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Burnout Among Basic Sciences Faculty; A Mixed Method Research

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ABSTRACT

Objective: To study the burnout and its associated factors among the faculty of basic sciences in Faisalabad.
Study Design: Mixed-method research.
Place and Duration of Study: Basic sciences faculty of Public and Private Sector Medical Institutes of Faisalabad Pakistan, from Sep to Dec 2021.
Methodology: Oldenburg Inventory was used to assess burnout among the faculty of basic medical sciences after taking the authors' permission. SPSS version 23:00 was used to analyze data, and those who had shown a higher level of burnout were interviewed. Recorded interviews were later own transcribed, and thematic analysis was done.
Results: The mean exhaustion score for the whole basic sciences faculty was 2.35±0.27, while for disengagement from work, it was 2.24±0.24. Value was 0.62 and 0.144 for exhaustion and disengagement, respectively, showing no difference between the burnout level of faculty members in public and private sectors in both domains. Lack of acknowledgement, Lack of resources, Motivational factors and Lack of progress system were the main themes that emerged after an in-depth exploration of faculty members.
Conclusion: The faculty from basic sciences are facing burnout, and the major causes are lack of acknowledgement and appreciation, decreased number of faculty, inadequate resources and ambiguity about future growth in basic sciences. The faculty member advocated the need to develop faculty training, mentoring and post-graduation programmes for the survival and strengthening of basic sciences**.**

Keywords: Basic medical sciences, Burn out, Factors, Faculty.

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INTRODUCTION

Burnout is the condition where a worker's ability to perform is reduced and is associated with stress and lack of self-satisfaction leading to a negative impact on the physical and mental health of that individual.[1] Job performance is negatively affected by the level of burnout of the employee.[2] Burnout has been associated with many physical, psychological and occupational consequences, indicating that necessary measures should be taken to avoid the negative impact of burnout.[3]

Like all professions, the mental and physical well-being of health care providers is significant in providing quality and safe health care to the communities.[1,4] Basic sciences have an integral role in the professional development of health care professionals, and they form the base on which critical knowledge of future health professionals about clinical sciences is built. The role of basic sciences is well established in the learning journey of medical students.[5,6] The teacher mindset has a major impact on the academic and personal growth of students.[7] There is decreased motivation seen in students with an increased prevalence of burnout among the teaching faculty, which ultimately affects the learning of the students.[7,8] It is very important to reduce the burnout and stress of teaching faculty to avoid any negative consequences on students' learning process, ultimately affecting the educational environment and the expected outcomes of any educational journey.

The basic science Faculty in medical science is often ignored despite the significance of their teaching in the professional development of future doctors. This study was designed to assess burnout among the faculty of basic sciences and its associated factors in both public and private sector medical institutes.

METHODOLOGY

This mixed method study was conducted on the basic sciences faculty of three Medical Institutes of Faisalabad Pakistan, involving the Public and the Private Sector. ERC was obtained from the Ethical Committee (No. 48ERC/FMU/2020-2021/159).

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Inclusion Criteria: All the basic science faculty members of MBBS from three institutes, including demonstrators to professors, were included in the study.

Exclusion Criteria: Basic science faculty of BDS was excluded from the study.

Oldenburg Inventory, a reliable and validated tool to assess burnout, was used.[9,10] This inventory had 16 items which explored burnout in two areas, "Exhaustion" and "Disengagement from work". Each item was marked on a 4-point Likert scale with scores ranging between 16 to 64. Eight items were reversed scored. For each area, a mean score of ≤1.62 was considered low, 1.63 to 2.67 was taken as medium and ≥2.68 was considered high.[10] Convenient sampling was used because the number of basic science faculty was limited, therefore a questionnaire was distributed to all the basic sciences faculty of medical institutes.

After quantitative results, those faculty members who had a high level and/or medium level of burnout in both domains were shortlisted for interviews. During the selection of faculty members, the public and private sectors were given equal weightage; eight members from public and eight from private sector institutes were interviewed. Members from different specialities and designations were included to ensure triangulation and have a holistic view. After taking consent, each member was given a code, and the interview was recorded. The questions were finalized after a literature search and sent to four medical educationists before the study for approval. They were slightly modified according to their recommendations, and the interviews were recorded. Transcription was done and sent back to the participant for cross-checking. After approval, a thematic narrative analysis was done and themes were finalized with mutual consensus of the authors. Throughout the process, the confidentiality of the participants was strictly maintained.

