ORIGINAL RESEARCH

Medical School Factors and the Consideration of Family and Community Medicine as a Future Specialty by Third to Fifth Year Medical Students During Academic Year 2015-2016*

Katrina Lenora Villarante, MD

Background: Compared to other specialties, a lower number of medical students contemplate later choosing Family and Community Medicine. At the UP College of Medicine, only a small fraction of graduates pursue residency training in the specialty. A multitude of factors have been shown to have influenced the medical students of specialty considerations.
Objective: To determine whether the Family and Community Medicine curriculum and medical school factors influence third to fifth year students of UP College of Medicine to consider Family and Community Medicine as a future specialty.
Methodology: UP College of Medicine third to fifth year students during Academic Year 2015-2016 rotating in the Department of Family and Community Medicine from January to June 2016 were asked to participate. A descriptive study design was used. Consideration of Family and Community Medicine was compared from pre- to post- rotation and factors associated with inclination towards residency training in the specialty were examined post-rotation through a questionnaire.
Results: Of the medical students who planned to pursue residency training, 8% had Family and Community Medicine in the top three choices for residency training at the start of the rotation, which increased to 15% at the end of the rotation. Family and Community Medicine as a future specialty was "considered a little" by the three year levels at the start and end of the rotation. Many factors were deemed by the medical students to have no effect on considering the specialty. Some factors were considered to have a strong positive influence on choosing Family and Community Medicine, especially for medical clerks. A few factors were perceived to have a negative influence in considering the specialty.
Conclusion: Curriculum and medical school factors have an influence on the consideration of Family and Community Medicine as a future specialty

Key words: Family practice/education; education, medical, undergraduate; internship and residency

Introduction

Only a small fraction of UP College of Medicine (UPCM) graduates pursue residency training in Family and Community Medicine. However, evidence show that a health care system with a strong primary care presence would result in better health outcomes and lower costs than in one that is specialist-centered.[1] Thus, there is good reason to make sure that there is a sufficient number of medical students who consider training in Family and Community Medicine, being the foremost specialty in primary care.

* From the Department of Family and Community Medicine, Philippine General Hospital, University of the Philippines Manila

Many studies have tried to identify which factors influence medical students and graduates to pursue or not to pursue Family Medicine.[2,3] More researches consider the influence of factors such as demographic characteristics (age, gender, and urban/rural background), personality traits, and personal preferences in terms of lifestyle, practice, and income, compared to the amount of research on factors that relate to the medical school curriculum and setting.[4-11]

The findings from these studies may not be generalizable to the UPCM and Philippine General Hospital (PGH) setting due to differences in curricula and environment from one medical school to another. It was relevant to investigate whether the Family and Community Medicine curriculum of UPCM and the structural factors present in the UPCM and PGH setting are favorable for medical students to consider Family and Community Medicine as a future specialty.

The present curriculum of the UP College of Medicine includes Family and Community Medicine in all year levels, with clinical rotations in the third to fifth year levels. Rotations last a month for the third year and for medical clerkship, and two months for medical internship.

At the time of the research, third year medical students spent two weeks in the Family Medicine Clinic in the PGH Outpatient Department and in Canossa Health and Social Center, a local center run by the Canossian Sisters in the community of Tondo, Manila.[12] Another two weeks were spent in Community Medicine in Fabella Health Center, a public local health center in San Andres Bukid, Manila.[13] Fourth year students or medical clerks spent two weeks in Family Medicine with the Section of Supportive, Hospice and Palliative Care and weekend duties at the Ambulatory Care Clinic. Two weeks of Community Medicine were spent in the local health center in San Andres Bukid, Manila and in Council for Health and Development, a non-government organization.[14] Fifth year medical students or interns spent two weeks in Family Medicine, at the Ambulatory Care and Family Medicine Clinics and six weeks in the community-based health program in one of five partner municipalities of Cavite.[15,16]

The objective of this research was to determine whether medical school curriculum and structural factors influence third to fifth year students of the UP College of Medicine to consider Family and Community Medicine as a future specialty.

Methods

A descriptive study design was used. Consideration of Family and Community Medicine was compared from pre- to post-rotation and factors associated with inclination towards residency training in the specialty were examined post-rotation.

Study population included third to fifth year medical students enrolled at the UP College of Medicine during Academic Year 2015-2016 from January to June 2016. Exclusion criteria were 1) students who did not give consent, 2) students who were unable to complete 80% of the rotation, 3) postgraduate interns of Philippine General Hospital who were not graduates of UPCM, and 4) students who had begun or ended the rotation prior to the start of the research.

