MENTORING IN SURGERY: A CRITICAL APPRAISAL

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ABSTRACT

Mentoring is an important and valuable aspect of professional development in medicine, and forms a sound basis for professional advancement and career satisfaction. This vital aspect of surgical training seems to be lacking in many residency programmes. We thus briefly reviewed the concept of mentoring programmes; highlight the benefits and its limitations, and ways on minimizing the negative mentoring experience. Though mentee experience may be positive or negative, however the negative experience can be minimized through adherence to rule guiding selection of the dyad. Through mentorship, surgical trainees acquire the skills necessary to practice as surgeons and also to cope with various challenges associated with the surgical profession. We therefore advocate for introduction of a structured mentoring program.

KEYWORDS: ***Mentoring, Mentor, Protégé, Residency training, Surgical residents***

INTRODUCTION

Mentoring is an important aspect of professional development in medicine, and more especially in surgical training. Mentoring is defined as "a form of relationship where a more experienced senior member (mentor) of a profession, provides career-related and psychological support to a less experienced protégé (erroneously called mentee) for the purpose of career development." [1] this form of relationship between senior and junior professional colleagues has previously been shown to be beneficial in medical career and many other professions by guiding a junior member of the profession along a proper career trajectory path, and thus reduces career missteps.[2-4] Early mentoring relationship has also been shown to improve productivity and career satisfactions.[5] Mentoring programmes seem to be in a poor state in most developing nations and undocumented observations reveal there is complete lack of such

programmes in postgraduate surgical residency training in Nigeria, this findings are in contrast to what is obtainable in many developed nations such as, the United State of America, where many institutions presently run a structured mentoring program in which every trainee is assigned to a mentor who is a senior faculty member and expected to meet the trainee on a regular basis.[1] The benefits and advantages of this form of relationship seem to be untapped in surgical residency training in Nigeria and many sub regions in Africa. We thus briefly examined the concept of mentoring and its benefits.

HISTORICAL BACKGROUND

The term mentoring originated from the Greek language and simply means "enduring" while the term mentor was gotten from a Greek mythology which has it that, circa 12th century, (1194-1184 BC) before Odysseus set out on an epic journey to fight in Troy; he assigned his counselor, Mentor as the guardian for Telemachus his son. Mentor's responsibilities were to take care, educate, nurture and bring Telemachus up. Mentor eventually raised Telemachus successfully until he attained his rightful position in the world. This form of arrangement has since then been termed mentoring and the guardian eponymously called Mentor.

This form of arrangement was the initial unstructured way of training surgeons, where "surgeon to be" would work as an apprentice under an established trained surgeon (master/ "mentor") until he acquired enough surgical skills to the satisfaction of his master (mentor) and is later allowed to practice the art of surgery without supervision. A similar model of training was employed in England for over 400 years, where established trained surgeons taught surgical trainees until the trainees were deemed fit to write certification examination based on recommendations.[6]

Circa 1904, William Stewart Halsted, the father of modern surgery and the inventor of modern surgical residency training program, proposed and designed a structured and formal surgical residency training program that had curriculum based in Johns Hopkins Hospital, in the United State of America, which gradually evolved and replaced the unstructured master-apprentice model of "training surgeons." [2,5,7] In this model the trainees were to be trained in human anatomy, surgical skills and research under the supervision of trained surgeons and other teachers.[3]

The Halstedian apprenticeship model of training also recognized the role of mentoring in surgical training, whose mantra is "see one (as apprentice), do one (confirming the expertise), and teach one (as "master/mentor")." [4, 8] A mentor in modern day contemporary world is seen as a senior member of a profession who is more knowledgeable and expected to be trusted in counseling and guiding the younger members (protégé) of the profession, in order to facilitate the protégé's achievement, and ethical standards of the profession without career missteps or undue delay en-route to the peak of professional career. In medical profession, a mentor is expected to assist the protégé in clinical, education, social, and political networks by functioning as an adviser, networker, teacher and role model.[9]

