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Research Article

THE IMPACT OF MEDICAL FACULTY'S RESEARCH ACTIVITIES ON BASIC SCIENCE EXAMINATION RESULTS OF MEDICAL STUDENTS

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ABSTRACT
Background: Academic staff in the University is engaged in education and research activities, and in upgrading process each of two issues should be considered. In this study impact of faculty promotion which is result of research activities of faculty on level of student learning and eventually, its effects are reflected in basic science comprehensive exams of Medical students in zahedan. ***Methodology****:* This study is a cross-sectional study, carried out to check the faculty promotion impact due to research activities on GPA (Grade point average), standard score, classification and rating of each group, ranking of different groups of school of Medicine in zahedan. ***Results:*** Available results of GPA, standard score, classification and ratings of all subjects except one or two showed negative correlation co-efficiency at a level of p<o.o5 with faculty promotion, respectively in these nineteen terms. ***Discussion:*** Faculty Research Activities had no any impact on basic science exam results of many groups. ***Conclusion:*** According to these results it appears the present criteria of faculty Research Activities has no any positive influence on student's education. To put in nut shell, we can say that these findings suggest that research and educational activities at present are not aligned, but they are moving in two different directions.

Keywords: *Faculty Research Activities, Faculty Educational Activity, Faculty Promotion, Basic Science Comprehensive Exam, Zahedan University*

INTRODUCTION
Since each type of human-centered development is a key component of the country's higher education system and human's health. Skilled manpower in this field is engaged in two main activities of teaching and research. Hence, it is necessary entire system of academic and scientific management support teaching and research process. As the duties of faculty members include production of knowledge and convey knowledge and professional services to community. It is obligatory academic activities of faculty members in each of these dimensions are identified and documented and balanced, and these different dimensions of activities should develop harmoniously without affecting each other. Presently, in faculty research activities are considered, but not educational activities, therefore, academic faculty in recent years has found more propensities to research than educational activities, because in faculty research activities are considered as the most important criteria for promotion , but not the educational activities.
In upgrading process of faculty, continuous assessment of various activities of faculty members according to different tasks assigned to them, fair judgment should be carried out. To achieve this, at first faculty activities should be assessed quantitatively, although it is ideal to assess the activities qualitatively. Presently, ground for promotion of faculty member's research activities is easily calculated, but in the field of teaching these activities are not calculated quantitatively (except number of units per semester).
From the view point of training three factors: faculties, students and training process shape the basis of education. Evaluation of students is essential and comprehensive Basic Science and Medical Internship exams are important evaluations of medical students. Passing such exams provide possibility for continuing their further education. In various studies the impact of effective factors on students in passing comprehensive Basic Medical Science Exam is referred. Such as high school grade, age, marital status,

Basic Science period, mean score of Basic Science duration, gender, educational facilities, dormitory residence and quota etc. are included. But in various studies the impact of academic degrees of different faculty on results of medical student success in comprehensive basic science exam is not referred. On the other hand, it seems degree of academic faculty is one of the most important indicators in evaluation of educational performance.

Consequently the more is the recognition of degree of academic faculty; the greater is the impact on improving the quality of the learning process.

Therefore, this study surveys the faculty research activities outcome and consequently faculty promotion on learning of students and its impact reflected on the basic science examination results including factors such as mean score and standardized scores, group classification, and rankings.

MATERIALS AND METHODS

Methodology

This is a cross-sectional study done on the impact of faculty research activities on basic science examination results. Therefore, initially basic science examination result sheets of nineteen terms starting from 2001 to 2010 sent by Ministry of Health, Treatment and Medical Education to School of Medicine was surveyed in this study (Table 1).

Then survey of faculty promotion during different years was carried out. All the faculty were rated according to their ranking as instructor (1), assistant professor (2), associate professor (3) and full professor (4), and then average ranking rate of each faculty group in different years have been identified (Table 1).

Medical Education Assessment Center affiliated to Ministry of Health throughout years sends the results of basic science and pre-clinical comprehensive examinations of students sends to each college, as well as, calculate, GPA (grade point average), standard score, ranking and classification of different groups of colleges compared to other colleges in each year and in each group separately and send to respective colleges.

