

Strategies for improving faculty retention: A mixed-methods study in a private medical university in Karachi, Pakistan

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Abstract

Objective: To determine the strategies that improve faculty retention at a medical university.

Methods: The mixed-method study was conducted at Bahria University Medical and Dental College, Karachi, from August to September 2020, and comprised faculty members of either gender associated either with the university or with Pakistan Navy Station Shifa Hospital. Qualitative component comprised of semi-structured interviews. Quantitative data was collected using the 35-item Faculty Retention Strategies Questionnaire (FRSQ). Data was analysed using SPSS 23. Exploratory factor analysis (EFA) was done to extract the common factors influencing faculty retention.

Results: Of the 182 faculty members approached, 101(56%) responded. Of them, 66(65.3%) subjects were females, 35(34.7%) were males, 46(45.5%) were aged <36 years, and 65(65.3%) were working at the university for <5 years. The factors affecting faculty retention were direct communication of departmental head with faculty, timely promotions, feedback on teaching performance to junior faculty, clear employment policies, protected research time, teaching expertise-based promotions, implementing innovative faculty ideas, scholarships for postgraduate faculty, faculty administrative positions, equal junior faculty workloads, transport provision, competitive pay-scale and faculty development workshops. Item mean was 4.143±0.380, Cronbach's alpha was 0.894 and inter-item correlation was 0.223. EFA revealed a 4-factor solution: 'institutional work support', 'faculty development', 'faculty communication' and 'faculty leadership initiative'.

Conclusion: Implementing these strategies could possibly lead to long-term faculty retention.

Keywords: Faculty attrition, Faculty development, Faculty resignation, Faculty retention, Faculty turnover. (JPMA 71: 2755; 2021) DOI: <https://doi.org/10.47391/JPMA.1927>

Introduction

Highly qualified and proficient faculty acts as the foundation of an educational institute. Faculty retention plays a pivotal role in the efficiency and regulation of academic institutes.¹ The resignation of faculty results in an irreplaceable loss and unbalanced faculty composition, thus increasing the attrition rate. This leaves the remaining faculty with the brunt of additional departmental responsibilities. There are also institutional financial burdens of recruitments and faculty development of academic personnel unaccustomed to the institute. The newly-appointed faculty is unfamiliar with instructional strategies and grading of results, and is thus unable to become an integral component of the departmental unit with immediate effect. The consequences that follow are decreased interaction and communication between faculty and students, inadequate academic mentoring by senior faculty for junior faculty, insufficient time for student feedback and unsuccessful revisions of modules and courses. This

affects students' confidence and their relationship with faculty which results in impairment in academic performance and student learning outcomes, affecting the overall academic standards of the programme. There is further inadequate time for scholarly endeavours of authoring articles with subsequent decline in research publications.

The term faculty retention is defined as institutional policies which retain faculty and prevent their resignation, while the term attrition is defined as a decrease in the number of faculty or employees due to retirement and resignation who have not been substituted by new inductions.² Faculty retention and attrition are closely associated, therefore factors that cause retention also prevent attrition. Faculty turnover is crucial in terms of cost of recruitment and revenue generation. It is a parameter of loss of human and financial capital. The cost of substituting clinicians, surgeons and basic health sciences faculty is considerably high. Five out of every 10 faculty members resign within a period of 10 years.³ According to the American Association of Medical Colleges (AAMC), there was a retention rate of 43% for 4,279 assistant professors between 1981 and 1997, suggesting that faculty

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development programmes lead to faculty retention.⁴ Over the same period, the attrition rate was 38%.⁴ Faculty turnover results in monetary loss to academic institutes. New recruitments for substituting a generalist could possibly cost \$115,554 and for a specialist \$286,503.¹ At Bahria University Medical and Dental College (BUMDC), 110 faculty members resigned between 2014 and 2020, indicating a moderate attrition rate. However, the total number of faculty resignations in each year was not recorded.

There have been very few studies conducted on faculty retention,⁴ and most of them have been conducted in the United States⁵ which generally focused on already resigned faculty. The factors affecting medical teaching faculty retention are often based on the theoretical framework of the Herzberg's Theory of Motivation and Maslow's Hierarchy of Needs.⁶

A study in Pakistan determined the role of salary and professional growth opportunities on faculty retention through a 14-item questionnaire, and found that both were positively correlated with retention, but opportunities for professional growth had a greater impact.⁷

The current study was designed to test the relationship of Herzberg's Motivation Theory and Maslow's Hierarchy of Needs to retention strategies, and to determine the strategies that improve faculty retention.