MENTORSHIP

Mentorship, the state of being in a mentoring program, whether structured or unstructured is an important and valuable aspect of professional development in the medical career and forms a sound basis for professional advancement and career satisfaction of surgical resident trainees in academic and clinical surgery, and the medical profession at large. With effective mentorship and mentoring system a protégé is expected to acquire knowledge and unbiased interest in a chosen professional specialty as a mentor is not expected to forcefully coerce or influence protégé's choice of professional specialty**.** This characteristic of a good mentor, and fruitfulness of mentorship can be exemplified by William Halstead and his protégé, who's protégé (Harvey Cushing) established the specialty of neurosurgery; a specialty that differs from that of his mentor.[10] The process of acquiring such knowledge and other

professional ethics from the mentor must be hitch-free and barrier-free to aid smooth two ways communication flow between the mentor and the protégé. The mentor- protégé's relationship is not a passive relationship but it requires interest, hard work and cooperation between the mentor and the protégé as previous studies have shown that lack of interest and motivation, lack of skill and valuable knowledge by the mentor, poor contributions from both the mentor and protégé, and conflicts of goals are recognized potential factors associated with failed mentor- protégé's relationship. The benefits of mentoring program were further substantiated by some researchers who argue that success of individuals in a chosen profession whether technical, professional, or managerial field are often dependent on participation in a mentoring relationship.[11, 12] Surgical trainees; as medical students, residents, and even the qualified younger members of the faculties need mentors to learn from, due to the uniqueness of surgical environment and requirements at various stages of the profession. The positive experiences of mentoring has previously been shown through some studies, as an important factor that determine success and satisfaction in medical career,[14,15] and mentored trainees often tend to set higher life goal in their careers as compared to non-mentored trainees. In a similar wave, lack of mentoring for women has also been shown to delay women advancement at a rate commensurate with that of men, who were mentored by men in faculties as reported from some previous studies.[15, 17-19]

TYPES MENTORING PROGRAMMES

Structured mentoring programmes: These are a type of mentoring programmes whereby an institution or organization specifically assigns a junior member of similar profession (protégé) to a senior member (mentor) with progressive evaluation of the relationship.

Unstructured programmes: In these programmes, a protégé either chooses his mentor or a mentor chooses his protégé by natural design or by chance. This often occurs when a junior member of the profession exhibits some certain characteristics or attributes of interest to a senior member of a similar profession, or by virtue of socio cultural, religious or racio-ethnic factors.

PSEUDO-MENTORING

This is a form of relationship whereby mentees chose their mentors without the knowledge and awareness of their chosen mentors to perform such roles. This form of mentoring is prone to failure from the outset, because direct guidance and contributions from the chosen or perceived "mentor" is unlikely to occur. This form of mentor-protégé relationship would rather be termed by the authors as *pseudo-mentorship and such mentors are regarded as perceived mentors;* where the mentors are not aware of whom their protégés are. This factor was previously recognized as important reason for failed mentor-protégé relationship, as a result of failure of contributions from one or both end of the relationship**.** The mentor- protégé relationship requires a full and mutual understanding of existence of such relationship by both the mentor and protégé with full understanding of the roles. Such relationship must also be voluntary and not through coercion as this is bound to fail from outset.

BENEFITS OF MENTORING AND POSITIVE MENTORING EXPERIENCE

Surgical residency training without incorporation of mentoring program will not produce surgeons of highest quality as expected from Halsted system of residency training. Quoting William S. Halsted, such system with mentoring programmes should "produce not only surgeons, but surgeons of highest types, men who will stimulate the first youth of our country to study surgery and to devote their energies and their lives to raising the standard of surgical services."[23] To produce surgeons of such qualities, mentoring programme will be an indispensable and vital component of surgical residency training, as regular didactic teaching and epileptic forms of advice from senior members of the profession to the surgical residents, and junior members of the faculties will not replace proper mentorship relationship expected from a mentoring program.

The aim and goal of mentoring relationship is

dynamic and often a function of the need of the protégé and can change as the protégé moves up the echelon of his or her carrier. At the beginning of the relationship, the role of a mentor may sequentially involve identifying career and career goals, developing mode and manner of achieving the goal, guidance about the demand of the profession and research advice while in training. After the training the roles may change, and involve assisting the protégé in preparing and organization of résumé, curriculum vitae and assisting in gaining employment and possibly in gaining research grants.

