

CAREER CHOICES OF MEDICAL DOCTORS IN ANAMBRA STATE, NIGERIA AND FACTORS INFLUENCING THEIR CHOICES: THE NEED FOR BALANCE

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Abstract

Background:

One of the most challenging decisions for any medical graduate is the career pathway choice. A lot of factors are known to influence this decision. Medical graduates make career choices without reference to societal needs. Some specialties end up being competitive while some are faced with shortages. There is need for a balanced distribution of specialists if the general populace will be served by the right mix of medical specialists.

Objective:

The study sought to determine the factors influencing career choices amongst medical doctors.

Methods:

This was a cross-sectional study of doctors in Anambra State. Stratified sampling technique with proportionate allocation was used to select the required number of doctors from each category of doctors. Simple random sampling was then used to select the respondents from the various groups. Data was collected using semi-structured, pre-tested and validated questionnaire. Analysis was done using SPSS V 24.

Results:

Two hundred and ninety respondents were recruited with 62.8% being males. The mean age of respondents was 39.47 ± 9.25 years. Those who had opted not to specialize in any area were 13.1%. More than half of the respondents (59%) were distributed among the four major specialties of Surgery, Obstetrics & Gynaecology, Internal Medicine and Pediatrics respectively. The major factors that were found to influence choice of specialty were personal interest, perceived competence and future job opportunities in that specialty. The commonest reasons for change of

from initial desired specialty were stressful nature of specialty and previous negative experiences.

Conclusion:

Many factors are involved in physician's choice of career after graduation. While some specialties have enough doctors with intense competition, some other specialties are faced with dire physician shortages. There is a need for these factors to be critically analyzed in order to achieve a balanced distribution of physicians for effective healthcare service in these communities.

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Introduction

Over the years, the medical specialty has undergone several changes. In the eighteen century, the practice of medicine was largely by observation¹. Over the years, medicine in adopting science courses such as pathology, biochemistry, genetics, molecular biology etc, has paved way into the era of specialization. Globalization has affected the practice of medicine greatly.

The master-apprenticeship pattern of the 18th century has gradually paved way for the practice of more clinical and specialized medicine. Currently, by the time a medical student is graduating from the medical school, he or she is faced with the dilemma of which specialty of medicine to via off into. Different factors have been found to influence doctor's career choices. These include personal factors, banter about a particular specialty, environmental factors as well as peculiar characteristics of the different medical specialties^{2,3,4}.

Due to the evolution that medical practice has undergone with the technological advancements of the twenty first century, it has become increasingly challenging for newly graduated doctors to decide on what career pathway to take after graduation. In the course of medical training as undergraduates,

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the medical students are exposed to various specialties during their clinical postings and rotations. The rotation through the different specialties creates the initial impression/idea of the various specialties in the minds of these medical undergraduates. The encounter with their different trainers (medical lecturers), the clinical pattern of the different specialties and personal experiences as they rotate through them cause them to begin to deliberate on the specialties that will likely be their final destination.

Without adequate exposure to other specialties, mentorship and career counselling, the fresh doctors are restricted only to those specialties which they are exposed to with resultant shortages in other specialties.^{5,6,7} This has led to increasing decline in the number of medical doctors going for residency training in certain specialties. The scarcity of medical doctors in certain specialties spells doom as the health system will be unable to meet the medical needs of its population. A functional and balanced health workforce is critical for the nation to achieve universal health coverage. Maldistribution in specialty has adverse implications for availability of comprehensive health care services to citizens.

In addition to offering healthcare services, the medical specialists provide medical education, conduct research, assist in health policy formulation as well as implement health care programs. These activities all contribute to a functional and stable health system in any country. Of more crucial is the fact that scarcity of specialists in certain medical fields will in turn spell doom for adequate and efficient training of medical students and doctors.

Many factors have been postulated to affect medical specialty choices. These factors include personality traits, gender, economic status, clinical experience, family influence, lifestyle working in urban city, mentorship length of specialization and salary level^{8,9,10,11,12,13}. In the study by Ezegwui et al, personal interest was rated as having the strongest influence followed by the content of the specialty, desired practice setting and clinical rotation in the department. Gender was also noted to play a significant role as the males selected more lucrative areas¹⁴.