Subjects and Methods

The mixed-method study was conducted at Bahria University Medical and Dental College (BUMDC), Karachi, from August 14 to September 3, 2020, and comprised faculty members of either gender associated either with the university or with Pakistan Navy Station (PNS) Shifa Hospital. After approval from the institutional ethics review committee, the sample size was calculated using OpenEpi version 3.01,⁸ with 50% anticipated rate of faculty attrition, considering the factors given in the present study, 10% margin of error and 95% confidence interval (CI).^{1,9} The sample was taken from among all the full time basic health sciences and clinical faculty members who had been serving in teaching capacity for >6 months in the university and tenured PNS uniformed faculty affiliated with the university, while faculty members having a teaching experience of <6 months were excluded.¹⁰

Data on the quantitative component of the study was collected using the new Faculty Retention Strategies Questionnaire (FRSQ) that has 10 demographic variables and 35 items.¹ The online Google form questionnaire link with informed consent section was sent through mobile

text message and WhatsApp message over a period of three weeks. Two reminders were given 2 days apart for BUMDC faculty and 3 days apart for PNS Shifa faculty.

The qualitative component of the study comprised semi-structured interviews of three faculty members of senior lecturer level, each lasting 10-25 minutes. Written answers during the interviews were documented for all three interviewees and voice recordings were completed for two faculty members. Transcripts were developed and themes were generated from the interviews. Responses of the participants were categorised into themes.

Qualitative component was aimed at generating themes for the quantitative component. Therefore, the quantitative questionnaire was developed using the identified emerging themes from the qualitative analysis of semi-structured interviews. The questionnaire was also based on literature review using Google Scholar search engine^{1-4,9,11-15} with the relevant key words on a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree'.^{1,9} The most widely employed method for determining different constructs in a survey is the Likert scale.¹⁶ The questionnaire was reviewed for content validity by two medical educationists. A pilot study was conducted with 10 faculty members for face validity and feasibility, but only 6 responded.

Data was recorded anonymously with confidentiality.¹ Data was analysed using SPSS 23. Frequencies and percentages were used for all qualitative demographic characteristics. Descriptive statistics in terms of mean with standard deviation were recorded, and missing values were adjusted for all items on faculty retention. Cronbach's alpha was applied for internal consistency as a measure of scale reliability. Exploratory factor analysis (EFA) approach was adopted for construct validity to extract the common factors influencing the faculty towards retention. Kaiser Meyer Olkin (KMO) test was used to test the adequacy of factor analysis. Principal component rotated matrix showed the loaded items on extracted component. In component matrix, loadings values >0.30 were taken to mention the role of item in the extracted component. Scree plot was used to give the graphical presentation of extracted factors, and an eigenvalue of 2 was taken as the cut-off. $P < 0.05$ was considered statistically significant. Inter-item correlation was applied for homogeneity of the scale and correlation of items,¹⁷ 't' test and one-way analysis of variance (ANOVA) test was also performed for faculty retention and demographic variables..

Results

Of the 182 faculty members approached, 101(56%)

Table-1: Demographic characteristics (N=101).

Sr.No.	Characteristics	N	%
1	Gender	Female	66 65.3
		Male	35 34.7
2	Age Group	Less than 36 years	46 45.5
		36 to 54 years	43 42.6
		55 years and above	12 11.9
3	Discipline of faculty	Medical	56 55.4
		Dental	32 31.7
		Physiotherapy	5 5.0
		Other	8 7.9
4	Department	Basic Health Sciences	52 51.5
		Clinical Health Sciences	43 42.6
		Other	6 5.9
5	Designation	Lecturer	28 27.7
		Senior Lecturer	35 34.7
		Assistant Professor	11 10.9
		Associate Professor	6 5.9
		Professor	11 10.9
		Registrar	9 8.9
		Other	1 1.0
6	Institutional affiliation	BUMDC faculty	84 83.2
		PNS Shifa uniformed faculty	17 16.8
7	Head of Department	Yes	15 14.9
		No	86 85.1
8	BUMDC Job Experience	Less than 5 years	65 65.0
		Between 5 to 10 years	32 32.0
		More than 10 years	3 3.0
9	Educational qualification	Graduation (MBBS, BDS, DPT)	41 40.6
		Postgraduation (Masters, FCPS, FRCS/FRCP)	49 48.5
		PhD	6 5.9
		Other	5 5.0
10	Number of research publications	Less than 5	61 62.2
		Between 5 and 10	21 21.4
		More than 10	16 16.3