Many studies have documented the benefits of mentoring to organization/ institution, protégé, and mentor. Organization/ institution benefits includes; improved integration and organization socialization, [24,25] reduction in turnover intentions, [26-28] improved dedication to organization, better job satisfaction; the benefits to the protégé include greater recognition, career satisfaction [28] and higher promotion rate. [29-32] Furthermore,' beside learning how to achieve career advancement strategies through avoidance of career missteps, the protégé will also learn some "hidden curriculum" of the profession, unwritten rules and techniques of the profession. Other protégé benefits include acquisition of necessary skill in; writing of research proposal and articles as well as sourcing for grants to carry out research, management and resolution of conflict, knowledge and how to deal with failure and hindrances, and negotiation skill among others. [33-35] The power of negotiation skill is very important in surgical residency training in developing countries as surgical trainees are often confronted with several difficulties in their day- to-day practices due to some peculiarities of work challenges encountered in these countries. Some of the authors also experienced such challenges while in training and are still experiencing it. Such negotiating skill include skills to get investigations done, retrieving blood from blood banks against all the odds and finding one's way through in the operating room among the staff when planning for surgery especially during off hours. The process of learning and acquiring such aforementioned skills are often in a friendly and risk free environment without the influence of work pressure and master-servant barriers. These benefits if at all will be gained by non-mentored trainees will be through trial and error approach and will take a longer time to realize.

The mentoring program also accord the mentor some benefits such as satisfaction with protégé's career developmental achievement,[36] it also affords the mentor to share and learn from the protégé , the relationship also drive the mentor to the trend of current research and professional techniques. Also, the ovation and recognition given to the protégé and the eventual rise to the top echelon of the professional career serves as a source of joy to the mentor. These are often expressed when a mentor pronounced such statement as "he's my boy I trained him". Also, recognition of roles of mentor has led some professional organization to allocate continuing professional development point (CPD) to mentors in recognition of their activities.[37]

DEMERIT OF MENTORING AND NEGATIVE MENTORING EXPERIENCE

From the socio-psychological point of view all relationships have positive and negative effects, [38-39] a view point that does not exclude mentor-protégé relationships. Though mentoring is associated with many benefits it's not completely devoid of negative effects and experiences such as abuse, jealousy, among other factors as identified by Levison et al and Kram.[1,40] Another dimension to previously highlighted negative experiences was the belief of some residents in our study that mentoring would rather have more negative effects on their professional advancement and thus believed that the risks of mentoring outweighs its benefits and preferred not to have a mentor. The main reason for such negative view of such residents towards mentoring is the fear that they may be victimized if conflicts should exist between their mentor and other senior members of the faculties who may be involved in their professional advancement.

Factors responsible for negative mentoring experiences may be related to protégé or mentor behavior or both. The common causes of negative mentoring relationship from protégé perspectives include mentor's unavailability, exploitation, and too much demand from mentor with subsequent feeling of inability to meet the mentor's demand and negative personalities and behavior of the protégé.