The Nigerian healthcare sector has been consistently plagued with poor distribution of health workers.

The shortage of medical doctors partly attributable to brain drain with poor remuneration has widened the chasm between the availability of specialists and the population requirements¹⁵. A study by Moslehuddin et al on career choices noted that a good number of the respondents had selected the option of specializing in the core major specialties whereas the basic medical courses and some non-clinical specialties were largely unattractive. This exposes the impending doom of shortage of medical professionals in these specialties especially in the rural areas¹⁶.

A similar study by Syakurah et al revealed that 75% of the respondents had chosen to undergo their specialist training in four major clinical specialties paediatrics, obstetrics, surgery and internal medicine in their first choice and surgery, internal medicine, O & G and paediatrics for their second choice. Even the third choice still had the four major specialties in this order internal medicine, paediatrics, O & G and surgery¹⁷. It has been observed that some of the career desires/needs change as one progresses through the medical school under the effect of both personal experiences and specialty experience.¹⁸

Some specialties are worse hit by this dilemma. With the current Japa Syndrome, a situation in which young doctors migrate after graduation to other countries for greener pastures, the looming crisis appears to be getting worse.¹⁹ This brings to the fore the need for assessment of factors that affect career choices. It therefore becomes imperative that these factors be critically reviewed in order to institute measures that will ensure balanced distribution of doctors as well as formulate policies that will increase attraction to the neglected specialties.

Subjects and Methods

Study Site:

This study was conducted among medical doctors in the three tertiary health facilities in Anambra State. Two of the health facilities are owned by the Federal Government – Nnamdi Azikiwe University Teaching Hospital, Nnewi and Federal Medical Centre, Onitsha. The third one is Chukwuemeka Odumegwu Ojukwu Teaching Hospital Awka being run by the State government.

Study Design:

An institution based cross-sectional descriptive study design was used.

Study population:

The study population consists of all medical doctors working in Anambra State.

Inclusion Criteria:

All medical doctors who are currently undergoing or have finished their housemanship, undergoing their residency training or have finished their specialty training, or medical officers who have opted not to undergo any specialist training.

Exclusion Criteria:

Medical doctors who did not do their undergraduate training in Nigeria were excluded from the study.

Sample size determination:

The study derived its sample size using Cochran's formula and the sampling size was estimated to be 261^{20,21} Where N is the minimum sample size: Z is the standard normal deviate (1.96) at 95% confidence level,

P is the prevalence = 0.783²¹ calculated from a previous study, Q = 1-p = 0.217, d is the degree of precision, usually set at 5% (0.05),

$$N = \frac{1.196^2 \times 0.783 \times 0.217}{0.05} \quad N = 261 \quad \text{Therefore,}$$

calculating for an attrition rate of 10%, the adjusted sample size was 287, approximated to 290. A final sample size of 290 was then used for the study.

Sampling Technique

A multi-stage sampling technique was used to select the doctors for the study from Anambra State. The first stage involved selecting a hospital from each of the three senatorial zones in the state. Then, the second stage involved stratified random sampling technique with proportionate allocation to determine the number of doctors to be selected from each of the three tertiary health facilities. The doctors were divided into three groups (consultants, residents and medical officers).

The number of consultants, resident doctors, and medical officers employed in these facilities was obtained from the records department of these facilities. With the information obtained, a proportionate stratified sampling method was used to derive the strata sample size for each of the three strata of doctors. The third stage involved the respondents being randomly selected from each

category until the estimated number from each sub-group was reached.

Data Collection Method

A well-adapted, pretested, semi-structured and self-administered questionnaire was used to collect data from respondents.

Data Management**Statistical Analysis**

The data was collected, cleaned and collated. Both qualitative and quantitative techniques were used to analyze the data. Categorical variables were summarized using percentages and continuous variables were summarized using mean and standard deviation. SPSS V24 was used to analyze data. The association between the explanatory and outcome variables was investigated using Chi-Square analysis or Fischers test as the case maybe. Statistical Significance was set at $p < 0.05$

Ethical Considerations

Research ethics approval was obtained from the Ethics and Research Committee of Nnamdi Azikiwe University Teaching Hospital, Nnewi Anambra State (NAUTH/CS/66/Vol.16/ver.3/269/2022/086).

