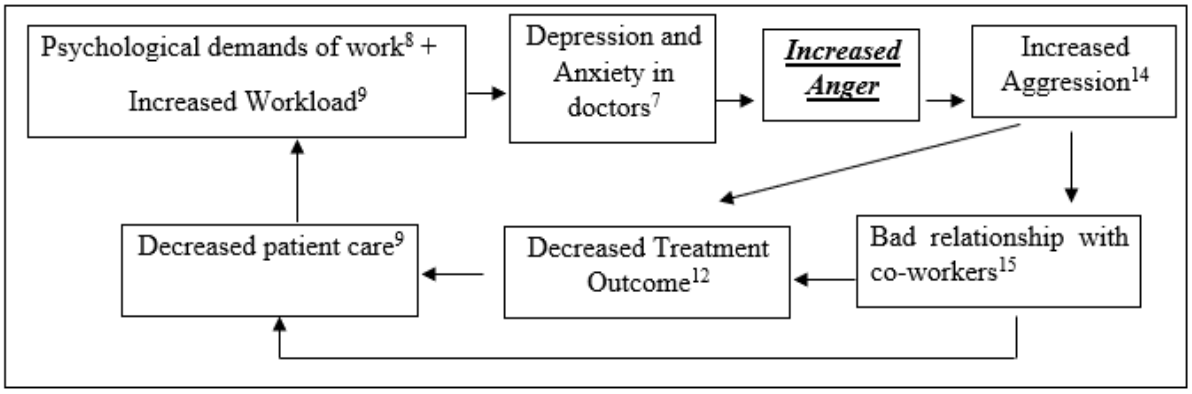

Figure 1. The model of workload stress, anger, aggression in patient care

The first limitation of our study is the relatively smaller sample size for the population of doctors. The information on anger was self-reported and not confirmed by collateral informants. Differences across various specialties such as clinical and non-clinical such as histopathology; and medicine and surgery were not taken into account and may be confounding factors. Another confounding factor not taken into account was the socio-economic status of the participants.

RECOMMENDATIONS

For researchers' further studies should be conducted with larger sample sizes for more accuracy. Studies can also be conducted comparing various medical specialties. Lastly, the prevalence of anger may vary across different populations and cultures thus replication of our study in different areas across the globe can be useful to compare cultural influences.
For hospital administrators and policymakers, our model of workload stress, anger, aggression, and patient care can be useful to improve patient care by working in the domains of workload, psychological well-being of doctors, the relationship between doctors and other medical staff and importantly conducting anger management workshops and taking account of aggression of doctors by patients and other co-workers.

CONCLUSION

The importance of clinicians' emotions in the delivery of quality care has been researched within clinical settings, focused almost exclusively on negative emotions such as aggression towards healthcare professionals, however, there has been a lack of research on aggression by them. Therefore, health care research shares the same neglect as organizational research in not addressing the roots of clinical aggression that revolve around the relationship between staff and patients. Clinical anger leading to aggression causes distress among healthcare workers and decreases patient care. Future research should address the matter more thoroughly and Policymakers need to take note of anger and aggression by doctors to make policies for anger management for improving patient care.

Conflict of Interest

The authors declare no conflict of interest.

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References

1. Ramirez JM, Andreu Rodríguez JM, Ramirez JM, Andreu Rodríguez JM. The main symptoms of the AHA-syndrome: relationships between anger, hostility, and aggression in a normal population. Published online 2009. Accessed March 26, 2022. https://eprints.ucm.es/id/eprint/8406/
2. Glomb TM, Hulin CL. Anger and Gender Effects in Observed Supervisor-Subordinate Dyadic Interactions. Organ Behav Hum Decis Process. 1997;72(3):281-307. doi:10.1006/obhd.1997.2741
3. Okuda M, Picazo J, Olfson M, et al. Prevalence and correlates of anger in the community: results from a national survey. CNS Spectr. 2015;20(2):130-139. doi:10.1017/S1092852914000182
4. Painuly NP, Grover S, Gupta N, Mattoo SK. Prevalence of anger attacks in depressive and anxiety disorders: implications for their construct? Psychiatry Clin Neurosci. 2011;65(2):165-174. doi:10.1111/j.1440-1819.2010.02177.x
5. Khan MS, Mahmood S, Badshah A, Ali SU, Jamal Y. Prevalence of depression, anxiety and their associated factors among medical students in Karachi, Pakistan. JPMA J Pak Med Assoc. 2006;56(12):583-586.
6. Khan AU, Raja, Badil, Ali S. Prevalence of Depression and its Associated Factors Among Nursing Students in Karachi, Pakistan. Pak J Public Health.2019;9(1):34-36.doi:10.32413/pjph.v9i1.310
7. Atif K, Khan HU, Ullah MZ, Shah FS, Latif A. Prevalence of anxiety and depression among doctors; the unscreened and undiagnosed clientele

in Lahore, Pakistan. Pak J Med Sci. 2016;32(2):294-298. doi:10.12669/pjms.322.8731