Statistical Package for the Social Sciences (SPSS) version 23.00 was used to analyze the data. Mean along with standard deviation were calculated for both domains separately. Independent sample t-test was applied to compare public and private sector institutes, and The *p*-value lower than or up to 0.05 was considered as significant.

RESULTS

A total of 145 questionnaires were distributed, out of which 113 responded (77.093). The details of all the participants were given in Table-I. The mean exhaustion score for the whole basic sciences faculty was 2.35±0.27, while for disengagement from work, it was 2.24±0.24. Regarding exhaustion, 103 (91.15) scored medium, while 89 (78.76) had a medium score in disengagement from work, indicating a medium level of burnout in both areas in the majority of the faculty members.

Table-I: Demographics of Participants (n=113)

	n (%)
Gender	
Male	39 (34.5)
Female	71 (62.8)
Missing	3 (2.0.0)
Sector	52 (46)
Public	
Private	59 (52.2)
Missing	2 (1.7)
Institutes	
Aziz Fatima Medical College	29 (25.6)
Faisalabad Medical University	52 (46.0)
Independent Medical College	32 (28.3)
Specialization	
Anatomy	16 (14.1)
Biochemistry	15 (13.2)
Community Medicine	10 (8.8)
Forensic Medicine	13 (11.5)
Medical Education	4 (0.3)
Pathology	16 (14.1)
Pharmacology	14 (12.3)
Physiology	23 (20.3)
Missing	2 (1.76)

The exhaustion level for the public and private sector was 2.33±0.26 and 2.34±0.28, respectively, while disengagement from work was 2.22±0.27 and 2.25± 0.21, respectively. The *p*-value was 0.62 and 0.144 for exhaustion and disengagement, respectively, showing that there was no difference between the burnout level of faculty members in public and private sectors in both domains (Table-II).

Table-II: Comparison between Public and Private Sector (n=113)

	Exhaustion	Disengagement from Work
Combined	2.35±0.27	2.24±0.24
Public Sector	2.33±0.26	2.22±0.27
Private Sector	2.34±0.28	2.25±0.21

After the quantitative analysis, faculty members were interviewed. Four professors, two associate pro-

fessors, five assistant professors and six demonstrators were interviewed (Figure). After detailed analysis, the following themes were generated (Table-III):

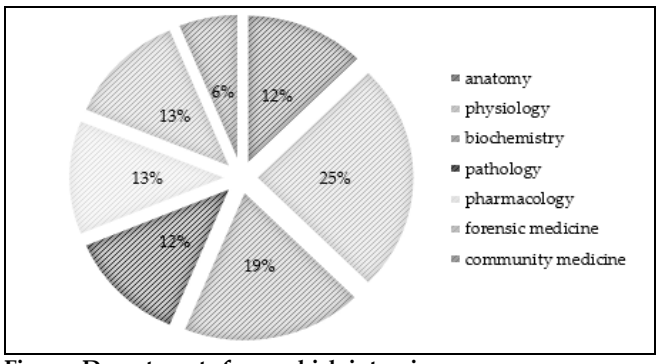

Figure: Departments from which interviews were conducted(n=113)

1. Lack of Acknowledgment: When the Faculty members were explored about the factors associated with their burnout, all the respondents revealed a lack of appreciation and acknowledgement of Basic sciences at an intuitional level as well as in the social community.

(1a) Appreciation for Work: All the faculty members stated that their work and efforts are not duly appreciated by the institution, which causes a decline in their enthusiasm over time. They all highlighted that credit is not given to the basic science faculty, and the clinical side prefers them at all levels.

(1b) Social discrimination: In the community, the teachers from basic sciences were not given the same status as that from the clinical field "we are not even considered doctors", narrated by one of the participants.

2. Lack of Resources: The members of the basic sciences talked about limited resources available to them, which was a major cause of their exhaustion.

(2a) Lack of Faculty: Although highlighted by nearly all the participants, members from the Government sector were more affected by the low number of faculty members working with them. Due to a lack of human power within the team, the faculty members were overburdened and stressed. Another thing was that the young generation was not very interested in taking basic sciences as their ultimate career and the faculty at the demonstrator level kept on changing rapidly due to their switching off to the clinical side.

(2b) Lack of infrastructure: Government sector participants also complained about the lack of proper facilities at their workplace."everything is very old and outdated, not a comfortable environment to work," said participant k.

They also highlighted the lack of modern teaching equipment and basic modalities in the government sector, and if they want something, the procedure is very time-consuming. On the other hand, in the private sector, faculty was not very worried about the physical environment, but they had some issues accessing new teaching modalities.