Results:

Table 1: Sociodemographic characteristics of respondents

Variables	Frequency	Percent
Gender	182	62.8
Male		
Female	108	37.2
Age (in years) = <25years	2	0.7
26-45 years	229	79
46-65 years	55	19
=>66 years	4	1.4

Mean Age (+STD): 39.47±9.25

Marital status	Single	78	26.9
	Married	212	73.1
	Divorced	0	0
	Separated	0	0
	Others	0	0
Religion	Christian	290	100
	Islam	0	0
	Others	0	0
Tribe	Igbo	286	98.6
	Yoruba	1	0.3
	Hausa	0	0
	Ebira	1	0.3
	Ibibio	1	0.3
	Urhobo	1	0.3

The study revealed a male preponderance of 62.8%. Majority of the doctors were in the 26 – 45 years category. Majority of the doctors selected were married.

Table 2: Career stage of respondents

Career status	Frequency	Percent
Residents & HOs	128	44.1
Medical Officers	47	16.2
Consultants	115	39.6
Total	290	100

HOs- House Officers; Residents- Resident Doctors.

Table 3: Current specializations of respondents

Current area of specialization	Frequency	Percent
Obstetrics and gynaecology	46	15.9
Surgery (unspecified)	42	14.5
Internal medicine (unspecified)	38	13.1
Paediatrics	32	11
Family medicine	30	10.3
Ophthalmology	15	5.2
Pathology	13	4.5
Community medicine	9	3.1
Radiology	6	2.1

Haematology and oncology	4	1.4
ENT	4	1.4
Psychiatry	3	1
Plastic surgery	3	1
Cardiology	2	0.7
Anaesthesiology	1	0.3
Neurosurgery	1	0.3
Paediatric surgery	1	0.3
General surgery	1	0.3
Orthopaedic surgery	1	0.3
Medical officers	47	16.2

The table above shows the different specialties of the doctors who participated in the study. Obstetrics and gynaecology was the specialty with the highest number of respondents with 15.9%, while medical officers were 13.1% (38).

Table 4: Private practice and other businesses among respondents

	Yes Frequency	No Frequency	Percent	Percent
Do You Own A Private Practice?	27	141	16.1	83.9
Resident doctor	19	65	22.6	77.4
Consultant	58	223	23.1	76.9
Subtotal				
Do You Work in any Private Practice?	13	116	34.2	69.0
Resident doctor	52	41	31.0	48.8
Consultant	43	182	51.2	62.8
Subtotal				
Do You Own A Non-medical Business?	12	141	31.6	83.9
Resident doctor	27	65	16.1	77.4
Consultant	19	232	22.6	80
Subtotal				

Table 5: Factors that influence choice of career among respondents

	Very influential N(%)	Influential N(%)	Neutral N(%)	Uninfluential N(%)	Very uninformal N(%)	Mean±STD	Strength	X ² (Chi Square)	(p-value)
Personal interest	209(72.1)*	64(22.1)	9(3.1)	5(1.7)	3(1)	4.62±0.73	482	534.72	Influential
Personal interest of family and friends	30(10.3)	78(26.9)*	72(24.8)	58(20)	52(17.9)	2.92±1.26	138	24.14	Not Influential
Geographic location	20(6.9)	57(19.7)	103(35.5)*	68(23.4)	42(14.5)	2.81±1.12	97	65.96	Not Influential
Med school posting	77(26.6)	102(35.2)*	57(19.7)	38(13.1)	16(5.5)	3.64±1.17	256	76.93	Influential
Positive housemanship experience	70(24.1)	101(34.8)*	59(20.3)	44(15.2)	16(5.2)	3.57±1.16	241	69.17	Influential
Influence from a mentor	67(23.1)	86(29.7)*	74(25.5)	46(15.9)	17(5.9)	3.48±1.18	220	50.79	Influential
Lifestyle and financial rewards	39(13.4)	95(32.8)*	82(28.3)	42(14.5)	32(11)	3.23±1.18	173	55.82	Influential
Future job opportunities	69(23.8)	126(43.4)	*54(18.6)	26(9)	15(5.2)	3.72±1.08	264	131.62	Influential
Perceived competence	94(32.4)	133(45.9)*	39(13.4)	15(5.2)	9(3.1)	3.99±0.97	321	198.82	Influential

