`Additional file 1

Table 2: Overview of six FGDs

FGD	Institution	Phase / Year	Participants
FGD 01	Private Medical College	Phase 1 – 2nd Year	10 (all Male)
FGD 02	Private Medical College	Phase 2 – 3rd Year	10 (Mixed)
FGD 03	Private Medical College	Phase 3 – 4th Year	10 (Mixed)
FGD 04	Public Medical College	Phase 1 – 2nd Year	8 (Mixed)
FGD 05	Public Medical College	Phase 2 – 3rd Year	8 (Mixed)
FGD 06	Public Medical College	Phase 3 – 4th Year	7 (Mixed)

Table 4: Themes, Subthemes and codes related to perceived resources for coping

Theme	Subtheme	Codes
Perceived inadequacy of organizational support	Physical infrastructure deficits	Campus infrastructure limitations
		Inadequate recreational space
		Hostel insufficiency
	Limited social infrastructure	Lack of a co-curricular framework
		Inadequate common space
	Clinical learning infrastructure deficits	Excessive ward group sizes
		Subordination of student learners
		Ward-residential scheduling mismatch
	Perceived inadequacies in organizational management	Resource support constraints
		Limited institutional safeguards
		Perceived lack of feedback loop
Perceived inadequacy of mental health support services	Mental health service availability and utilization	Universal service non-use
		Service unavailability
		Institutional motivational events
	Preferred service modalities	Anonymity in service,
		Preference of peer counsellor
		Normalized routine access
	Systemic causation and reform advocacy	Systemic causation recognition
		Counselling-only insufficiency
		Structural reform prerequisite
	Confidentiality and trust as critical barriers	Confidentiality breach experience
		Institutional surveillance fear
		Trust-based service avoidance
Perceived reliance on informal peer support	Peer support	Peer group as lifeline
		Senior peer mentorship
	Family support	Family time

Table 9: Top ten highest-rated and five lowest-rated individual stressor items — MSSQ-40 (N=201)

Rank	Stressor Item	Domain	Mean	Stress Level
Ten highest-rated individual stressor items				
1	M10 – Heavy workload	ARS	2.493	High
2	M36 – Unjustified grading process	ARS	2.483	High
3	M15 – Feeling of incompetence	GARS	2.458	High
4	M1 – Tests/examinations	ARS	2.453	High
5	M16 – Uncertainty of what is expected	TLRS	2.448	High
6	M27 – Lack of time to review the studied material	ARS	2.433	High
7	M33 – Large amount of content to be learned	ARS	2.413	High
8	M12 – Falling behind in reading schedule	ARS	2.368	High
9	M37 – Lack of recognition for work done	TLRS	2.353	High
10	M25 – Getting poor marks	ARS	2.303	High
Five lowest-rated individual stressor items				
40	M38 – Working with computers	SRS	1.209	Moderate
39	M2 – Talking to patients about personal problems	SRS	1.403	Moderate
38	M6 – Parents' wish for you to study medicine	DRS	1.423	Moderate
37	M11 – Participation in class discussions	GARS	1.448	Moderate
36	M39 – Verbal/physical abuse by peers	IRS	1.517	Moderate

Table 10 Themes, Subthemes and codes related to perceived stressors

Theme	Subtheme	Codes
Academic and Curricular Stressors	Content overload and temporal compression	Content overload
		Academic-clinical dual burden
	Continuous assessment cycles	Continuous assessment burnout
		No preparatory leave
	Perceived stressful assessment format	Rote memorization assessment modalities
		Clinically irrelevant assessment content
		Study material inconsistency
		Punitive assessment practices
	Assessment subjectivity and inconsistency	Cross-teacher answer inconsistency
		Examiner-specific answer requirements
	Temporal recovery deficit	Insufficient recovery time
		Attendance pressure
	Inadequate clinical integration	Delayed start to applied clinical learning
		Marginalized ward learning
		Perceived inadequate clinical learning
	Quality of teaching	Perceived poor teaching ability
		Teacher student relationship
		Trauma damping
Institutional Power & Culture stressors	Hierarchical intimidation	Hierarchical sittings
		Oppression and humiliation
	Rite-of-Passage cultural ideology	The "Survivor Mindset": Cultural reproduction of harm
		Reform suppression
		Suffering normalization
Social & Environmental Stressors	Family pressure & Isolation	Parental enforcement
		Family expectation burden
		Geographic separation from family
	Peer dynamics & social Stigma	Competitive peer comparison
		Social isolation
		Academic failure stigmatization
		Interpersonal conflict
	Financial & career anxiety	Gendered financial pressure
		Post-MBBS Income anxiety
		Social media financial comparison
		Professional dignity deficit

Table 11: Comparison of MSSQ items and FGD evolved codes for stressors and their relationship