And then the average faculty ranking of different groups in different years correlated with GPA, standard score, ranking, and classification was analyzed using SPSS.15 Microsoft and correlation of co-efficiency less than p<o.o5 was acceptable. In connection with standard score, we can say , If the standard scores of each lesson is positive it means that average standard score of students is higher than the average of entire colleges

If, the standard scores of each lesson is negative it means that average standard score of students is less than the average score of entire colleges of the country. Universities according to their results attained divided into five groups including very poor (1), poor (2), moderate (3), good (4) and excellent (5) groups .In this study qualitative rankings are transformed into quantity rankings (1,2,3,4, and 5) so that statistical calculations can be supplied. In addition, ranking of each educational group in comparison with similar educational groups of universities in entire country is determined.

RESULTS AND DISCUSSION

Results

The relationship between faculty promotion degree with the factors such as average score (GPA), standard score, group classification and rank ranking as shown in (table 2) has been presented. The findings suggest the average scores in the course of Virology of students at basic science comprehensive exam has shown positive Correlation Co-efficiency (0.51) at significant level of p<0.03 with faculty promotion in nineteen exams, And Biochemistry (-0.70), Histology (-0.61), and Psychology (-0.47) have shown negative correlation co-efficiency with faculty promotion at a significant level of p<0.05.On other subjects, including Bio-physics, Nutrition, Mycology, Parasitology, Embryology, Public-health, Pathology, Bacteriology, Immunology, English, Anatomy, Genetics, Physiology and Entomology showed no significant relationship between students' average scores with degree of academic faculty. Studies have also shown that standard indices of Biochemical (-0.47), Mycology (-0.49), Parasitology (-0.73,) and

Bacteriology (-0.53) had negative relationship with faculty promotion at a significant level of $p<0.05$ (table2). In the other subjects, no significant correlation seen between standard score and faculty promotion. The results also suggested that the relationship between the classifications of courses with faculty promotion was similar to the relationship between faculty promotion and standard score. These differences relate to the different coefficients. So other indices of Bio-chemistry (-0.51), Mycology (-0.53), Parasitology (-0.61), and Bacteriology (-0.51) showed negative significant relationship with faculty promotion at the level of $p<0.05$. In the other courses, there is no significant relationship between faculty promotion and Lesson classification. The findings suggest that ranks of Mycology (0.49), and Parasitology (0.57) groups showed positive significant correlation at a level of $p<0.05$ with faculty promotion.

Discussion

The study results indicated that in basic science exams of student's average scores only in Virology course showed positive significant relationship with faculty promotion in all nineteen exams.

Mean GPA and standard score, and classification of students in Bio-chemistry, Histology, Psychology, Mycology, Parasitology, and Bacteriology showed significant negative correlation with faculty promotion at a level of $p<0.05$. In other groups faculty promotion had no any impact on basic science exam results of students. In addition rankings of Mycology and Parasitology with respect to faculty promotion increased compared to other colleges that indicate more decline in students' results in these courses. Overall, these results indicate that the current system of faculty evaluation, faculty promotion has no positive impact on teaching and student learning. Why? The causes must be sought in the current process of promotion. , The promotion process should be consistent and balanced assessment of the various activities of the faculty with respect to their obligations. So that, we can have true and fair judgment.

First, we have to look at what is considered as an important factor in promoting faculty, it is their practice at research activities that are from quantitative perspective calculated easily. But educational activities of faculty are not simply calculated quantitatively. Currently continuous quantitative evaluation of educational dimension is carried out only with evaluation of faculty by students which are common in universities. Although, this affair (evaluation of faculty by students) leads to strengthen reinforcement and reformation of weak points and educational program to some extent, However, evaluation of faculty by students depends on ability of lecturers to deliver lecture and attractiveness of lectures (Shelvin, 2000). On the other hand, motivation of students has great impact on evaluation of faculty and class lesson (Chau, 1997). So, evaluation of faculty teaching performance by students is not sufficient solitude criterion. But, several other criteria regarding faculty teaching performance should be considered in evaluation of faculty, unfortunately currently do not play any role in faculty evaluation and promotion.

In terms of active teaching (that stimulate the minds of students to understand better) respect to students, presentation of contents in a desirable and appropriate manner is appreciated in better understanding (Patrick, 1998), Organized class lessons, observe fairness in tests and sense of student accomplishment (Brightman, 1993), Questions discussion and collaborative learning and effective evaluation methods of the students (Vanvoorhis, 1999). Attending class with adequate preparation of lecture. Be interested enough in course subjects and students and be easily available to students (Rice RE, 2000). Communicate theoretical aspects with practical, interact with students in class, be social with students, and be familiar with subjects etc. (Harris, 1998). Are a collection of factors that result in dynamic knowledge and better understanding of students and their success in a variety of exams? Therefore, it seems that these factors are necessary in an educational campus such as university to be considered for faculty promotion. But, some believe that only research play main role in promoting faculty and training activities are not sufficient enough for an upgrade (Jalili, 2009; Wichian, 2009). Since the initial consideration for faculty promotion, research activities of the faculty are surveyed. Only, after fulfilling the criteria for research, educational and other criteria would be considered. Therefore majority of faculty are engaged in research activities, and faculty is of opinion giving priority to research is the best way for promotion (Zohal and Yazdani, 2011-2012). But, the world authentic universities facilitate faculty promotion if better instructive program evidences are realized. It is noteworthy, during promotion if there is shortage of