Similarly, protégé underperformance, interpersonal problems and destructive relational patterns were previously recognized factors from mentor's perspectives as causes of dysfunctional mentoring relationship. Negative mentoring experience was classified into five broad groups or metathemes, which are poor match within the dyad, distancing behavior, manipulative behavior, lack of mentor expertise and general dysfuctionality. According to study the most common reported metatheme was poor match within the dyad, which is due to wrong fit in the mentor-protégé dyad. And this often is caused by differences in values, work-styles and personalities. Distancing behavior is due to lack of interest in protégé career. Such behaviors manifest in form of neglect (lack of feedback), self-absorption (preoccupation with one's career progress and promotion only through self serving action). Manipulative metatheme was further divided into two themes. The first was described as position power, which is a form of tyranny with power intoxication and unbalanced delegation of works inform of under- or overwork or unwarranted works. The second theme, involves playing politics, wrong uses of position of authorities such as taking credit for protégé's accomplishments, destructive act against protégé and lying against protégé. Lack of mentor expertise was further divided into two groups: technical incompetency (alien to latest research methods and conventions) and interpersonal incompetency (poor act of communication skill). The fifth theme known as general dysfuctionality include mentor personal mal-behavior such as alcohol consumption resulting in intoxication and improper behavior or mentor's family conflicts and mentors with wrong or poor attitude towards their job. All the five metathemes have tendency individually or in combination to lead to negative mentoring experiences. The negative mentoring relationship must be recognized early; as such experiences can lead to psychological disturbance, decrease job satisfaction and complete loss of interest in such relationship in future. This dysfunctional mentoring relationship often occur when the need are not met or one or both partners are being stressed. It must be noted that the negative mentoring experiences as described by Eby et al is a continuum. And the continuum indicates a spectrum of relational conflicts from mild, as in poor match within the dyad and general dysfuctionality (where the mentor is not intentionally evil), to more dangerous and severe forms as seen in distancing and manipulative themes, where mentor's negative behavior is dangerous and intentional.[42] When the benefits of mentoring relationship becomes questionable or equivocal it is important to critically view negative mentoring experience as a continuum, rather than as a distinctive entity. It is important to evaluate the roles played by each negative experience and to be weighed against the positive experiences as the negative mentoring experiences do not necessarily mean absence of positive experiences. Notably, both can be exhibited by the same mentor (e.g., when a mentor provides good support but lacks interpersonal competency). However if the relationship need to be terminated when the negative effects and its impact outweighs the benefits it should be respectfully brought to an end to avoid the disastrous and negative effects of such failed relationship on both protégé and mentor.

The negative experiences of mentor-protégé relationship can be reduced through careful selection and choice of mentor in mentoring relationship. For successful mentor-protégé relationship, the protégé must consider certain qualities and attributes of the proposed mentor when choosing a mentor such as; mentor's depth of knowledge as it is expected that a mentor should have a higher depth of knowledge than the protégé, willingness from the proposed mentor to accept such position without force or coercion from external source. This factor becomes more important in a structured type of mentoring system when protégé are assigned to a specific senior member of the faculties with or without their knowledge.

MINIMIZING NEGATIVE MENTORING EXPERIENCE

In order to improve the mentorship experience John Rombeau, MD, an emeritus professor of surgery at Perelman School of Medicine, University of Pennsylvania, Philadelphia and a staff

surgeon at U.S Department of Veterans Affairs, Palo Alto Health care system, CA, at the 2014 American College of surgeons (ACS) leadership and advocacy submit in Washington, DC proposed four new approaches in surgical mentoring for the millennial generation. First, the concept of reverse academic pyramid; in this approach the most senior surgeon will be assigned to mentor the junior ones who are just beginning their surgical training. This approach will afford the mentor to have more time for protégé as such cadre of surgeon are near to retirement, having ample amount of time, wealth of experience and are often shouldered with lesser clinical responsibilities than younger surgeons. This will also allow younger surgeons to focus on their career advancement and clinical works. The second is mosaic mentoring. This approach emphasis that a mentor may need to play different roles such as clinical specialist mentor, research mentor and so on based on the need of the protégé, and also a protégé may need to have more than one mentors at different phases of training based on the dictate and the need of the trainee along the career path.[43] This will allow a trainee to choose a mentor who will be suitable for particular aspect of training and thus reduce the attention that is required from the mentor.[44] This will also minimize the negative experience that may results from technical incompetence as a single mentor may not be technically competent in all areas of surgical career. The third approach is the use of simulation lab where mentor and protégé interact to learn surgical skill and develop relationship with the mentor in a stress and risk free environment without fear and pressure of operating suite. The final approach is the scrub sink and OR mentoring styles. This occurs when surgeon poses questions to trainee with intent to teach and encourage the trainee.

Mentoring plays a major role in surgical training. However, this important aspect of training seems to be less prominent in surgical residency training in Nigeria, progressive loss of this vital aspect of training was also noted by Rohrich who expressed his fear in one of his commentary on mentoring in medicine and plastic surgery [45] a fear shared by many other surgeons and the authors of this article.