Pretesting of the questionnaire was done among eight medical clerks and five medical interns, to evaluate clarity of wording of the instructions and content of survey tools. Revisions were made to the questionnaire based on the results of the pretest.

Career plans after medical school, residency training being considered, and the extent to which Family and Community Medicine was being contemplated as a future specialty were asked in the first questionnaire. The second questionnaire had these same items and a set of questions that sought the extent that the listed factors contribute to the consideration of Family and Community Medicine as a potential specialty. Medical school curriculum factors and structural factors were based on influences identified in the literature but also took into account additional factors present in the University of the Philippines College of Medicine program and curriculum.[2-4,7,9-11,17] The first questionnaire was administered to the medical students at

the start of the rotation in Family and Community Medicine while the second questionnaire was administered at the end of the rotation.

Descriptive statistics was used. Frequencies, proportions, and modes were obtained. Encoding of data was done using Microsoft Excel. Analysis of data was done using SPSS. The research was submitted for ethics review and was approved by the UP Manila Research Ethics Board (UPMREB).

Results

A total of 187 medical students answered the questionnaires during the rotation in Family and Community Medicine (79 third year medical students, 64 medical clerks, and 44 medical interns). Pretest data from two third year students were not included due to incomplete answers. One medical clerk and three medical interns were unable to take both the pretest and posttest, and one medical intern answered the pretest at the start of the intern's Family Medicine rotation after already completing six weeks of Community Medicine rotation. Three postgraduate interns had answered the pretest questionnaire. Responses from a total of 177 students (77 third year medical students, 63 LU medical clerks, and 37 LU medical interns) were included in the analysis.

Almost all medical students planned to pursue residency training. Eight percent of these medical students had Family and Community Medicine in the top three choices at the start of the rotation, which increased to 15% at the end of the rotation. Medical clerks had the most increase from 5% to 18%. In general, most of the medical students were considering Family and Community Medicine at least a little.