educational dimensional activities; it is compensable with research activities. Contrarily, lack of research activities is not compensable by educational activities. On the other hand, studies carried out by Rafiei at Arak (Rafiei, 2009), Korki *et al.,* in Hamadan (Koorki, 2007), Sereshti in Yasuj (Sereshti, 2007), Dadhkhan *et al.,* in Ardhebil (Dadkhan, 2008), Afshari and Hyderpor (Afshari, 2002), Hamilton (Hamilton, 1986), Hemsly Brown (Hemsley-Brown, 2005) revealed that complete preoccupation of faculty in treatment and educational activities as a main obstacle for research. At next stage shortage of facilities etc. are referred.

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Given, the results of above studies this question is raised, whether there is enough leisure time for faculty for effective research and educational activities, simultaneously? Our study results offered negative answer to this question, and it shows that faculty promotion of different groups has no any positive effect on student learning and thus not reflected in the results of basic science exams. More importantly, faculty promotion of some groups showed negative relationship with basic science exams at the level of $p<0.05$. That means that the research activities of faculty have a negative impact on the teaching activities as a result quality of education has declined in respective groups.

Over all this series of factors in the form of one process resulted in greater reduction in medical education in the country during last decade (Mishmast, 2012).

If the issue is viewed at from another perspective, It is sometimes claimed that research activities promote education quality (Gray, 1996), although some of these theories are contradicted and believe that research is unable to support training in general but research can be applied to improve practical education. Because research and teaching purposes are different and require different skills (Jenkins, 2004). Rugarcia (Rugarcia, 1991) and Felder (Felder, 1994) believed that the main objective of the research is to expand knowledge and the purpose of education is to enhance students' abilities. The value of researcher is related to something - discovers and solves problems but the Teacher's value is to increase the skills and abilities of students to explore phenomena. Although it is possible to have both skills, but because each has a full time job and a chance for a second job does not remain, so it is less likely to succeed in both. It is no wonder that there is no significant relationship between research and education, and various studies confirm this theory, Feldman (Feldman, 1987) in 42 studies conducted states there is very low probability that research findings can be used in education .In other studies, Marsh and Hattie (Marsh, 2002; Hattie, 1996) and Jenkins (Jenkins, 2004) have expressed the correlation co-efficiency between research and education is zero, and even, Astin study (Astin, 1994) conducted in the United States has stated a significant negative correlation between research and educational outcomes. Although Pocklinton

and Tupper (Pocklinton, 2002) believe that researchers bringing research results to classroom to improve teaching grade, but Colbeck (1998) believes that the research results can hardly be brought to the classroom, especially in the natural sciences.

Conclusion

Based on these results it seems existing criteria of faculty research activities have no positive influence on students' education. You can even say that faculty promotion also has negative impact on results of some subjects. This can be due to various causes.

One of the reasons being highlighted is non-educational factor of faculty promotion. Since at present, research plays main role in faculty promotion. Faculties look for promotion and as a result they are forced to engage fully in research activities, and they have no time and chance to concentrate on education field. In summary we can say that these findings suggest that research and education at present are not aligned, but they are moving in two different directions. Therefore, it is necessary that educational system and management of universities change the process of faculty promotion.

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Ministry of Health, Treatment and Medical Education Department of Education, Medical Basic Science Comprehensive Examination From 2001-2010

Table 1: ?????