Freer lifestyle	58(20)	74(25.5)	88(30.3)*	40(13.8)	30(10.3)	3.31±1.23	190	39.03	Influential
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Table 6: Association between sociodemographic variables, initial and current career choice

Factors	Initial career choice		Current career Choice	
	Fisher value	p-value	Fisher value	p-value
Age	96.28	0.03	806.73	<0.01
Gender	16.92	0.65	65.34	<0.01
Marital status	13.03	0.91	18.38	0.14
Tribe	10.24	0.98	4.20	0.98

Table 7: Doctors Who Had an Initial Choice of a Different Specialty

		Frequency	Percent
Did you have an initial choice of specialty different from what you are currently doing?	No	154	53.1
	Yes	136	46.9
Why did you change your mind about your initial choice of specialty?*	Previous negative experiences	37	27.2
	Poor remuneration	7	5.1
	Stressful nature of specialty	59	43.4
	Very competitive	9	6.6
	Banter about the field	15	11.2
	Family financial circumstances	20	14.7

*- consists of multiple answers

Table 8: Showing choice of career and influence of mentorship

Variables	Frequency (n=290)	Percentage (%)
Did you have a mentor?		
No	146	50.3
Yes	144	49.7
Did your mentor have any influence?		
Minor influence	17	11.8
No influence	30	20.8
Some influence	54	37.5
Strong influence	43	29.9
How helpful was your mentor?		
Not at all helpful	12	8.3
Pretty helpful	36	25.0
Somewhat helpful	42	29.2
Very helpful	54	37.5

Table 9: Association between various specialties and factors influencing their choices

	Obstetrics & Gynaecology	Internal Medicine	Surgery	Family Medicine	Pathology	Anaesthesia	Community Medicine	Ophthalmology	Paediatrics	Radiology
Personal Interest										
Personal Interest of Family & Friends					0.01*			0.01*		
Geographic location										
Medical School Posting	<0.01*							0.01*		
Mentor's Influence					0.03*			0.03*		
Financial Return	0.02*									
Future Job opportunities										
Perceived Competence										
Freer Lifestyle				0.01*						

TABLE 10: Comparison of initial choice and current specialty of those that had initial choice of specialty.

Specialty	Initial choice	Current choice
Obstetrics and gynaecology	28(20.6)	19(14)
Internal medicine	13(9.6)	17(12.5)
Paediatrics	26(19.1)	8(5.9)
Family medicine	1(0.7)	21(15.4)
Haematology and oncology	1(0.7)	3(2.2)
Ophthalmology	2(1.5)	9(6.6)
Surgery (unspecified)	18(13.2)	21(15.4)
Pathology	10(7.4)	8(5.9)
Anaesthesiology	1(0.7)	1(0.7)
Radiology	4(2.9)	5(3.7)
Community medicine	4(2.9)	5(3.7)
Cardiology	3(2.2)	2(1.5)

ENT	3(2.2)	2(1.5)
Neurosurgery	1(0.7)	0(0)
Plastic surgery	2(1.5)	0(0)
Paediatric surgery	4(2.9)	0(0)
General surgery	4(2.9)	0(0)
Orthopaedic surgery	3(2.2)	0(0)
Cardiothoracic surgery	2(1.5)	0(0)
Urology	3(2.2)	0(0)
Dermatology	3(2.2)	0(0)
Psychiatry	0(0)	2(1.5)
No residency	0(0)	13(9.6)
Total	136(100)	136(100)