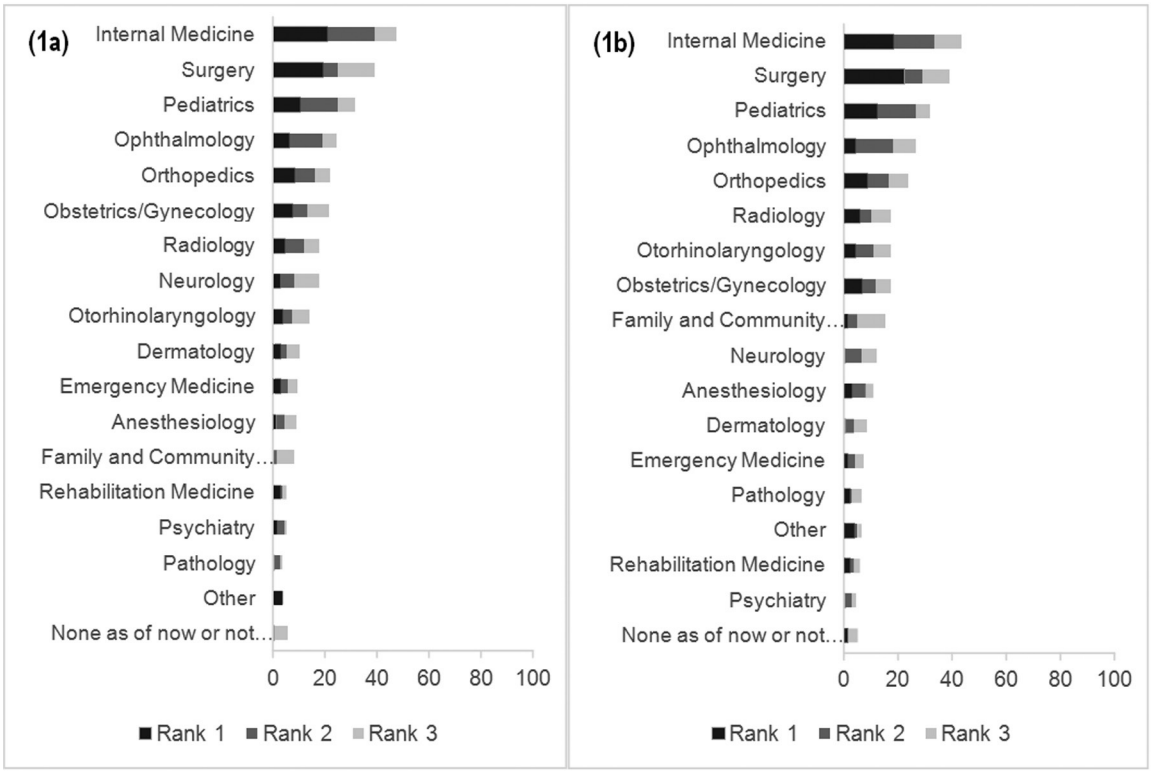

Figure 1. Inclusion of specialties in the top 3 considerations (in percent) of 3rd- 5th year medical students at the start (1a) and end (1b) of the rotation (n = 177)

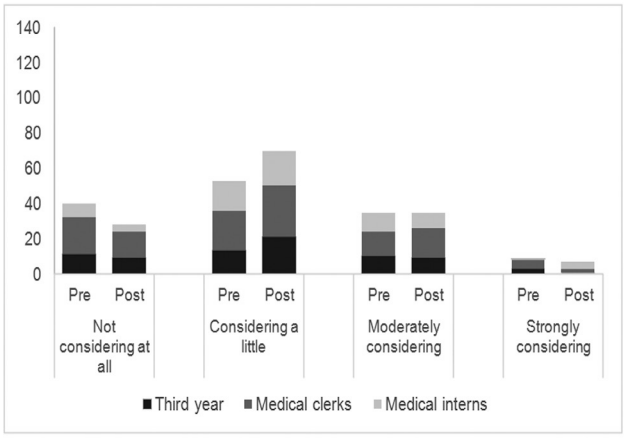

Figure 2. Consideration of family and community medicine as a future specialty by 3rd-5th year medical students (n = 177).

Influence of Factors on Third to Fifth Year Medical Students

Of the factors that were included in the questionnaire, nine were perceived by the medical students to have a positive impact on considering Family and Community Medicine as a future specialty. Fourteen factors were viewed to have no influence on specialty consideration across the three year levels.

The factors perceived by medical students to have a positive influence were: 1) the UP College of Medicine mission vision, 2) positive Family Medicine 3) Community Medicine consultant role models, 4) encouragement from other consultants to pursue a career

Table 1. Medical school factors with positive or negative influence on considering family and community medicine residency training.

Factors	Third year medical students	Medical clerks	Medical interns
Duration of Rotation			
Duration of rotation in Community Medicine	Neutral	+	+
Area of Rotation			
Spending part of the rotation in a local health center	N/A	+	N/A
Spending part of the rotation in a rural community	N/A	N/A	+
Spending part of the rotation in the PGH OPD Family Medicine Clinic	+	N/A	Neutral
Spending part of the rotation in the Family Health Unit	+	Neutral	N/A
Spending part of the rotation in a community-based NGO-run health center	+	N/A	N/A
Number of Interactions with Faculty and Residents			
Number of interaction with faculty during Family Medicine rotation	+	Neutral	+/Neutral
Number of interaction with residents during Community Medicine rotation	Neutral	+	+
Department Conferences			
Recruitment by department faculty and residents	Neutral	Neutral	+
UP College of Medicine setting			
Mission vision of UP College of Medicine		+	
Specialty characteristics seen during the exposure			
Acceptable hours of practice		+	
Ability to yield adequate income	Neutral, -	Neutral	
Focus mostly on non-urgent care	+, Neutral	Neutral	+
Focus on care of patients in the community setting	+	++, Neutral	+

Factors	Third year medical students	Medical clerks	Medical interns
Ability to practice in-hospital medicine	+	Neutral	+
Focus on health promotion		+	
Opportunity to work with the underserved population	+	++, +	+
Variety of patients and problems seen	Neutral	Neutral	+
Continuity of care		+	
Doctor-patient relationship		+	
Role models			
At least one Family Medicine consultant identified as a positive role model		+	
At least one Community Medicine consultant identified as a positive role model	+	++	+
At least one resident identified as a positive role model	Neutral	+	+
Mentoring			
UPCM assigned mentor who is a member of the Department of Family and Community Medicine	Neutral	Neutral	+,Neutral
Encouragement about primary care			
Other consultants who encouraged to pursue a career in primary care		+	
Negative comments			
About Family Medicine as a specialty from consultants	-	Neutral	Neutral, -
About Family Medicine as a specialty from residents	Neutral, -	Neutral	-
About Family Medicine as a specialty from medical students	Neutral	Neutral	Neutral, -
About family physicians from consultants	-	Neutral	Neutral
About family physicians from residents	-	Neutral	Neutral
About family physicians from medical students	Neutral	Neutral	Neutral, -

in primary care, and five specialty characteristics seen by the students during rotation exposure: 5) acceptable hours of practice, 6) focus on health promotion, 7) opportunity to work with underserved population, 8) continuity of care, and 9) doctor-patient relationship in the specialty.