BUMDC: Bahria University Medical and Dental College, MBBS: Bachelor of Medicine, Bachelor of Surgery, BDS: Bachelor of Dental Surgery, DPT: Doctor of Physiotherapy, FCPS: Fellowship of the College of Physicians and Surgeons, FRCS: Fellowship of the Royal Colleges of Surgeons, FRCP: Fellowship of the Royal College of Physicians.

responded. Of them, 66(65.3%) subjects were females, 35(34.7%) were males, 46(45.5%) were aged <36 years, and 65(65.3%) were working at the university for <5 years (Table-1).

The item mean was 4.143±0.380. Cronbach's alpha of 35 items was 0.894 and inter-item correlation was 0.223 (range: 0.280-0.737). Items were positively correlated with each other except items 28 and 35 which were negatively correlated with most items.

The mean responses on all the 35 items showed the tendency of responses from 'agree' to 'strongly agree' except on the item that promotion process should include research publications only (Table-2). Timely promotions and the need for department heads to communicate directly with faculty during meetings were the two most suggested strategies for faculty retention (Figure-1).

There was no significant difference in faculty retention strategies with respect to gender, institute and head of department (p>0.05). Also, there was no significant difference in faculty retention strategies with respect to age groups, discipline, designation, institution, experience and qualification (p>0.05).

The main emerging themes in qualitative analysis were incentives for faculty with good pay scale, and postgraduate programmes to be developed in all disciplines, which were presently in three basic health sciences subjects. Long working hours and strict sign-in and sign-out monitoring had led to difficulties. Permission to use provident fund when needed should be granted and scholarship should be provided for faculty on unpaid postgraduate leave. Other perceptions were lack of appreciation of faculty based on performance, excessive and unequal distribution of workload on junior faculty and absence of induction policies with

recruitment of freshly graduated candidates who resign soon after joining, thus creating an 'acute faculty deficiency'.

The KMO value was 0.77 and was considered adequate for factor analysis. The principal component method EFA revealed a 4-factor solution. The extracted factors contributed to 48.99% of the variance; the first factor contributed to 28.6% variation, the second factor contributed to 7.5% variation, while the third and fourth factors explained 6.5% and 6.2% variation, respectively.



Figure-1: Bar chart.

Table-2: Descriptive statistics of items on faculty retention.