Exam	Subject	Student	Questions	Average	Standard	Classification	Rating	University	Lecturers			Average of lecturer
									1	2	3	
Sep2010	A	9	12	4.67	-0.43	1	22	40	4	4	3	3.66
Mar20 09	A	56	12	6.63	0.15	4	9	16	3	4	3	3.33
Sep20 09	A	4	12	5.25	-0.24	2	16	37	3	4	3	3.33
Mar 2008	A	59	12	5.86	-0.13	2	13	16	3	4	3	3.33
Sep2008	A	4	12	8.25	0.98	5	1	34	3	4	3	3.33
Mar 2007	A	40	12	5.10	-0.05	3	13	26	3	3	3	3.00
Sep20 07	A	12	12	4.92	-0.23	2	21	37	3	3	3	3.00
Mar 2006	A	37	12	6.14	0.3	4	5	29	3	3	3	3.00
Sep 2006	A	6	12	7.00	0.84	5	1	33	2	3	3	2.33
Ma 2005	A	32	12	8.31	0.16	4	6	28	2	3	3	2.33
Sep 2005	A	13	12	6.54	0.03	3	9	35	2	3	3	2.33
Mar 2004	A	37	12	7.41	-0.02	3	13	28	2	3	3	2.33
Sep2004	A	7	12	4.86	-0.61	1	27	33	2	2	2	2.00
Mar 2003	A	41	12	7.63	-0.22	2	18	29	2	2	2	2.00
Sep2003	A	16	12	8.00	-0.02	3	17	34	2	2	2	2.00
Mar 2002	A	54	12	7.15	-0.07	3	10	17	2	2	2	2.00
Sep2002	A	18	12	7.17	0.49	5	4	36	2	2	2	2.00
Mar20 01	A	57	12	9.30	0.38	5	1	19	2	2	2	2.00

Table 2: Mean ranking of faculty member promotion of different groups during last decade (2001-2010)

	Sep 2010	**Mar 2009**	**Sep 2009**	**Mar 2008**	**Sep 2008**	**Mar 2008**	**Sep 2007**	**Mar 2007**	**Sep 2006**	**Mar 2006**	**Sep 2005**	**Mar 2005**	**Sep 2004**	**Mar 2004**	**Sep 2003**	**Mar 2003 03**	**Sep 2002**	**Mar 2002**	**Sep 2001**
Pathology	2	2	2	2	2	2	2.33	2.33	2.33	2	2	2	2	2	2	2	2	2	2
Anatomy	3	3	3	3	2.66	2.66	2	2	2	2	2	2	2	2	2	2	2	2	2
Parasitology	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Immunology	3	3	3	3	3	2	3	3	2.33	2.33	2.33	2.33	2	2	2	2	2	2	2
Histology	3.66	3.33	3.33	3.33	3.33	3	2	2	2	2	2	2	2	2	2	2	2	2	2
Bacteriology	2.5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
public Health	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2	2	2	2	2	2	2	2	2	2	2	2
Biochemisty	3	2.33	2.33	2.33	2.33	2.33	2	2	2	2	2	2	2	2	2	2	2	2	2
Nutrition	3	3	3	3	3	2	3	3	2	2	2	2	2	2	2	2	2	2	2
Embryology	4	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2
Entomology	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Psychology	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
English	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Genetics	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Biophysics	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Physiology	2.66	2.66	2.66	2.66	2.66	2.66	2	2	2	2	2	2	2	2	2	2	2	2	2
Mycology	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Virology	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Table 3: The relationship between faculty promotion degree with the different factors such as average, standard score, classification and rank ranking

Subject	Average	P-value	Standard	P-value	classification	P-value	Rating	P-value
Biochemistry	-.702	.001	-.473	.041	-.519	.023	.193	.429
Biophysics	.230	.340	-.250	.290	-.280	.230	.027	.912
Psychology	-.470	.042	-.112	.640	-.061	.830	-.142	.561
Nutrition	-.037	.884	-.106	.670	-.102	.688	.008	.449
Mycology	-.425	.070	-.491	.033	-.536	.018	.498	.030
Parasitology	-.393	.096	-.735	.001	-.613	.005	.579	.009
Embryology	-.176	.472	-.328	.170	-.342	.152	.348	.144
Pub. Health	-.376	.112	.030	.900	.047	.848	-.200	.412
Pathology	-.126	.607	-.182	.457	-.156	.525	.058	.813
Bacteriology	-.420	.740	-.534	.019	-.510	.026	.380	.109
Immunology	-.124	.612	-.217	.373	-.312	.133	.093	.700
English	.012	.961	-.299	.213	-.323	.177	.185	.449
Anatomy	.416	.076	-.181	.458	-.009	.970	-.266	.271
Physiology	-.401	.088	-.283	.240	-.247	.308	.255	.293
Genetics	-.238	.325	-.016	.950	-.111	.651	.062	.800
Histology	-.617	.005	-.155	.526	-.342	.152	.189	.438
Entomology	-.061	.804	.033	.890	-.870	.724	.193	.429
Virology	.519	.023	.123	.617	.140	.568	-.069	.779

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