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Traveling by winding roads or highways: Stability of medical students' specialty preferences over time

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ABSTRACT

Introduction: Medical students switch career preferences during medical school and likely distinguish themselves in stability of preference over time. The purpose of our study was to gain insight in career paths stability of medical students.

Method: The authors conducted a longitudinal, four sessions interview study with medical students with three intervals over a three and a half-year period. From all 24 participants the first and second career preferences were documented, analyzed and we calculated a stability score, to interpret career preference stability.

Results: Three different pathways were found: a 'winding road' with low stability (0–7 points); a 'country road' with medium stability (8–14 points); and a 'highway' with high stability (15–22 points).

Conclusion: This study provides a longitudinal view of how the stability of career preference, including the first and second career preference, evolves over time. While we only studied a small sample, the characterization may hold when larger samples are studied.

KEYWORDS

Undergraduate; continuing; medicine; decision-making

Introduction

Many students enter medical school with a career preference but few actually start a residency of that preference (Cleland et al. 2012; Kaur et al. 2014). With experience during medical school, career preferences shift (Scott et al. 2012). A study in the UK showed a 65% stability of medical students' career preference in year four until residency (Woolf et al. 2015). Goldenberg et al. found the preference for psychiatry at the start of medical school to be 1.6%, only 4.6% of which group actually chose psychiatry at graduation (Goldenberg et al. 2017). These studies related career preference of medical students with eventual specialty choice. What studies with two moments of measurement do not show is how stable students' preferences are over time. The aim of our study was to explore the stability of career preferences of medical students over a period of several years. The study was conducted in the Netherlands where undergraduate medical education takes six years and the final year is the period where they most experience how demands of specialties match with their career preferences (ten Cate et al. 2018). During medical school students are not exposed to all medical specialties. Most graduates do not directly continue residency after medical school. This period contributes in making the career choice (Querido et al. 2019).

Methods



We conducted a longitudinal interview study. We interviewed the same medical students four times over a three

Practice points

- Career preferences of medical students are usually studied cross sectional.
- This study investigated 20 students' career preference over a three and a half-year period with four consecutive interviews.
- A metric was created to calculate stability of career preference over time, from early final year in medical school to three and a half-year later.
- We found that students can be characterized as either traveling a 'highway', a 'country road' or a 'winding road' as to their career preference.

and a half-year period. The interviews focused on the development of career preferences over time. The first interview took place at the beginning of the final study year. The second interview was at the end of the final study year, i.e. around graduation. The third interview was planned one year after graduation and the fourth was one and a half year later. This enabled following their individual career preference paths.

Our study population consisted of students at the Utrecht University Medical Center in the Netherlands. We invited students from one cohort who started the final study year during teaching sessions in May and October 2014. The participants were informed that participation

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Box 1. Career preference stability score calculation.

If preference 4:

equals 3.1 → 5 points, but if no 3.2 was given, then 6 points

equals 3.2 → 4 points

equals 2.1 → 4 points, but if no 2.2 was given, then 5 points

equals 2.2 → 3 points

equals 1.1 → 3 points, but if no 1.2, then 4

equals 1.2 → 2 points

Consequently, the highest score is 15, the lowest possible score is 0.

In addition: points were subtracted based on the variety of preferences across the interviews. If 7 specialties were mentioned 6 points were subtracted, if 6 were mentioned, 5 points were subtracted, etc. Because this could lead to -6 points, all scores were raised by 6. If the preferences were either all hospital or all non-hospital specialties 1 point was given. The total range is 0–22.

was voluntary, that confidentiality was secured and that non-participation would not be held against them. They could withdraw from the study at any time without giving a reason. The research proposal was approved by the Ethical Review Board of the Dutch Association for Medical Education (NERB #308) and included a larger study (Querido et al. 2019) to explore students' considerations in making a career choice. The focus of the current study is merely on career stability over time, but the interview study provided the data to explore this stability.

Participants' first and second career preferences at every interview were documented. Stability was defined as related to the final career preference in the 4th interview, often coinciding with a residency choice, i.e. as (a) the number of similar preferences seen in earlier interviews with (b) preference at interview 3 weighing more than at interview 2, which weighs more than the one at interview 1. If there was no second preference, we assumed a stronger preference. The career stability choice was calculated as shown in Box 1 ('3.1' designates third interview, preference 1; '3.2' designates preference 2). This calculation is a simple formula which shows the extent of the stability of career choice. The stronger the preference over time, the higher the total points and therefore the stability score.

