

# Reaching Our Successors: Millennial Generation Medical Students and Plastic Surgery as a Career Choice

Abdulasheed Ibrahim, Malachy E Asuku

Department of Surgery, Division of Plastic Surgery, Ahmadu Bello University Zaria, Nigeria

## ABSTRACT

**Background:** Research shows that career choices are made as a result of preconceived ideas and exposure to a specialty. If plastic surgery is to continue to attract the best, factors that may dissuade the millennial generation medical students from pursuing plastic surgery as a career must be identified and addressed. We explored the determinants of interest in plastic surgery as a career choice amongst millennial generation medical students. **Materials and Methods:** A survey regarding factors considered important in choosing plastic surgery was conducted amongst final year medical students in September 2011. Participants were asked to rate their agreement or disagreement with 18 statements on a four-point Likert scale (1 = very unimportant; 4 = very important). Statistical analyses were performed using Chi-square test to compare categorical variables between male and female medical students. Values of  $P < 0.05$  were considered significant. **Results:** The most important factors influencing the decision of medical students to choose plastic surgery as a career include; plastic surgeons appear happy in their work 93 (85%), Plastic surgeons have rewarding careers 78 (71%), and plastic surgeons provide good role models for medical students 96 (87%). An overall score of  $> 3.0$  was seen in all the subscales except in gender equity and life style concerns. There were statistically significant differences between male and female students in opinions of a spouse, a significant other, or family members in choosing plastic surgery  $P < 0.5$  and my choice of plastic surgery will be influenced by my decision to have a family  $P < 0.5$ . **Conclusion:** Factors influencing the decision of medical students to choose plastic surgery were related to the perceived quality of life as a plastic surgeon and the ability of plastic surgeons to provide good role models for medical students. Female medical students were more concerned with gender equity and work-life balance in selecting plastic surgery compared to male medical students.

**KEYWORDS:** Career, medical students, millennial generation, plastic surgery, residency

## INTRODUCTION

Research shows that career choices are made as a result of preconceived ideas and positive exposure to a specialty. This includes exposure to good role models, positive time spent within

### Address for correspondence:

Dr. Abdulasheed Ibrahim,  
Department of Surgery, Division of Plastic Surgery,  
Ahmadu Bello University Zaria, Nigeria.  
E-mail: shidoibrahim@yahoo.com

### Access this article online

#### Quick Response Code:



Website: [www.nigerianjsurg.com](http://www.nigerianjsurg.com)

DOI:  
10.4103/1117-6806.169868

the specialty and crucially the timing of that experience.<sup>[1]</sup> Whilst the debate amongst plastic surgeons continues about what should be taught and how it is best presented to medical students, those involved in the recruitment of residents face increasing challenges.<sup>[2]</sup> These include the erosion of financial and clinical resources for teaching as well as a major paradigm shift; the desire for more lifestyle-friendly surgical subspecialties and generation shifts.<sup>[2-4]</sup>

A generation is defined as a group of people who share the same formative experiences which determine that individuals born in continuous years form “cohorts.”<sup>[5]</sup> Generations, like people, have personalities. Their collective identities begin to reveal themselves as they approach adolescence and begin to act upon their needs, values and attitudes.<sup>[5]</sup> Born between 1980 and 1999, members of the millennial generation are also referred to as millennials, generation Y, generation next, and trophy kids. This generation follows generation X (born between 1965 and 1979), baby boomers (born between 1946 and 1964), and veterans, also

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

**For reprints contact:** [reprints@medknow.com](mailto:reprints@medknow.com)

**How to cite this article:** Ibrahim A, Asuku ME. Reaching Our Successors: Millennial Generation Medical Students and Plastic Surgery as a Career Choice. Niger J Surg 2016;22:12-6.