Influence of Factors on Third Year Medical Students

Six additional factors were identified to have a positive effect on third year medical students. All areas of rotations for Family and Community Medicine for the third year level of medicine were perceived to have a positive influence on considering the specialty. Other factors with a positive influence on considering Family and Community Medicine were the number of interactions with faculty during the Family Medicine rotation and the following specialty characteristics seen during rotation exposure: focus on care of patients in the community setting and the ability to practice in-hospital medicine. The response for the focus of the specialty mostly on non-urgent care was divided between having a positive and having a neutral influence.

While half of the factors were considered to have no effect on the consideration of Family and Community Medicine by third year students, the factors that were felt to have a negative impact on third year medical students were negative comments about 1) Family Medicine as a specialty from consultants and 2) about family physicians from consultants and 3) from residents. Bimodal responses were elicited for the effect of negative comments about Family Medicine as a specialty from residents and also for the ability of the specialty to yield adequate income (negative influence and neutral).

Influence of Factors on Medical Clerks

Three more factors were perceived to have a positive influence on the consideration of the specialty by medical clerks. These include 1) the duration of rotation in Community Medicine, 2) the number of interactions with residents of the department during the Community Medicine rotation and 3) identifying at least one resident as a positive role model. Identifying a Community Medicine consultant as a positive role model was considered by medical clerks to more strongly influence future consideration of the specialty, compared to the other year levels. Being able to observe 1) the focus of the specialty on care of patients in the community setting and 2) the opportunity to work with the underserved population were deemed to both have strong positive influence, although the factors were bimodal.

A total of 31 factors were perceived to have no influence on the consideration of the specialty by medical clerks. None of the factors were identified as a negative influence on how medical clerks regard Family and Community Medicine as a potential specialty.

Influence of Factors on Medical Interns

Medical interns identified nine other factors to have a positive impact on the extent that the specialty was being considered for the future. The duration of rotation in Community Medicine, spending part of the rotation in a rural community and the number of interactions with residents during the Community Medicine rotation were among the factors considered positively by the medical interns. Identifying at least one resident as a positive role model and recruitment by department faculty and residents were also perceived to have a positive effect. Being able to observe these four specialty characteristics rendered a positive influence for medical interns: focus mostly on non- urgent care and on care of patients in the community setting, the ability to practice in- hospital medicine and the variety of patients and problems seen.

In total, 19 factors were perceived as having a neutral influence on the consideration of Family and Community Medicine as a future specialty by medical interns. Factors considered by medical interns to have a negative influence were also those that pertained to hearing negative comments about family medicine as a specialty from residents. Negative comments from consultants and students and about family physicians from fellow students were bimodal (negative influence and neutral).

Discussion

Family and Community Medicine as possible residency training increased after rotations in the department; however, it remained the lowest among the primary care specialties. Regardless of favored specialty, Family and Community Medicine was considered at least a little by the three year levels.

Many factors were regarded by the medical students to have no effect on considering the specialty. Some were considered to have a positive influence on choosing Family and Community Medicine, especially for medical clerks. A few were perceived to have a negative impact in considering the specialty.