Results

A total of 24 students participated in the first interview, the second interview series involved 22, the third interview series 20 and the fourth interview series involved 21 participants. We did not know the reasons for withdrawal by those students who failed to participate in the next interviews. Four participants were excluded from stability ranking, because they discontinued medicine after graduation or stopped participating in our study. Leaving 20 for stability calculations (4 male, 16 female) with a variety of pathways (Table 1).

The career preferences showed 24 specialties across the interviews and 12 at the final interview. Seven participants had the same first preference during all interviews, most of whom did not seriously consider many other options. Others show much more unstable pathways. We grouped the 20 subjects in three categories: scores 0–7 (traveling

Table 1. First and second specialty preferences at the four interviews.

Subject	1.1	1.2	2.1	2.2	3.1	3.2	4	Resident at interview 4	Stability score
Traveling the highway (15–22)									
S1	A		A		A		A	Yes	22
S2	F			S	F		F	No	18
S3	W	T	T	Y	T		T	Yes	17
S4	F	C	F	S	F		F	Yes	17
S5	D	S	D	S	D	S	D	Yes	17
S6	N	S	N	S	N	S	N	Yes	17
S7	B	S	B	E	B	S	B	No	16
S8	C	A	C	A	A		A	No	16
Traveling the country road (8–14)									
S9	L	S	V	S	S	V	S	Yes	14
S10	K	O	S	O	K	S	K	Yes	12
S11	U	V	V	U	*		V	Yes	12
S12	S	O	S		E		E	Yes	10
S13	S	E	S	E	V	S	V	Yes	9
S14	S	I	S	I	V	S	V	Yes	9
S15	S	J	S		S	V	V	Yes	8
S16	M	C	*		M	T	T	Yes	8
S17	S	D	S		S	V	V	Yes	8
S18	F	C	X	F	*		X	Yes	8
Traveling the winding road (0–7)									
S19	R	S	S	R	S	R	U	Yes	5
S20	F	S	F	P	G	F	A	No	2

Hospital-based specialties: A: Anesthesiology; B: Cardiology; C: General surgery; D: Dermatology; E: Geriatrics; F: Gynaecology; G: Intensive care; H: Internal medicine; I: Pediatrics; J: Otorhinolaryngology; K: Neurology; L: Ophthalmology; M: Orthopedics; N: Plastic surgery; O: Rehabilitation medicine; P: Emergency medicine; Q: Trauma surgery.

Non-hospital-based specialties: R: Physician for the mentally retarded; S: Family medicine; T: Military medicine; U: Elderly care medicine; V: Psychiatry; W: Sports medicine; X: Tropical medicine.

Y: Miscellaneous other; *No interview.

Interview 1: beginning of final study year.

Interview 2: end of final study year.

Interview 3: 1 year after graduation.

Interview 4: 2, 5 years after graduation.

'winding roads'), 8–14 (traveling 'country roads') and 15–22 (traveling 'highways').

Discussion

Asking career preferences four times provided insight into the variety in career preference paths and its stability. 'Traveling the highway' characterizes medical students who are quite stable in their career preference and already started residency in this direction, or perform research to require a PhD degree and still have the same career preference. 'Traveling the country road' were students considering two or three serious options and traveling the 'winding road' were students who did not end with the various, mainly first, career preferences earlier considered. The studies by Woolf et al. (2015) and Goldenberg et al. (2017) focused on the accordance of first career preference with residency choice. We also included second preferences and asked these multiple times, providing us with a more realistic insight into stability of preference. A stable career path can benefit a student, as a stable curriculum vitae may impress at a residency application. However, many specialties are not very visible during undergraduate medical education. Half of the students showing a 'country road' and all students, except one, showing a 'winding road' behavior chose a residency that is not experienced in early undergraduate education (such as psychiatry, Elderly care medicine, tropical or military medicine). Our interview study concluded, that experiencing clinical responsibility as a student or a junior physician not yet in residency

training appears to be important for career preference (Querido et al. 2019). This forces trainees to reflect on personal needs and to consider which career fits best. Individuals with a ‘highway’ path usually had experience within their specialty preferences during medical school and they used the period with real clinical responsibility as a conformation to make their choice. While for those with a ‘country road’ or ‘winding road’ the clinical experience after graduation was likely used to explore a variation of specialty options.

Our small sample is an important limitation of this study. The sample has an over-representation of females, with no males in the ‘winding road’ group. This should be considered by interpreting the results, as females are influenced by other factors in their career choices than males (Heikkilä et al. 2015). We can only recommend to repeat the study with a large sample. This study provides a first longitudinal insight. Future research may consider starting earlier during medical school.

Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the article.

Glossary

Stability of career choice: Students specialty career interest to remain unchanged over time.

<http://www.businessdictionary.com/definition/stability.html>

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