called the silent generation (born between 1920 and 1945).<sup>[6]</sup> Research into the values and learning styles of the millennials is currently unfolding. They are different and demanding in several perspectives.<sup>[7]</sup> This generation is becoming known for being self-reliant, questioning, and are technologically advanced beyond any other age group.<sup>[8]</sup> Communication is immediate, via texting, tweeting, skyping and instant messaging. Speed is valued more than attention to nagging detail.<sup>[5]</sup> They are a social group, forging lots of friendships and social circles, and pioneers of social networking (e.g. Facebook, My Space, Friendster).<sup>[6]</sup> As a group, millennials are more collective in thinking, optimistic, and said to be “in a state of continuous partial attention.” They are compliant and respectful of authority, yet they do not hesitate to challenge authority. Members of the millennial generation believe respect is earned and not granted just because of title or rank. They are exceptionally altruistic and, collectively, are a hopeful, future-oriented generation.<sup>[8]</sup>

The Postgraduate Residency Training Program in Plastic Surgery is affiliated to two Colleges in Nigeria. The West African College of Surgeons, and National Postgraduate Medical College of Nigeria. The Colleges’ identifies a resident as a trainee enrolled in a recognized training program accredited with one of the institutions in Nigeria. The residency training provides a focused, intensive, 6-year educational experience in Plastic and Reconstructive Surgery. Residency in plastic surgery is an apprenticeship system, where consultants act as guides to trainees rotating through their units within a set period of time.<sup>[1-3]</sup>

In much the same way that understanding and appreciating differences in race, ethnicity and culture are essential to delivering quality patient care, understanding generational differences will enable us to be more effective as educators and clinicians.<sup>[5,8]</sup> If plastic surgery is to continue to attract the best and the brightest, factors that may dissuade the millennial generation medical students from pursuing plastic surgery as a career must be identified and addressed.<sup>[9]</sup> The influence of these factors on Nigerian medical students in the choice of plastic surgery has not been previously studied.<sup>[10]</sup> We set out to explore the determinants of interest in plastic surgery as a career choice amongst millennial generation medical students.

## MATERIALS AND METHODS

A cross-sectional survey regarding factors considered important in choosing plastic surgery was conducted amongst final year medical students in September 2011. The survey was developed by the authors following a literature review and focused on information deemed pertinent to plastic surgery as a career choice by the millennial generation.<sup>[4,9-11]</sup> The questionnaires were pretested so that we could accurately assess whether the questionnaire is being filled out properly, whether the questions are actually understood by respondents, and to assess whether respondents are able and willing to provide the needed information. Given that the study population was university students, we opted for a self administered questionnaire that

was designed specifically to be completed by a respondent without intervention of the researchers collecting the data. It was structured to have some of the questions and their sequence determined in advance, while others evolve as the interview proceeds.

Section I of the questionnaire covered demography which included age, sex and level of study. In section II, participants were asked to rate their agreement or disagreement with 18 statements on a four-point Likert scale (1 = very unimportant; 2 = unimportant; 3 = important; 4 = very important). The statements addressed issues that had been shown from previous studies to influence medical students’ career choices; quality of life as a plastic surgeon, residency in plastic surgery, plastic surgeons as role models, gender equity and the perceived effect of a career in plastic surgery on lifestyle and social relationships.

Scores of 1 and 2 were combined to create a percentage of “unimportant” and scores of 3 and 4 combined to create a percentage of “important” factors. Additionally, a rating average was created for each group based on the average response for the cohort, with >3.0 being considered a highly important average for the group. Statistical analyses were performed using Chi-square test to compare categorical variables between male and female medical students. Values of  $P < 0.05$  were considered significant.