(2c) Lack of supportive facilities: All the female participants, both from the public and private sector, highlighted that there is no place near college premises where they can leave their children during working hours. Female participants, even though children were independent now, stressed the need to provide day-care facilities close to working areas to improve the satisfaction level of working mothers and decrease their stress.

3. Motivational factors: 11 out of 16 participants indicated that they have joined basic sciences by chance and not by will. In Females, the social role expected from the mothers was the major reason they left clinical sciences and became full-time teachers. Nevertheless, 14 participants were sure to pursue their careers in basic sciences despite this fact**.**

(3a) Students acknowledgement: For all the participants, students were the biggest motivation which encouraged them to be in basic sciences. "It is a great joy to see your students excel", narrated by participant B.

(3b) Support from co-workers: Most of the participants said their colleagues are very supportive and usually helped them during difficult times. However, five participants said there is discrimination between senior and junior faculty, and more work is expected from juniors which is not justified.

4. Lack of Progress system: Basic science faculty was not very hopeful about their progress, and they indicated that there is no system at any level to encourage the basic sciences. "The system is stagnant", said participants B and H.

They all advocated the need to plan and implement a service structure for basic sciences to ensure justified progress and improve satisfaction levels. Another thing was the development of the Faculty Training and Mentoring Programme for basic science faculty for continuous professional development and support during difficult times.

The faculty members also wished that Government must take steps to start post-graduation programs in basic sciences in the city for the prosperity of basic sciences and to encourage the young generation in this field.

Table-III: Themes and Sub-Themes(n=113)

Theme	Sub-theme	Description
Lack of Acknowledgment	(1a) Appreciation for work	"no credit is given to us" "there should be acknowledgment, like a best teacher award in basic sciences at the end of year"
	(1b) Social Discrimination	"How can a person only teaching e a doctor?" "It was expected from us that we will be seeing patients, so yes, it's against the social expectations to teach"
Lack of Resources	(2a) Lack Of Faculty.	"I have very less faculty members in my department, so we have extra duties" "the demonstrators we train, the usually don't stay, so have to manage"
	(2b) Lack of infrastructure	"The things need renovation, chairs, air conditioners and others…" "there should be LMS and other modern things for us to teach"
	(2c) Lack of supportive facilities	"Obviously, I have to manage my children, but there is no place to leave them"
Motivational factors	(3a) Students' acknowledgment	"when students come and meet you, it's a great feeling"
	(3b) support from co-workers	"My colleagues have supported me a lot".
Lack of Progress system		"There must be motivational workshops for the faculty members" "MPhil and FCPS should be started in Faisalabad. We have to go out to Lahore or Islamabad and it is not easy"

DISCUSSION

The issue of burnout is thoroughly studied worldwide, but the basic sciences faculty is not being explored in-depth. The limited studies, where burnout in teaching faculty of basic sciences were studied, combined with clinical sciences, and less weightage was given to them compared to clinical sides.[11,12] The importance of basic sciences in developing a strong foundation for clinical knowledge is well established.[6] If teachers from basic sciences are experiencing burnout, this will affect their work efficiency, ultimately affecting the learning of students and, in a broadened sense, decrease the overall quality of medical education.[7] A decrease in student motivation and adverse academic achievement was directly associated with teachers' burnout level.[13]

The burnout level of our participants from both public and private sectors was in a medium range. A study on all the faculty of a public sector medical Institute in Pakistan showed that clinical faculty has a higher burnout level than those from basic sciences.[11] Medical Educationists, a discipline of basic sciences from all over Pakistan, showed a moderate level of burnout, and the results are consistent with our study.[1] The available literature indicates that the faculty of basic sciences is facing a moderate burnout level, which needs to be addressed.

Lack of acknowledgement and appreciation, along with social identity crisis, were the major factors highlighted by our participants as a cause of their burnout. Compared to this, long working hours, increased workload and less time for the family were the main factors responsible for causing burnout among faculty of medical sciences.[11,14] Similarly, the increased workload was the main factor responsible for burnout in clinical teachers in Iran.[12] A study conducted in Italy on school teachers also showed that the major cause of burnout was organizational injustice and worked environment.[15] Uncomfortable working environments were a common factor stressed by participants of our study as well as of the previous studies as an important component causing burn out.[3,11]

The participants of our study advocated the need to establish a support and motivation programme for teachers of basic sciences so that their problems can be addressed well on time. The study by Stupnisky *et al*. had shown a positive implication of teacher development and support programmes on teachers' effectiveness.[16] The institutions can increase faulty vitality by making their policies friendly for the working members and providing them opportunities to excel in a fair, stress-less environment.[17,18]

Our study highlighted that providing professional development opportunities, acknowledgement of work and making the work environment comfortable by providing resources can decrease the burnout

level of basic science faculty hence improving their effectiveness.

