Impact of Parental Status on Medical Student Specialty Selection

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Abstract

Background: Medical training occurs during peak childbearing years for most medical students. Many factors influence specialty selection. The aim of this study was to determine whether being a parent affects specialty choice among United States medical students in 2020.

Methods: The authors performed a multicenter web-based survey study of medical students enrolled in Oregon Health and Science University, Dartmouth's Geisel School of Medicine, and University of Michigan Medical School. The 22-item instrument assessed parenthood status, specialty preference, specialty perceptions, and factors influencing specialty choice.

Results: 537 out of 2236 (24.0%) students responded. Among respondents, 59 (10.9%) were current or expecting parents. The majority (359, 66.8%) were female and 24-35 years old (430, 80.1%). Of the students who were parents or expecting, 30 (50.9%) were female, and the majority (55, 93.2%) were partnered. Top specialties preferred by both groups were family medicine, emergency medicine, obstetrics and gynecology (OB/GYN), internal medicine, psychiatry, and pediatrics. Specialties rated most family-friendly included family medicine, dermatology, pediatrics, psychiatry, radiology, emergency medicine and pathology. The specialties rated least family-friendly were surgery, neurosurgery, orthopedic surgery, plastic surgery, and OB/GYN. These rankings were the same between groups. Passion for the field, culture of the specialty, and quality of life were the top three factors students considered when choosing a specialty. Being a parent or future parent ranked more highly for parents than non-parents, but was not in the top three factors for either group.

Conclusions: Parental status did not affect specialty choices of medical students. While being a parent was considered more heavily by current student parents than non-parents, this was not weighed as heavily as passion for the field, culture of the specialty and quality of life. Medical school training and simultaneous parenting is daunting, yet student parents are putting their passion first when making a career choice.

Background:

Medical specialty choice is a complex and important decision for medical students, and is influenced by a multitude of factors. Many students begin medical school with a career plan, but this often changes throughout the course of their education.¹ Factors previously shown to factor into this decision include passion for the field, mentorship, debt burden, altruistic preferences, perception of work-life balance, and gender.¹⁻³ There are some clear perceived differences in workload among various specialties, which also factor into students' decisions. Surgical specialties are considered more difficult with more work hours, whereas specialties such as family medicine are perceived to offer a more balanced family-friendly lifestyle.⁴⁻⁵

Furthermore, medical school occurs during peak childbearing years for many students. The issue of being a parent in medical school grows more pressing as women now account for half of all medical students,

and training for many specialties can continue into the fourth decade of life.⁶ Prior to 1950, only 24% of physician mothers had their children during training; by 1989 the number was up to 42%.⁶ Despite this fact, the impact that being a parent has on specialty choice has not been adequately studied.

We hypothesized that parental status during medical school is a major factor in deciding which specialty to pursue. A secondary hypothesis is that medical students who are parents are more drawn to family-friendly specialties compared to their non-parent counterparts. This study aims to determine whether parental status of a medical student affects specialty choice, and how factors influencing specialty choice differ between parents and non-parents.

Methods:

This study is a multicenter survey of current 1st through 4th year medical students at Oregon Health and Science University (OHSU), University of Michigan Medical School, and the Geisel School of Medicine at Dartmouth conducted in the 2019-2020 school year.

Survey development:

We designed a 19-question web-based survey in Qualtrics (Qualtrics, Provo UT) (**Supplemental Digital Appendix 1**) that included demographics, parental status, anticipated choice of medical specialty, perception of various specialties, and factors influencing specialty choice ranked on a Likert scale of 0 (least important) to 5 (most important). Online resources such as the Association of American Medical Colleges website were used to ensure completeness in the list of specialty choices. The survey instrument was pilot tested by five medical students at each school (N=15 total) for clarity of language and readability. Based on their feedback, minor changes were made to the survey. The survey did not collect any identifying information. This study was approved by the Institutional Review Board of OHSU on March 25th, 2020.

Participants:

In May and June 2020, all current medical students at each of the three medical schools were invited to participate in the survey by e-mail. A second invitation was sent two weeks after the first, and a reminder email was sent four weeks after the second invitation.

Statistical methods:

All data was collected anonymously and aggregated from the three schools. Data was stratified by gender, parental status, school, and year in medical school. Categorical variables were reported as proportions and continuous variables as means with standard deviations. Data from students who were expecting a child were aggregated with students who were current parents for analyses (termed “parents”). To test differences between parents and non-parents, Student’s T-tests were used to assess for differences between continuous variables and Chi-squared test was used for categorical variables.