## RESULTS

One hundred and ten final year students completed the questionnaires. The mean age of the students was 25.3 years with a range of 24–29 years. Gender was not evenly distributed; 83 (76%) of the students being male and 27 (24%) were female. Factors influencing the decision of medical students to choose plastic surgery as a career are outlined in Table 1. The most important factors include; plastic surgeons appear happy in their work 93 (85%), plastic surgeons witness the results of their work immediately 89 (66%), plastic surgeons have rewarding careers 78 (71%), and plastic surgeons provide good role models for medical students 96 (87%). A total of 65 (59%) students indicated that the lifestyle of plastic surgery residents is not important in choosing plastic surgery as a career. Seventy-one (65%) students also indicated as not important the statement; plastic surgery residency is more difficult for women than men because of attitudes held within the surgical community. Clinical clerkship was considered as an important influence on career choice by 70 (64%) of students. Eighty (73%) students will consider a residency in plastic surgery because it places emphasis on both service and training. An overall score of >3.0 was seen in all the subscales except in gender equity and life style concerns [Table 1]. The lowest scoring items were plastic surgery residency is more difficult for women than men because of attitudes held within the surgical community (2.30) and the lifestyle of plastic surgery residents is well balanced (2.4).

Data were also analyzed by gender and interestingly, they were equally divided in their responses to the statement plastic

**Table 1: Participants response to factors influencing plastic surgery as a career choice**

How important are these factors to choose plastic surgery?	Unimportant (score 1 or 2)	Important (score 3 or 4)	Average rating
Quality of life as a plastic surgeon			
Plastic surgeons enjoy prestige	41 (37)	69 (63)	3.0
Plastic surgeons witness the results of their work immediately	21 (19)	89 (66)	3.2
More than other surgeons, plastic surgeons appear happy in their work	17 (16)	93 (85)	3.3
Plastic surgeons have a higher income potential than other surgeons	37 (34)	73 (66)	2.89
Plastic surgeons have rewarding careers	32 (29)	78 (71)	3.24
Residency in plastic surgery			
The lifestyle of plastic surgery residents is well balanced	65 (59)	45 (41)	2.4
Plastic surgery residency places emphasis on both service and training	30 (27)	80 (73)	3.2
Plastic surgery residency is more demanding than residency in other specialties	7 (6)	103 (94)	3.28
Competition for obtaining a residency position affects my choice of specialty	49 (45)	61 (56)	2.71
Plastic surgeons as role models			
Plastic surgeons provide good role models for medical students	14 (13)	96 (87)	3.46
Clinical clerkship is an important influence on career choice	40 (36)	70 (64)	2.89
Personalities of people in the field influence my career choice	24 (22)	86 (78)	3.06
Gender equity			
Plastic surgery residency is more demanding for women than men because of scheduling	29 (26)	81 (74)	2.94
Plastic surgery residency is more difficult for women than men because of attitudes held within the surgical community	71 (65)	39 (36)	2.30
Plastic surgeons have an "old boy" attitude	66 (60)	44 (40)	2.47
I am influenced by the lack of male/female role models	20 (18)	90 (82)	3.16
Lifestyle concerns			
Opinions of a spouse, a significant other, or family members are important to me in choosing a specialty	62 (56)	48 (44)	2.55
My choice of plastic surgery will be influenced by my decision to have a family	65 (59)	45 (41)	2.41