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LIMITATION OF THE STUDY

This study was conducted on the basic science faculty of a single city. Basic science faculty from other regions must be explored to strengthen further the factors that emerged in this study. Demographic variations can be studied in detail to see their relationship with the burnout level of basic science faculty.

CONCLUSION

The faculty from basic sciences are facing burnout, and the major causes are lack of acknowledgement and appreciation, decreased number of faculty, inadequate resources and ambiguity about future growth in basic sciences. The faculty member advocated the need to develop faculty training, mentoring and post-graduation programmes for the survival and strengthening of basic sciences.

Conflict of Interest: None.

Author's, Contribution:

AY: Direct contribution, ZAC:, SBE:, HUF:, MMT: Intellectual contribuion.

REFERENCES

1. Akram Z, Sethi A, Khan AM, Zaidi FZ. Assessment of burnout and associated factors among medical educators. Pakistan J Med Sci 2021; 37(3): 827–832.
2. Prentice C, Thaichon P. Revisiting the job performance–burnout relationship. J Hosp Mark Manag 2019; 28(7): 807–832.
3. Salvagioni DAJ, Melanda FN, Mesas AE, González AD, Gabani FL, De Andrade SM. Physical, psychological and occupational consequences of job burnout: A systematic review of prospective studies. PLoS ONE 2017; 12(1): 102.
4. Bridgeman PJ, Bridgeman MB, Barone J. Burnout syndrome among healthcare professionals. Am J Health-System Pharm; 2018; 75(1): 147–152.
5. O'Neill PA. The role of basic sciences in a problem-based learning clinical curriculum. Med Educ 2000; 34(8): 608–613.
6. Mylopoulos M, Woods N. Preparing medical students for future learning using basic science instruction. Med Educ 2014; 48(7): 667–673.
7. Zhang J, Kuusisto E. How Teachers' and Students' Mindsets in Learning Have Been Studied: Research Findings on Mindset and Academic Achievement. Psychology 2017; 08(09): 1363–1377.
8. Shen B, McCaughtry N, Martin J, Garn A, Kulik N, Fahlman M. The relationship between teacher burnout and student motivation. Br J Educ Psychol 2015; 85(4): 519–532.
9. Khan A, Yusoff RBM. Psychometric testing of oldenburg burnout inventory among academic staff in Pakistan. Int Rev Manag Mark 2016; 6(4): 683–687.
10. Halbesleben JRB, Demerouti E. The construct validity of an alternative measure of burnout: Investigating the English translation of the Oldenburg Burnout Inventory. Work Stress 2005; 19(3): 208–220.
11. Hashmi AM. The challenge of burnout in public medical teachers in Pakistan: A mixed methods study. Pakistan J Med Sci 2021; 37(5): 1268–1275.
12. Haghighinejad H, Jafari P, Rezaie M, Farrokhi M, Jafari M, Ramzi M. Burnout Comparison between Clinical and Basic Sciences Faculty of a Medical School and Evaluation of Related Factors. Iran J Psychiatry 2021; 16(4): 399–408.
13. Madigan DJ, Kim LE. Does teacher burnout affect students? A systematic review of its association with academic achievement and student-reported outcomes. Int J Educ Res 2021; 105(1): 101714.
14. Azam K, Khan A. Causes and Adverse Impact of Physician Burnout : J Coll Physicians Surg Pakistan 2017; 27(7): 1–9.
15. Capone V, Joshanloo M, Park MSA. Burnout, depression, efficacy beliefs, and work-related variables among school teachers. Int J Educ Ress 2019; 95(1): 97–108.
16. Stupnisky RH, BrckaLorenz A, Yuhas B, Guay F. Faculty members' motivation for teaching and best practices: Testing a model based on self-determination theory across institution types. Contemp Educ Psychol 2018; 53(1): 15–26.
17. Shah DT, Williams VN, Thorndyke LE, Marsh EE, Sonnino RE, Block SM, et al. Restoring Faculty Vitality in Academic Medicine When Burnout Threatens. Acad Med 2018; 93(7): 979.
18. Alves PC, Oliveria AF, Paro HBMDS. Quality of life and burnout among faculty members: How much does the field of knowledge matter? PLoS One 2019; 14(3): e0214217.