Sr.No.	Items on Faculty Retention	N(%)*	Mean (\pm SD)
1	Faculty development workshops should be mandatory for faculty	85(84.2)	4.1(1)
2	There should be teaching sessions of departmental subject for faculty	78(78)	3.9(1)
3	Teaching portfolio should be developed by faculty	81(80.2)	4(0.9)
4	Protected time for research should be provided	93(92.1)	4.4(0.8)
5	Leadership skills should be enhanced in faculty by administrative positions	89(88.1)	4.2(0.9)
6	There should be junior faculty input in curriculum development	82(81.2)	4(0.8)
7	Departmental head should directly communicate with faculty through meetings	96(96)	4.4(0.7)
8	There should be communication between all faculty members	96(96)	4.6(0.7)
9	Departments within the institute should collaborate with each other	96(96)	4.4(0.7)
10	Departmental head should provide feedback on teaching performance to junior faculty	95(94.1)	4.4(0.7)
11	There should be equal distribution of workload for junior faculty	89(88.1)	4.3(0.8)
12	There should be a faculty retention proposal for each senior resigning faculty member	73(72.3)	3.9(0.9)
13	There should be performance evaluations with incentives	96(95)	4.5(0.7)
14	There should be timely promotions	97(96)	4.7(0.8)
15	There should be administrative support for faculty complaints	97(96)	4.6(0.7)
16	Former subject teaching experience during lecturer appointments should be preferred	78(77.2)	4.1(0.9)
17	The institute should provide technological support for faculty	96(95)	4.6(0.7)
18	Postgraduate programmes should be developed in all health departments	95(94.1)	4.6(0.7)
19	Scholarships should be provided to faculty enrolled in postgraduate programmes	87(88.8)	4.5(0.9)
20	There should be junior faculty input in policy decision making	71(70.3)	3.9(0.8)
21	Faculty serving in the capacity of extracurricular activities should receive faculty awards	85(84.2)	4.2(0.8)
22	College timings should be shortened	57(56.4)	3.7(1.2)
23	Responsibilities should be assigned according to faculty potential	78(77.2)	4(1)
24	The pay scale should be comparable to other national institutes	85(85)	4.4(0.9)
25	There should be a policy to avail provident fund if required by faculty	92(92)	4.5(0.8)
26	Promotion process should include job competence	92(92)	4.4(0.8)
27	Promotion process should include teaching expertise	88(87.1)	4.3(0.8)
28	Promotion process should include research publications only	11(10.9)	2.3(1)
29	Faculty offices should be provided according to faculty position	85(84.2)	4.1(0.9)
30	Prior notice should be given to junior faculty for assigned responsibilities	87(87)	4.3(0.7)
31	Relevant innovative ideas by faculty should be implemented	91(91.9)	4.2(0.7)
32	Faculty Get-togethers should be held twice a year	72(71.3)	4(1)
33	Transport facility should be provided by institute	86(85.1)	4.3(1)
34	There should be clear institutional policies regarding employment	95(94.1)	4.5(0.7)
35	There should be a strict sign-in and sign-out policy for faculty	44(43.6)	3.3(1.3)

*Percentages were given for Agree/Strongly Agree items.

A total of 22 items loaded on factor 1, 4 items loaded on factor 2, 3 items loaded on factor 3, and 4 items loaded on factor 4. Items 4, 7, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 23, 24, 25, 26, 27, 29, 30, 31, 33 and 34 loaded on factor 1, while items 1, 2, 3 and 28 loaded on factor 2, items 9, 10 and 32 loaded on factor 3, and items 5, 6, 20 and 22 loaded on factor 4. Item 8 had a cross-loading on factors 1 and 3, while item 35 did not load on any factor. As such, 33 items were retained. The item communalities ranged between 0.206 and 0.671.

Discussion

The current study was designed to determine the strategies for improving faculty retention. The theoretical framework taken into consideration for development of the questionnaire was the Herzberg's Theory of Motivation and

Maslow's Hierarchy of Needs. According to the Herzberg's Theory of Motivation, there are five elements that enhance work performance: success, acknowledgement, meaningful work, dutifulness and career progress. The Maslow's Hierarchy of Needs describes individual needs in terms of work by postulating a spectrum of physiological needs from survival to self-actualisation by developing full attainment of one's potential.⁶ Therefore, the results are closely associated with the theoretical framework. We named the developed questionnaire Faculty Retention Strategies Questionnaire (FRSQ), which revealed valid and reliable results.

Our results revealed a 4-factor solution. The first factor was labelled as 'institutional work support', the second factor as 'faculty development', the third factor as 'faculty communication' and the fourth factor as 'faculty

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leadership initiative'. The factors affecting faculty retention in descending order were: communication of departmental head directly with faculty through meetings, timely promotions, feedback on teaching performance to junior faculty, clear institutional policies regarding employment, protected time for research, teaching expertise as a part of promotion process, implementation of relevant innovative ideas by faculty, scholarships for faculty enrolled in postgraduate programmes, faculty administrative positions for enhancing leadership skills, equal distribution of workload for junior faculty, provision of transport facility, a competitive pay scale and faculty development workshops. These were consistent with the qualitative component of the research according to which factors improving retention were high pay scale, shorter and flexible working hours, permission to use provident fund, scholarships for faculty on unpaid postgraduate leave, faculty awards, equal workloads for junior faculty and well-defined employment policies with recruitment of faculty with former teaching experience.

In a study conducted in Punjab, Pakistan, a 27-item questionnaire was administered to 273 medical practitioners in a public hospital setting. Results suggested that improved induction and selection criteria, good financial compensation and better medical and professional training lead to higher retention.² These findings were consistent with our results. However, this study was conducted in clinical practitioners and not medical teaching faculty and the current study revealed other factors besides those mentioned in the earlier study, and had a mixed-method design including both qualitative and quantitative methods. Literature could not reveal any other similar study conducted in Pakistan.