**Table 2: Responses of male and female medical students to factors influencing plastic surgery as a career choice**

	Unimportant (score 1 or 2)		Important (score 3 or 4)	
	Male	Female	Male	Female
Quality of life as a plastic surgeon				
Plastic surgeons enjoy prestige	32 (39)	9 (33)	51 (61)	18 (67)
Plastic surgeons witness the results of their work immediately	16 (19)	5 (19)	69 (83)	20 (74)
More than other surgeons, plastic surgeons appear happy in their work	13 (16)	4 (15)	70 (84)	23 (85)
Plastic surgeons have a higher income potential than other surgeons	31 (37)	6 (22)	53 (64)	20 (74)
Plastic surgeons have rewarding careers	25 (30)	7 (26)	58 (70)	20 (74)
Residency in plastic surgery				
The lifestyle of plastic surgery residents is well balanced	52 (63)	13 (48)	30 (36)	14 (52)
Plastic surgery residency places emphasis on both service and training	25 (30)	7 (26)	60 (72)	20 (74)
Plastic surgery residency is more demanding than residency in other specialties	5 (6)	2 (7)	78 (94)	25 (93)
Competition for obtaining a residency position affects my choice of specialty	37 (45)	12 (44)	46 (55)	15 (56)
Plastic surgeons as role models				
Plastic surgeons provide good role models for medical students	8 (10)	6 (22)	75 (90)	21 (78)
Clinical clerkship is an important influence on career choice	33 (40)	7 (26)	50 (60)	20 (74)
Personalities of people in the field influence my career choice	21 (25)	3 (11)	62 (75)	12 (89)
Gender equity				
Plastic surgery residency is more demanding for women than men because of scheduling	24 (30)	5 (19)	59 (71)	22 (82)
Plastic surgery residency is more difficult for women than men because of attitudes held within the surgical community	51 (61)	20 (74)	32 (39)	7 (26)
Plastic surgeons have an "old boy" attitude	58 (70)	8 (30)	25 (30)	19 (70)
I am influenced by the lack of male/female role models	15 (18)	5 (19)	68 (93)	22 (82)
Lifestyle concerns				
Opinions of a spouse, a significant other, or family members are important to me in choosing a specialty	54 (65)	8 (30)	29 (35)	19 (70)*
My choice of plastic surgery will be influenced by my decision to have a family	60 (72)	5 (19)	23 (28)	22 (82)*

\*P&lt;0.05 compared with male

surgery residency is more demanding than residency in other specialties and competition for obtaining a residency position affects my choice of plastic surgery. This was not statistically significant [Table 2]. Male and female students were equally discouraged from a career in plastic surgery by gender equity and life style concerns. However, there were statistically significant differences between male and female students in opinions of a spouse, a significant other, or family members in choosing plastic surgery  $P < 0.5$  and my choice of plastic surgery will be influenced by my decision to have a family  $P < 0.5$  [Table 2].

## DISCUSSION

In this study, the commonest factors considered important in the selection of plastic surgery were related to the perceived quality of life as a plastic surgeon and the ability of plastic surgeons to provide good role models for medical students. A similar study by Greene and May<sup>[12]</sup> showed that the most influential factor in an undergraduate's decision to choose a career in plastic surgery was exposure to plastic surgery as a medical student. Such an involvement is thought to be most effective before the 3<sup>rd</sup> year of medical school.<sup>[1]</sup> Role models are individuals admired for their ways of being and acting as professionals. Burack *et al.*<sup>[13]</sup> explained the process of specialty choice by medical students and the influence of role models in this process. He proposed that the development of interest in a specialty was a socially constructed process of trying on possible selves (projecting oneself into hypothetical career and personal roles). He concluded that this explained the influence role models have on career choices and their capacity to challenge negative stereotypes.<sup>[13]</sup> These findings are important in bridging the generation gap in plastic surgery.<sup>[3,4,8,11,14,15]</sup> We need to convey the excitement, triumphs and personal reward we derive from the beautiful art of plastic surgery. We must make appropriate role models available to the students on a regular basis<sup>[9]</sup> because the millennial generation was raised on instant communication and constant parental input. They want space to figure out their own strategies but approachable mentors who provide advice. Meaningfulness should also be emphasized. The millennial generation students want to know that every day will make a difference.<sup>[16]</sup> These mentors must thus provide honest feedback on a regular basis and recognize the mentees as individuals', not just employees.<sup>[3,16,17]</sup> We need to be careful not to miss out on training future plastic surgeons because of being out-of-touch with these generational differences.<sup>[17]</sup> We should encourage every medical school to have a plastic surgeon who can serve as a mentor. Medical schools without a plastic surgery division or department obviously deprive their students of an important facet of medical education.