Theme	Subtheme	Codes	Items	MSSQ Domains
Academic and Curricular Stressors	Content volume and time conflict	Content overload and temporal compression	Tests/examinations	Academic Related Stressor
		Academic-clinical dual burden	**Quota system in examinations**	
	Continuous assessment cycles	Continuous assessment burnout	Need to do well (self-expectation)	
		No preparatory leave	Heavy workload	
	Perceived stressful assessment format	Rote memorization assessment	Falling behind in reading schedule	
		Clinically irrelevant assessment content	Not enough medical skill practice*	
		Study Material Inconsistency	Learning context full of competition	
		Punitive assessment practices	Having difficulty understanding the content	
	Assessment subjectivity and inconsistency	Cross-teacher answer inconsistency	Getting poor marks	
		Examiner-specific answer requirements	Lack of time to review what have been learnt	
	Temporal recovery deficit	Insufficient recovery time	Unable to answer the questions from the teachers	
		Attendance pressure	Large amount of content to be learnt	
	Inadequate clinical integration	**Delayed start to applied clinical learning**	Unjustified grading process	
		Marginalized ward learning	Conflicts with other students	Intrapersonal and interpersonal related stressors (IRS)
		Perceived inadequate clinical learning	Verbal or physical abuse by other student(s)	
	Quality of teaching	Perceived poor teaching ability	Conflict with personnel(s)	
		Teacher-student relationship	Poor motivation to learn	
		Trauma damping	Verbal or physical abuse by teacher(s)	
Institutional Power & Culture stressors	Hierarchical intimidation	Hierarchical sittings	Conflict with teacher(s)	
		Oppression and humiliation	**Verbal or physical abuse by personnel(s)**	
	Rite-of-Passage cultural ideology	**The "Survivor Mindset": Cultural reproduction of harm**	Not enough study material	Teaching and Learning Related Stressor (TLRS)
		Reform Suppression	Lack of guidance from teacher (s)	
		Suffering normalization	Uncertainty of what is expected of	
Social & Environmental Stressors	Family pressure & Isolation	Parental enforcement	Teacher-lack of teaching skills	
		Family expectation burden	Inappropriate assignments	
		Geographic separation from family	Not enough feedback from teacher	
	Peer dynamics & social Stigma	**Competitive peer comparison**	**Lack of recognition for work done**	Social-related stressors (SRS)
		Social isolation	**Talking to patients about personal problems***	
		Academic failure stigmatization	Lack of time for family and friends	
		Interpersonal conflict	**Unable to answer questions from patients***	
	Financial & career anxiety	Gendered Financial Pressure	**Facing illness or death of the patients**	
		Post-MBBS Income anxiety	Frequent interruption of my work by others	
		Social media financial comparison	**Working with computers**	
		Professional dignity deficit	Parents' wish for you to study medicine	Drive and desire related stressors (DRS)
-	-	-	Unwillingness to study medicine	
-	-	-	Family responsibilities	
-	-	-	**Participation in class discussion**	Group activities related stressors (GARS)
-	-	-	**Participation in class presentation**	
-	-	-	Feeling of incompetence	
-	-	-	Need to do well (imposed by others)	

Table 15. Themes, Subthemes, and Codes of Medical Students' Coping Responses to Perceived Stress.

Theme	Subtheme	Codes
Active coping responses	Emotion-focused Coping (Adaptive)	Food restriction under stress
		Screen-Based escape
		Social connection coping
		Hobbies and recreational engagement
		Music and journaling
		Emotion regulation through achievement
	Problem-focused coping (Adaptive)	Senior peer mentoring
		Sleep as primary restorative
		Sleep reduction
		Pomodoro method
		Maintaining regularity
		Strategic attendance
		Cheat day/ skipping day
Constrained coping responses	Failure to initiate coping strategies	Schedule-blocked coping
		Extracurricular prohibition culture
		Phase-2 coping inaccessibility
	Forced endurance	Constrained adaptation
		Holiday-only true relief

Table 16. Themes, Subthemes, and Codes of Participants' Recommendations for Reducing Stress

Theme	Subtheme	Initial code
Reorienting Medical Education Towards Student Well-being Through System-Level Reform	Creating a Sustainable Academic Structure	Preparatory leave before professional examinations
		Catch-up day
		Fixed assessment schedule
		Later class start time
		In-class breaks
		Two-day weekly rest
		Extend MBBS duration
		Logical curriculum sequencing
		Attendance threshold reduction
		Academic enrichment opportunities
		Recreational activities after examinations
	Transforming Teaching and Learning Practices	Understanding-based learning
		Integrated teaching
		Eliminate practical notebook copy-paste culture
		Clinical procedural skill training
		Standardized learning resources
		Mandatory pre-medical orientation course
		Reduce topic fragmentation
	Strengthening Faculty Accountability and Educational Culture	Teacher empathy and mental health training
		Complaint mechanism
		Student feedback system
	Building Supportive Learning Environments	Sports facilities and co-curricular clubs and events
		Physical infrastructure improvement
		Hostel provision
		Smaller clinical groups
	Providing Accessible and Trustworthy Mental Health Support	Anonymous counselling
		Confidentiality
		Peer counselling
		Counselling integrated into college
		Structural reform alongside counselling