Inclination of the medical students in the study fell in the lower range compared to the ones cited in the literature. Preference for Family Medicine had been found to range from less than 1% to 78% among medical students, depending on the year level and the position of the specialty in the country where the study was done.[7,18] However, compared to previous data from medical interns in six local hospitals where Family Medicine was identified as the future specialty choice by 7.4%, third to fifth year medical students of the UPCM have a slightly higher percentage interested in Family and Community Medicine.[19]

Other studies reveal different trends in the rates of inclination of medical students towards Family and Community Medicine—increasing, decreasing at certain year levels but later increasing, or decreasing entirely.[6,8,10,18,21] The preference for Family and Community Medicine by medical students of UPCM revealed a lower

percentage of medical clerks at the start of the rotation inclined towards the specialty compared to the other year levels. Yet, the experience of medical clerks in Family and Community Medicine can be said to have a more positive impact on inclination towards the specialty compared to the two other year levels surveyed based on the overall increase from the start to the end of the rotation. The three factors identified to have strong positive influence on the consideration of the specialty—being able to observe the specialty characteristics of focus on care of patients in the community setting and the specialty as an opportunity to work with the underserved population, and identifying at least one Community Medicine consultant as a positive role model—were also in that year level. However, while it was among medical clerks that there were the most number of students moderately considering the specialty, it was also among medical clerks that there were the most number of students not considering the specialty at all.

Results of this study confirm what the literature has found—that community- based primary care and rural exposure have a positive impact on medical students' inclination towards Family and Community Medicine.[3] Students being able to observe specialty characteristics during the rotation experience were also rated positively overall. Being able to understand the nature of the specialty through medical students' exposure have been found to be a contributing factor in considering Family Medicine.[2,4,5,22]

Notably, factors may have varying effects on students from different year levels. For instance, rotations in the outpatient Family Medicine clinic and Family Health Unit were viewed as increasing the positive perception of third year students towards the specialty, but not for the other year levels with the same exposure. Similarly, the duration of exposure in Community Medicine for medical clerks and interns had the same positive effect which was not reported by third year medical students. Duration of exposure had been found in literature to positively influence the consideration of medical students of a primary care specialty or Family Medicine specifically.[3,20] While medical interns have a longer rotation in Community Medicine, the third year medical students and medical clerks have a similar length of exposure. The disparities may be attributable to differences between rotation content in these areas among year levels.

Family and Community Medicine consultants who were positive role models and other consultants who encouraged the pursuit of a career in primary care were viewed by the three year levels to improve medical students' consideration of the specialty. This was similar to what studies on the effect of positive role models on specialty choice showed.[2, 3, 21-25]

Factors specific to UP College of Medicine were also considered and among these factors, only the mission vision of the College was perceived by medical students to have a positive influence. Literature suggest that a medical school's mission and vision affect specialty choice only indirectly.[20]

Many of the factors in the questionnaire were deemed by the UPCM students as not having a positive or negative effect on how medical students consider Family and Community Medicine as a specialty. These results were contrary to what other research in other settings had previously found.[2,3,20,22]

Negative comments about the specialty and about family physicians were the only factors perceived by students to decrease interest in the field in general. This corresponds to the results of many studies on the effect of negativity towards the specialty, through comments about how family physicians are not as smart as other specialists, how Family Medicine is not equal to other specialties or that it is a fallback, and the difficulty of mastering the specialty content.[2,3,11,21,26]

The journey that medical students take to choose a specialty is described in the literature. Medical students may already have a specialty chosen on medical school entry and either retain or change preference, or start undecided and explore specialty options during medical school.[9,22] Future specialty choice appears to be malleable, both positively and negatively by experiences during medical school. This research included only medical students enrolled during one Academic Year at UP College of Medicine and was limited to medical students undergoing rotations in Family and Community Medicine from January to June 2016. Only

consideration of Family and Community Medicine as a potential specialty was studied and not the actual future choice of residency training. Likewise, only the perception of medical students of the extent of influence of factors was measured and may have been affected by response bias. Only third to fifth year medical students were included, as the influence of clinical training is stronger than the influence of preclinical training, in the consideration of a future specialty.[2,20] The inclusion of Family and Community Medicine in the first and second year medicine curriculum and its influence on medical students in those year levels were not assessed. Factors aside from those related to the medical school curriculum and setting were not included in this research.

The committee for undergraduate training of the department would have to ensure that the positive factors which were identified are reinforced and continued. Likewise, factors that were deemed by students to have neither a positive or negative effect would have to be addressed. Measures need to be identified to circumvent the effect of negativity towards the specialty such as increasing visibility of positive role models.

Future studies that may be recommended would be to conduct a research following medical students from entering medical school until graduation or at least collecting data for one full academic year.

Conclusion

Curriculum and medical school factors have an influence on the consideration of Family and Community Medicine as a future specialty among medical students in the third to fifth year levels.