CONCLUSION

Mentoring is an important aspect of professional and career development that help in early realization of goal with minimal career missteps. We suggest that there is a need to incooporate this important component into our surgical residency training through formal and informal mentoring system in collaboration with postgraduate colleges. The senior member of the faculties should take the lead for effective and rewarding mentorship in our training programs.

CONFLICT OF INTERESTS

The authors declared no conflicts of interest

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Not needed

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REFRENCES

1. Kram KE. Mentoring at work Developmental relationships in organizational life. Glenview, IL Scott Foresman. 1985. Accessed www.scirp.org 8th May 2019.
2. Bell RH, Banker MB and Rhodes RS. Graduate Medical Education in Surgery in the United States. *Surg Clin North Am*. 2007; **87**:811-823.
3. Kotsis SV and Chung KC. Application of the “see one, do one, teach one” concept in surgical training. *Plast Reconstr Surg*. 2013; **131**(5):1194-1201.
4. Eengels PT and de Gara C. Learning styles of medical students, general surgery residents, and

general surgeons: implication for surgical education. *BMC Med Educ*. 2010;**10**:51

5. Leichtle SW, Kaoutzanis C, and Mouawad NJ. The five year general surgery residency: reform or revolution. *Bull Am Coll Surg*. 2014; **99**:49-52.
6. The Training of the Surgeon. *Br Med J*.1936; **1**:268.
7. Palavarupu HV, Rulaylat AV, Sun S and Hamed OH. 100 years of surgical education. The past, present and future. Bull *Am Coll Surg*. 2013; **98**:22-27.
8. Pugh CM, Watson A, Bell RH Jr, Brasel KJ, Jackson GP, Weber SM et al. Surgical education in the internet era. *J Surg Res*. 2009;**156**(2):177-82.
9. Morton-Cooper A and Palmer A. Mentoring and Preceptorship: A Guide to Support Roles in Clinical Practice, Boston. *Blackwell Scientific*, 56-58, 1993.
10. Assael LA. Every surgeon needs mentor: a Halsteadian/Socratic model in the modern age. J Oral *Maxillofac Surg*. 2010;**68**(6):1217-1218.
11. Kreitner R. Management, a problem-solving process. Boston: *Houghton Mifflin*,1980.
12. Meyer DW and Humphreys NJ. The caveats in mentorship. *Business Horizons*. 1985; **28**, 9-14.
13. Rombeau JL, Goldberg A and Loveland-Jones C. Surgical Mentoring: Building Tomorrow's Leaders. New York*: Springer*; 2010.
14. Budderberg-Fischer B, Stamm M, Budderberg C and Klaghofer R. Career-Success Scale- A new instrument to assess young physician's academic career steps. *BMC Health Serv Res*. 2008; **8**:120.
15. Ramanan R, Philip R, Davis R, Silen W and Reede J. Mentoring in medicine: key to satisfaction. *Am J Med*. 2002;**112** :336-341.
16. Bikel J. Women in medical education: A status report. *N Engl J Med* 1988; **319**:1579-1584.
17. American College of Physicians. Promotion and tenure of women and minorities on medical school faculties. *Annal of Internal Med*. 1991; **114**:63-68.
18. Fried LP, Francomano CA, MacDonald SM, Wagner EM, Stokes EJ, Carbone KM, Bias WB and Stobo JD. Career development for women in academic medicine; multiple interventions in a department of medicine. *JAMA*. 1996; **276**; 989-905.
19. Levinson W, Kaufmann K, Clark B, Tolles S. Mentor and role models for women in academic medicine. *West Journal Med* 1991; **154** :423-426.
20. Bruce Mary and Bridgeland John. The Mentoring Effect: Young people's Perspectives on the Outcomes and Availability of Mentoring. Washington, D.C.: Civic Enterprises with Hart Research Associates for MENTOR: The 2014. Pg 4. www.civiccenterprises.net/Education accessed 8th May 2019
21. McCord JH, McDonald R, Leverson G, et al. Motivating to pursue surgical subspecialty training: is there a gender difference? *J Am Coll Surg*. 2007; **205:**698-703.
22. Francesca Monn M, Wang MH, Gilson MM, Chen B, Kerm D and Gearhart SL National Mentoring Partnership. ACGME core competency training, mentorship, and research in surgical subspecialty fellowship programs. *J Surg Educ*. 2013; **70:** 180-188.
23. Ker B and O' Leary JP. The training of the Surgeon: Dr. Halsted's greatest legacy. *Am J Surg* 1999;**65**:1101-1102.
24. Ostroff C. and Kozlowski SW. The role of mentoring in the information gathering processes of newcomers during organizational socialization. *Journal of Vocational Behavior* 1993;**42**:170-183.