Male and female medical students equally agreed, as important or very important the statement, plastic surgery residency is more demanding than residency in other specialties and competition for obtaining a residency position affects my choice of plastic surgery. While no statistical significance was noted, there are significant positive implications for application into a residency

program in plastic surgery.<sup>[8]</sup> It suggests that the content is inherently interesting to them and they are attracted to plastic surgery by the demands and challenges of the specialty.<sup>[18-20]</sup> Coaching, similar to an apprenticeship system is not new to the millennial generation, many of whom were involved in team sports or the arts. They received private tutoring or lessons and were carefully guided by their parents in personal characteristics which transcend gender.<sup>[6]</sup> The millennial generation have the desire to learn well and quickly, to do tasks more effectively and efficiently, and to contribute something of value to the greater good.<sup>[6,17]</sup> They are thus constantly striving to achieve and enjoy pushing themselves out of their comfort zone.<sup>[21]</sup> To attract, develop and retain the brightest talents in plastic surgery, it is important to accommodate these learning values and needs of the millennial generation medical students in relation to the current multigenerational residency program.

In this study the responses of female medical students on life style concerns were significantly different. This reaffirmed the work of others that female surgeons are experiencing slightly greater challenges in terms of balancing their lives, particularly with respect to family responsibilities interfering with work and having the time to do the things they want.<sup>[4,15,18]</sup> There are several reasons why becoming a mother can make combining a balanced life with a satisfying career very difficult for female plastic surgeons. One is that they are more likely to have a spouse with a similarly demanding professional career. This results in greater work-family conflict because they still retain a majority of the responsibility for household and family demands, even when they work comparable hours as their spouses.<sup>[3,15,18]</sup> The millennial generation members have needs that are well defined, and they are well able to make a demand because they have been conditioned to get what they want.<sup>[7]</sup> They tend to work for fulfillment as well as wanting work to balance with their lifestyle rather than work providing for it. The hierarchy goes from basic social safety and self-esteem, to self-actualization needs.<sup>[6,7,17]</sup> Professional advancement of women within plastic surgery is improving, but there are still significant obstacles. To address these issues, it is important for consultant surgeons to model a balanced lifestyle and to promote it amongst medical students.

As educators in plastic surgery, we are interested in enrolling the best medical students to our specialty to ensure the future success of our field. Plastic surgery, just as other specialties, is at a point where generational variances make a difference. They may make a difference in who we train and how successfully we train them. Understanding that the millennial generation medical students have often been managed, nurtured and provided with a multitude of diverting activities from birth, we can expect them to initially need much more direction, but train them to be self-directed learners in a plastic surgery residency program.<sup>[17]</sup>

## LIMITATIONS

This study was conducted in a single institution using a convenient sample of final year medical students, thus we cannot generalize



the results. This study should be replicated in more institutions to glean a larger sample size of medical students. Second, it only provides the perspective of medical students in a single academic session. A similar study over several years would provide trending information that are of concern to medical students when contemplating a career in plastic surgery. Third, we did not explore the recent explosion of television programs and media coverage of plastic surgery and its possible influence on career choice. Future research is required to determine the influence of the media and plastic surgery as a career choice amongst the millennial generation medical students. Finally, this is a self report survey research. While surveys are commonly used for needs assessments, the results are heavily dependent on the content and context of the questionnaire and the results must be considered from this standpoint.