Comparison of initial choice and current specialty

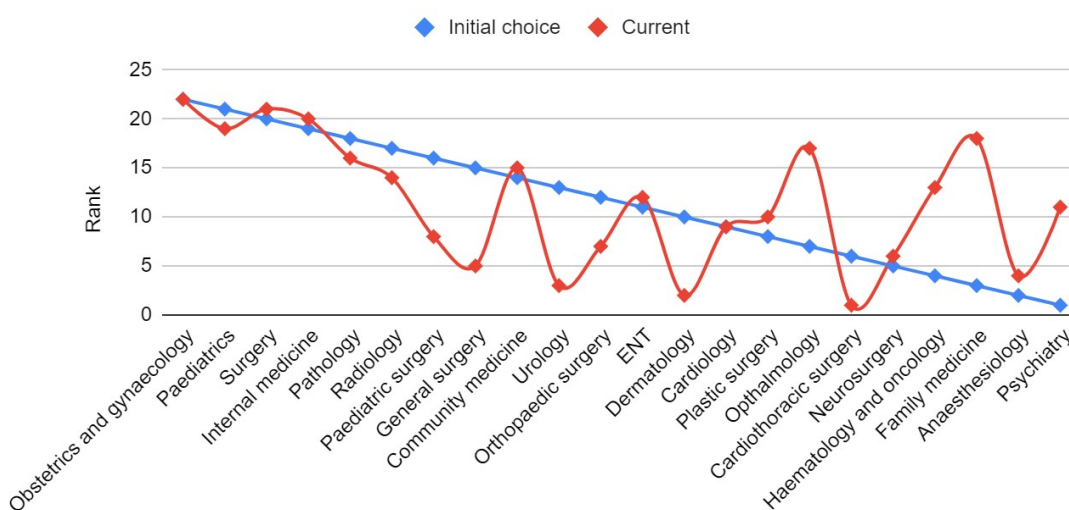


Fig.1: A line chart showing the distribution of final career choice compared to the initial choice

Result

The response rate was 100% (290/290). More than half of the doctors (62.8%) were males. Most of the respondents were in the age group of 26-45years with mean age being 39.47 ± 9.2 years. Majority of them (73.1%) were married. The least category of the respondents was the medical officers (13.1%) while the resident doctors/house officers had the highest percentage (57.9%). Undergraduate medical school posting was found to influence career choice in both obstetrics & gynaecology (O&G) and ophthalmology. Financial returns was only found to

influence a career choice in O & G. Mentorship was found to influence career choice in pathology and ophthalmology. Career choice in family medicine was found to be influenced by the desire for a freer lifestyle. While 26(19.1%) of doctors had initially wanted to specialise in paediatrics, only 8(5.9%) finally pursued their career in paediatrics.

Discussion

Concerning the percentage of doctors in different specialty, 15.9% of the doctors were in the Obstetrics & Gynaecology (O & G), 14.5% were in

surgery (unspecified) and 13.1% in internal medicine (unspecified). Surgery (unspecified) refers to all the sub-specialties in surgery including otorhinolaryngology, neurosurgery and orthopaedics. This also applies to internal medicine unspecified where all sub-specialties such as cardiology, gastroenterology, pulmonology, dermatology, neurology, nephrology and rheumatology are included. The least subscribed specialties were haematology & oncology (1.4%), psychiatry (1%) and anaesthesiology (0.3%).

Dossajee et al had a similar result where the four major specialties were the top preferred specialties²². 23.1% of the respondents owned a private practice facility while 37.2% worked in a private practice facility. Those who owned a non-medical business were 20%. The study revealed that 60.3% of doctors engaged in another form of medical practice outside their routine medical job while 20% of doctors engaged in a non-medical business. This is similar to the finding by Akwatagbite et al in their study where 60% of doctors engaged in another private practice and 20% engaged in non-medical business.²³

Some factors were found to influence specialty choices among doctors in this study. The most influential was personal interest followed by perceived competence in a particular field and then future job opportunities in the field. This is similar to the finding by Osoji et al who disclosed that personal interest and future job opportunities were among the highest factors that influenced the choice of specialty among doctors.²⁴ Other factors in this study that influenced choice of specialty include medical school posting, positive housemanship experience, influence of a mentor, lifestyle, financial rewards and freer lifestyle. This is similar to the finding by some other studies which found doctors preferences before the onset of medical education and during their training after graduation, societal trends, public expectations, requirements of training bodies/colleges, freer lifestyle and less time-on-call specialties to influence doctors' choice of specialties.^{25,26,27}