8. Kerrien M, Pougnet R, Garlantézec R, et al. [Prevalence of anxiety disorders and depression among junior doctors and their links with their work]. Presse Medicale Paris Fr 1983. 2015;44(4 Pt 1):e84-91. doi:10.1016/j.lpm.2014.06.042
9. Skjørshammer M. Anger behaviour among professionals in a Norwegian hospital: antecedents and consequences for interprofessional cooperation. J Interprof Care. Published online July 6, 2009. doi:10.1080/13561820310001608203
10. Tzeletopoulou A, Alikari V, Zyga S, Tsironi M, Lavdaniti M, Theofilou P. Are Burnout Syndrome and Depression Predictors for Aggressive Behavior Among Mental Health Care Professionals? Med Arch. 2018;72(4):244-248. doi:10.5455/medarh.2018.72.244-248
11. Ahmed SI, Uneeb SN, Bareeqa SB, et al. Prevalence of Anger in Medical Students: A Tertiary Care Experience from a Developing Country. Cureus. 2019;11(3). doi:10.7759/cureus.4258
12. Lundstrom T, Pugliese G, Bartley J, Cox J, Guither C. Organizational and environmental factors that affect worker health and safety and patient outcomes. Am J Infect Control. 2002;30(2):93-106. doi:10.1067/mic.2002.119820
13. Kumar M, Verma M, Das T, Pardeshi G, Kishore J, Padmanandan A. A Study of Workplace Violence Experienced by Doctors and Associated Risk Factors in a Tertiary Care Hospital of South Delhi, India. J Clin Diagn Res JCDR. 2016;10(11):LC06-LC10. doi:10.7860/JCDR/2016/22306.8895
14. Snell WE, Gum S, Shuck RL, Mosley JA, Hite TL. The Clinical Anger Scale: preliminary reliability and validity. J Clin Psychol. 1995;51(2):215-226. doi:10.1002/1097-4679(199503)51:2<215::aid-jclp2270510211>3.0.co;2-z
15. Reporting guidelines | EQUATOR Network. Accessed August 29, 2023. https://www.equator-network.org/reporting-guidelines/
16. Cuschieri S. The STROBE guidelines. Saudi J Anaesth. 2019;13(Suppl 1):S31-S34. doi:10.4103/sja.SJA_543_18
17. Söğütlü Y, Söğütlü L, Göktaş SŞ. Relationship of COVID-19 Pandemic with Anxiety, Anger, Sleep and Emotion Regulation in Healthcare Professionals. J Contemp Med. 2021;11(1):41-49. doi:10.16899/jcm.804329
18. Evcili F, Demirel G. The effects of workload on the styles of anger expression and "trait anger" of healthcare professionals working in a COVID-19 pandemic hospital. Perspect Psychiatr Care. n/a(n/a). doi:10.1111/ppc.13009
19. Anderson CA, Bushman BJ. Human Aggression. Annu Rev Psychol. 2002;53(1):27-51. doi:10.1146/annurev.psych.53.100901.135231
20. Alia-Klein N, Goldstein RZ, Tomasi D, et al. Neural mechanisms of anger regulation as a function of genetic risk for violence. Emot Wash DC. 2009;9(3):385-396. doi:10.1037/a0015904
21. Groer M, Thomas SP, Droppleman P, Younger M. Longitudinal study of adolescent blood pressures, health habits, stress and anger. undefined. Published online 1994. Accessed March 27, 2022. https://www.semanticscholar.org/paper/Longitudinal-study-of-adolescent-blood-pressures%2C-Groer-Thomas/7059b5a7839088a93779a4a36fefe6407ad403e5
22. Stewart M, Brown JB, Donner A, et al. The impact of patient-centered care on outcomes. J Fam Pract. 2000;49(9):796-804.