## CONCLUSION

Our study shows that a focus on the characteristics which define the millennial generation medical students may be a useful construct in reaching out to our successors. Factors influencing the decision of medical students to choose plastic surgery were related to the perceived quality of life as a plastic surgeon and the ability of plastic surgeons to provide good role models for medical students. Female medical students were more concerned with gender equity and work-life balance in selecting plastic surgery compared to male medical students. Thus, the challenge is not only to accommodate the traits of the millennial generation medical students, but also to motivate them as future plastic surgeons to meet the quality of care that the public expects.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. Rees-Lee JE, Lee S. Reaching our successors: The trend for early specialisation and the potential effect on recruitment to our speciality. *J Plast Reconstr Aesthet Surg* 2008;61:1135-8.
2. Burd A, Chiu T, McNaught C. Plastic surgery in the undergraduate curriculum: The importance of considering students' perceptions. *Br J Plast Surg* 2004;57:773-9.
3. Jovic E, Wallace JE, Lemaire J. The generation and gender shifts in medicine: An exploratory survey of internal medicine physicians. *BMC Health Serv Res* 2006;6:55.
4. Lee JT, Teshome M, de Virgilio C, Ishaque B, Qiu M, Dalman RL. A survey of demographics, motivations, and backgrounds among applicants to the integrated 0 + 5 vascular surgery residency. *J Vasc Surg* 2010;51:496-502.
5. Bernstein CA, Bhugra D. Next generation of psychiatrists: What is needed in training? *Asian J Psychiatr* 2011;4:88-91.
6. Piper LE. Generation Y in healthcare: Leading millennials in an era of reform. *Front Health Serv Manage* 2012;29:16-28.
7. Piper LE. The generation-Y workforce in health care: The new challenge for leadership. *Health Care Manag (Frederick)* 2008;27:98-103.
8. Walker JT, Martin T, White J, Elliott R, Norwood A, Mangum C, *et al.* Generational (age) differences in nursing students' preferences for teaching methods. *J Nurs Educ* 2006;45:371-4.
9. Neumayer L, Kaiser S, Anderson K, Barney L, Curet M, Jacobs D, *et al.* Perceptions of women medical students and their influence on career choice. *Am J Surg* 2002;183:146-50.
10. Abioye IA, Ibrahim NA, Odesanya MO, Wright KO. The future of trauma care in a developing country: Interest of medical students and interns in surgery and surgical specialties. *Int J Surg* 2012;10:209-12.
11. Erzurum VZ, Obermeyer RJ, Fecher A, Thyagarajan P, Tan P, Koler AK, *et al.* What influences medical students' choice of surgical careers. *Surgery* 2000;128:253-6.
12. Greene AK, May JW Jr. Applying to plastic surgery residency: Factors associated with medical student career choice. *Plast Reconstr Surg* 2008;121:1049-53.
13. Burack JH, Irby DM, Carline JD, Ambrozy DM, Ellsbury KE, Stritter FT. A study of medical students' specialty-choice pathways: Trying on possible selves. *Acad Med* 1997;72:534-41.
14. Brundage SI, Lucci A, Miller CC, Azizzadeh A, Spain DA, Kozar RA. Potential targets to encourage a surgical career. *J Am Coll Surg* 2005;200:946-53.
15. Wendel TM, Godellas CV, Prinz RA. Are there gender differences in choosing a surgical career? *Surgery* 2003;134:591-6.
16. Schlitzkus LL, Schenarts KD, Schenarts PJ. Is your residency program ready for generation Y? *J Surg Educ* 2010;67:108-11.
17. Money SR, O'Donnell ME, Gray RJ. In the time of significant generational diversity - Surgical leadership must step up! *Surgeon* 2014;12:3-6.
18. Sanfey HA, Saalwachter-Schulman AR, Nyhof-Young JM, Eidelson B, Mann BD. Influences on medical student career choice: Gender or generation? *Arch Surg* 2006;141:1086-94.
19. Bode CO, Nwawolo CC, Giwa-Osagie OF. Surgical education at the West African College of Surgeons. *World J Surg* 2008;32:2162-6.
20. Mukhopadhyay S, China S. Teaching and learning in the operating theatre: A framework for trainers and advanced trainees in obstetrics and gynaecology. *J Obstet Gynaecol* 2010;30:238-40.
21. Walker K. Fast-track for fast times: Catching and keeping generation Y in the nursing workforce. *Contemp Nurse* 2007;24:147-58.