25. Chao GT. Mentoring phases and outcomes. *Journal of Vocational Behavior* 1997;**51**:15-28.
26. Allen TD, Eby LT, Poteet ML, Lentz E and Lima L. Career benefits associated with mentoring for protégés: A meta-analysis. *Journal of Applied Psychology*, 2004;**89**:127-136.
27. Myers DW and Humphreys NJ. The caveats in mentorship. *Business Horizons* 1985; **28**: 9-14.
28. Viator RE and Scandura TA. A study of mentor-protégé relationships in large public accounting firms. *Accounting Horizons* 1991; **5**:20-30.
29. Fagenson EA. The mentor advantage: Perceived career/job experiences of protégés versus non-protégés. *Journal of Organizational Behavior* 1993; **10:309**-320.
30. Whitely WT and Coetsier P. The relationship of career mentoring to early career outcomes. *Organizational Studies*.1993; **14:**419-441.
31. Dreher GF and Ash RA. A comparative study of mentoring among men and women in managerial, professional, and technical positions. *Journal of Applied Psychology* 1990; **75**:539-546.
32. Scandura T A. Mentorship and career mobility: An empirical investigation. *Journal of Organizational Behavior* 1992;**13**:169-174.
33. Barondess JA. On mentoring. *J Roy Soc Med* 1997; **90**:347-349.
34. Lingam S and Gupta R. Mentoring for overseas doctors (Career Focus). *BMJ* 1998;**317**:S2-7151
35. Pololi LH, Knight SM, Dennis K and Frankel RM. Helping medical school faculty realize their dreams: an innovative collaborative mentoring program. *Acad Med* 2002; **77**:377-384.
36. Setness PA. Mentoring. *Postgrad Med* 1996 ; **100**:15-22.
37. BMA (British Medical Association, Board of Medical Education), Exploring mentoring. 2004. https://scottishmentoringnetwork.co.uk/assets/downloads/resources/BMAexploringmentoringinhealthstudentsprofessions.pdf Accessed 8th May 2019
38. Duck S. Toward a research map for the study of relationship breakdown. In S. Duck & R. Gilmour (Eds.) 1981, Personal relationships 3: Personal relationships in disorder (pp. 1-29). London: *Academic Press*.
39. Wood J T and Duck S. Off the beaten track: New shores for relationship research. In J. T. Wood & S. Duck (Eds.), 1995. Under-studied relationships: Off the beaten track. (pp. 1-21). Thousand Oaks, CA: *Sage*.
40. Levinson D J, Darrow D, Klein, E, Levinson, M, and McKee B. Seasons of a man's life. New York: *Knopf*. 1985
41. Eby LT, McManus S, Simon SA, and Russell JEA. An examination of negative mentoring experiences from the protégé perspective. *Journal of Vocational Behavior*. 2000; **57**:.21.
42. Eby LT and Allen T D. Further investigation of protégés' negative mentoring experiences. *Group & Organization Management*. 2002; **27**: 456-479.
43. Sanfey H, Hollands C and Gantt NL. Strategies for building an effective mentoring relationship. *Am J Surg*. 2013;**206**:714-718.
44. Patel VM, Warren O, Ahmed K et al. How can we build mentorship in surgeons in the future? *ANZ J Surg*. 2011; 81(6):418-424.
45. Rohrich RJ. Mentor in medicine. *Plast Reconstr Surg*. 2003; **112:**1087-8.