Geographical location and personal interest of family and friends were discovered not to influence choice of specialty generally. This is contrary to the finding in some places where personal interest of family and friends was a highly influential factor. While personal interest was seen as the most important factor

influencing choice of specialty generally, it was not significant in the choice of any particular specialty. This is similar to the finding by Querido et al.²⁸ On the other hand, while personal interest of family and friends was not influential in career choice generally, it was however significantly associated with choice of specialty in Pathology and Ophthalmology. Some other studies have found the personal interest of family and friends especially those in medical line to significantly influence choice of specialty.^{5,29}

Medical school posting was seen to affect the choice of O & G and ophthalmology specialties. In addition, the financial reward was significantly associated with choice of O & G specialty. This has been discovered by other studies as many physicians have been found to prefer the O&G specialty as they believe it is largely a financial rewarding specialty. Free lifestyle as a factor was significantly associated with choice of family medicine specialty. This is true as family medicine is associated with less call time and many studies have similar findings on this reason being the reason for choice of family medicine specialty.^{29,30,31} The influence of mentor was noted to significantly affect choice of pathology and ophthalmology specialties.

This is important considering that adequate mentorship can help direct newly graduated doctors to those specialties that are in dire shortage of specialists. This study had discovered that 29.9% of doctors had their choice of career influenced strongly by a mentor while 37.5% noted that a mentor had varying degree of influence on their career choice. Some studies have also noted the influence of mentorship on the career choices of doctors.^{32,33}

Another finding in this study is a change in career choice from their initial desire/choice for 46.9% of doctors. It was discovered that 43.4% of doctors had a change of mind from their initial choice because of perceived stressful nature of the specialty. Previous negative experiences accounted for the change in 27.2% of the doctors. Family financial circumstances and banter about the field accounted for 14.7% and 11.2% cases of change in choice of specialty.

Previous studies have demonstrated the effect of finances and banter about specialties on doctors choices of career.^{4,5} The change of choice of career was also evident across all categories of doctors as 9.6% of doctors who had wanted to pursue

specialist training later opted for no specialist training. Family Medicine, Ophthalmology and Internal Medicine had an increase in number of doctors who had them as their initial choice compared with the final choice whereas Paediatrics and O & G had a decline in the number of doctors who finally opted for them after their initial choice.

The idea of a considerable number of medical doctors being interested in limited clinical specialties as reported in earlier studies further reiterates the need for proper career guidance and effective mentorship.^{34,35} No mention was made of financial burden in this study as most medical students here do not generally have loans to access and as such tuition and school expenses are rather paid out of pocket. This takes away burden of repayment of school financial loan from the medical graduates unlike what is obtainable in some other countries.^{36,37} The emphasis here is rather on more financial reward for better lifestyle on graduation.

Furthermore, it was discovered in this study that age and gender significantly affected doctor's choice of career but not marital status. This is not surprising considering that females often select specialties that will give them more time for their families especially with the strategic role of women in general and Africa in particular. Other studies have noted a significant association between gender and choice of career/specialty.^{5,22,34,38,39}

With the recent spike in JAPA Syndrome which largely undermines effective service delivery in healthcare facilities, it becomes more pertinent that factors influencing career choice in medical practice be critically looked into so as to achieve equitable distribution of medical services in a resource-constrained environment.

Limitations of study

The selection of majority of doctors who are working largely in teaching hospitals and in urban areas may introduce bias that could affect generalization of data. There could also be misreporting resulting from personal experiences in medical practice.

Conclusion

Various factors influence doctors' career choices. An understanding of the interplay of these factors is important to achieve an equitable distribution of healthcare services in the community. Undergraduate career counseling and mentorship

are important if appropriate career choices are to be made by medical graduates with necessary reference to societal needs. This will strengthen the health system and provide the needed skill mix in human resources for health.

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Author Contributions

EON conceptualized the study. ALO, CCI and EON designed the study. ALO prepared the original draft. All authors were involved in the writing and revision of the manuscript. The authors read and approved the final manuscript and agreed to be accountable for all aspects of the work.

Data Availability

Anonymised data and details used in this study will be available from the corresponding author upon necessary request.

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Conflict of Interest

The authors declare that this research was conducted in the absence of any financial relationship that could be misconstrued as a potential conflict of interest

Ethical Approval:

The study was approved by the institution's Ethics and Research Committee.

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