In a study conducted at California University of Science and Medicine-School of Medicine (CUSM-SOM), 12 pioneer faculty members were administered a 32-item questionnaire based on factors affecting faculty retention and attrition. The results were categorised into 4 themes: 'personal', 'support', 'institution' and 'work environment'. The 'personal' theme revealed satisfaction with career growth, pay, medical insurance and academic position and dissatisfaction with pension. The 'support' theme revealed satisfaction with departmental leadership and dissatisfaction with career guidance and counselling. The 'institutional' theme revealed satisfaction with faculty interactions and departmental leadership, neutrality for promotion, and dissatisfaction with career guidance and counselling. The 'work environment' theme revealed institutional support for the respective disciplines and inclusiveness of diverse faculty.¹ These findings were

similar to the factors revealed in the current study.

A 40-item survey was administered at the University of Colorado School of Medicine (UCSOM) to 139 serving and resigned faculty, out of whom 60(43.1%) responded. Results revealed that dissatisfaction with departmental leadership, communication between faculty, professional growth, acknowledgement of teaching and clinical excellence and more time spent in clinical service contributed towards attrition. The factors similar to our study in terms of retention strategies were effective departmental leadership and communication and opportunities for career growth.³

In another study, an 18-item questionnaire was administered at the School of Medicine (SOM) to 177 resigned faculty members out of whom 85(48%) responded. The questionnaire revealed a 4-factor solution. The primary reasons for faculty departure were found to be lack of professional growth, inadequate pay scale and disturbed work-life balance.⁹ The first two factors reported were consistent with our study, but it considered the perceptions of resigned faculty members, while the current study focused on the perceptions of presently serving faculty.

Faculty development programmes in minority faculty groups resulted in considerably high retention rates of 93% in a study conducted at the University of California, San Diego School of Medicine.¹⁸ These findings were similar to those of the current study. In another survey conducted in 26 United States schools, factors contributing to faculty attrition were lack of collegiality and connectedness, isolation, misalignment between institutional and personal values, dissatisfaction with work, lack of institutional support and absence of personal efficacy. The factors identified were different from our findings.¹¹ A 51-item questionnaire was administered to Doctor of Medicine (MD) clinical faculty in 23 US medical schools. Results revealed high-standard patient-centred medical care and work-place cooperation and connectedness with colleagues were related to retention.¹⁸ These outcomes were also different from our findings.

A systematic review published in 2016 considered interventions employed that led to primary healthcare practitioner retention. These included full scholarships which obligated them to practise in rural areas, induction of rural undergraduate medical students, providing relief in visa or work permit for obligated service, promoting residencies in rural localities and improving academic performance in research and teaching.¹² Another systematic review revealed retention of general practitioners in rural practice. Factors promoting retention were rural descent, undergraduate and

postgraduate clinical rotations based in rural localities and integrated rural curriculum.¹³ However, both these systematic reviews emphasised on clinical practice in rural areas only and not on medical teaching.

To the best of our knowledge, this could possibly be one of the first developed questionnaires in Pakistan for determining teaching medical faculty retention strategies. The previous study in Pakistan was conducted in clinical practitioners only. Therefore, this is possibly not a replication of a previous study, as a new questionnaire was developed.

In terms of limitations, the current study was a single-institution research with a small sample size. As such, the generalisability of results could not be ascertained. The sample size for EFA could possibly have been relatively small, but smaller sample sizes have also been reported in literature.^{9,19} The response rate was 56%, therefore the results may not be representative of the perspectives of the entire faculty, although other similar studies reported even lower response rates of 43.1% and 48%.^{3,13} In general, response rates of questionnaires administered online is much lesser in comparison with paper-based questionnaires. A comparative study reported 33% and 56% for online and paper-based surveys respectively.^{10,20} We also did not take the intent to leave the academic institution into consideration.

Further comparative studies on faculty retention on a multi-institutional level could include interventions based on faculty development programmes for professional growth and progress.^{1,12}

Conclusion

The retention factors identified were closely associated with the Herzberg's Theory of Motivation and the Maslow's Hierarchy of Needs. Implementing these strategies could possibly lead to long-term faculty retention and may result in the prevention of financial and human capital loss.

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