References

1. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q 2005; 83(3): 457–50.
2. Scott I, Wright B, Brenneis F, Brett-Maclean P, McCaffrey L. Why would I choose a career in family medicine? Reflections of medical students at 3 universities. Can Fam Physician 2007; 53(11): 1956-7.
3. Avery D, Wheat J, McKnight J, Leeper J. Factors associated with choosing family medicine as a career specialty: What can we use? Am J Clin Med 2009; 6(4): 54-8.
4. Clinite, KL, Reddy, ST, Kazantsev, SM, et al. Primary care, the road less traveled: What first-year medical students want in a specialty. Acad Med 2013; 88(10): 1522- 8.
5. Essuman A, Anthony-Krueger C, Ndanu TA. Perceptions of medical students about Family Medicine in Ghana. Ghana Med J 2013; 47 (4): 178-83.
6. Gowin E, Horst-Sikorska W, Michalak M, et al. The attractiveness of family medicine among Polish medical students. Eur J Gen Pract 2013; 20(2): 121-4.
7. Khader Y, Al-Zoubi D, Amarin, Z, et al. Factors affecting medical students in formulating their specialty preferences in Jordan. BMC Medical Education 2008; 8: 32.
8. Scott I, Gowans M, Wright B, Brenneis F, Banner S and Boone J. Determinants of choosing a career in family medicine. CMAJ 2011; 183(1): E1-8.
9. Bennett KL and Phillips JP. Finding, recruiting, and sustaining the future primary care physician workforce: A new theoretical model of specialty choice process. Acad Med 2010; 85(Suppl. 10): S81-8.
10. Zurro AM, Villa JJ, Hijar AM, et al. Medical student attitudes towards family medicine in Spain: A statewide analysis. BMC Fam Pract 2012; 13: 47.
11. Erikson CE, Danish S, Jones KC, Sandberg SF and Carle AC. The role of medical school culture in primary care career choice. Acad Med 2013; 88(12): 1919-26.
12. LU5 FCH 250.1 Instructional Design. Retrieved from Philippine General Hospital Department of Family and Community Medicine. (Unpublished).
13. LU5 FCH 250.2 Instructional Design. Retrieved from Philippine General Hospital Department of Family and Community Medicine. (Unpublished).
14. LU6 FCH 251 Instructional Design. Retrieved from Philippine General Hospital Department of Family and Community Medicine. (Unpublished).
15. LU7 FCH 260.1 Instructional Design. Retrieved from Philippine General Hospital Department of Family and Community Medicine. (Unpublished).
16. LU7 FCH 260.2 Instructional Design. Retrieved from Philippine General Hospital Department of Family and Community Medicine. (Unpublished).
17. Rabinowitz, HK, Diamond, JJ, Markham, FW, & Wortman, JR. Medical school programs to increase the rural physician supply: A systematic review and projected impact of widespread replication. Acad Med 2008; 83: 235-43.
18. Bethune C, Hansen PA, Deacon D, Hurley K, Kirby A and Godwin, M. Family medicine as a career option: How students' attitudes changed during medical school. Can Fam Physician 2007; 53(5): 880-5.
19. Rivera M. Career preferences of medical interns: Factors affecting choice of family medicine and rural practice. The Filipino Family Physician 1989; 36-43.

20. Senf JH, Campos-Outcalt D and Kutob R. Factors related to the choice of family medicine: A reassessment and literature review. J Am Board Fam Pract 2003; 16(6): 502-12.
21. Schafer S, Shore W, French L, Tovar J, Hughes S and Hearst N. Rejecting family practice: Why medical students switch to other specialties. Med Stud Educ 2000; 32(5): 320-5.
22. Jordan J, Brown JB and Russell G. Choosing family medicine. What influences medical students? Can Fam Physician 2003; 49: 1131-7.
23. Wright S, Wong A and Newill C. The impact of role models on students. J Gen Intern Med 1997; 12: 53-6.
24. Burack JH, Irby DM, Carline JD, Ambrozy DM, Ellsbury KE and Stritter FT. A study of medical students' specialty-choice pathways: Trying on possible selves. Acad Med 1997; 72(6): 534-41.
25. Saigal P, Takemura Y, Nishiue T, Fetters M. Factors considered by medical students when formulating their specialty preferences in Japan: Findings from a qualitative study. BMC Med Educ 2007; 7: 31.
26. Hunt DD, Scott C, Zhong S and Goldstein E. Frequency and effect of negative comments ("badmouthing") on medical students' career choices. Acad Med 1996; 71(6): 665-9.