Statistical analyses were performed using StataMP v14.1.412 (StataCorp LLC, College Station, TX) and Prism GraphPad v 9.1.1 (GraphPad Software, San Diego, CA).

Subgroup analyses:

We performed additional subgroup analyses comparing female medical student parents to their male counterparts. We used the Student's T-tests and Chi-squared tests to assess differences between these two groups on anticipated specialty choice, factors influencing specialty choice, and how much being a parent affected their decisions.

Results:

Demographics

Of the 2,236 medical students surveyed, 537 (24.0%) responded; 258 (32.9%) were from OHSU, 153 (23.5%) from Dartmouth, and 126 (28.5%) from University of Michigan (Table 1). The majority were female (66.9%, n=359) and aged 24-35 (80.1%, n=430). Overall, 59 (10.9%) students were parents. Of the students who were parents, 30 (50.9%) were female and 29 (49.2%) had one child, 16 (27.1%) had two children, and three (5.1%) had three or more children.

Table 1
Demographics of medical students surveyed.

	All students (n=537)	OHSU (n=258)	Dartmouth (n=153)	Michigan (n=126)	P- value
Parental status					
Parent	8.8% (47)	8.9% (23)	7.8% (12)	9.5% (12)	0.94
Expecting	2.2% (12)	2.7% (7)	2.0% (3)	1.6% (2)	
Non-parent	89.0% (478)	88.4% (228)	90.2% (138)	89.0% (112)	
Gender					
Female	66.9% (359)	70.9% (183)	61.4% (94)	65.1% (82)	0.142
Male	32.4% (174)	28.3% (73)	38.6% (59)	33.3% (42)	
Non-binary	0.7% (4)	0.77% (2)	0% (0)	1.6% (2)	
Year in medical school					
MS1	24.9% (134)	26.7% (69)	18.9% (29)	28.6% (36)	<0.001
MS2	24.0% (129)	27.5% (71)	18.3% (28)	23.8% (30)	
MS3	19.4% (104)	23.6% (61)	26.1% (40)	2.4% (3)	
MS4	25.7% (138)	17.4% (45)	32.0% (49)	34.9% (13)	
Age(years)					
18-24	16.2% (87)	12.8% (33)	11.8% (18)	28.6% (36)	<0.001
25-34	80.1% (430)	83.3% (215)	81.7% (125)	71.4% (90)	
35-44	3.4% (18)	3.5% (9)	5.9% (9)	0% (0)	
45-54	0.4% (2)	0.4% (1)	0.7% (1)	0% (0)	

Parent specific demographics

Of the 59 respondents who were parents, 55 (93.2%) reported having a partner with whom they share child-rearing duties. Among the partnered parents, 44 (78.6%) stated that their partner was employed, eight (14.3%) responded that their partner was not employed, and four (7.1%) responded that their partner was also a student. Six (12.6%) respondents reported that their partner was either a physician or physician-in-training.

More student parents reported that they planned for additional children during medical school compared to non-parents (61.0%, n=36 vs 8.6%, n=4, $p \leq 0.001$). Half of parents and non-parents reported planning for children or additional children before completion of residency (52.2% and 52.9% respectively).

Anticipated specialty choice

Emergency medicine, internal medicine, obstetrics and gynecology (OB/GYN) and family medicine were in the top five specialty choices for both parents and non-parents. (Figures 1 and 2). Parents most frequently chose emergency medicine, while non-parents most commonly chose internal medicine. There was no statistically significant difference between the top 5 specialties chosen by each group ($p=0.19$).

Specialty perception

Parents selected family medicine (52.5%, n=31), dermatology (50.8%, n=30), psychiatry (38.9%, n=23), emergency medicine (37.2%, n=22), and pediatrics (37.2%, n=22) as the most “family-friendly” specialties. Non-parents had similar rankings, with family medicine (64.0%, n=306), dermatology (54.2%, n=259), pediatrics (44.4%, n=212) and psychiatry (38.3%, n=183) as the top most family friendly specialties along with pathology (27.0%, n=129). Surgery, neurosurgery, orthopedic surgery, plastic surgery, and OB/GYN were perceived as the five least “family-friendly” specialties by both parents and non-parents.

Factors influencing specialty choice

The top three factors influencing specialty choice for parents and non-parents were passion for the field, culture of the specialty, and quality of life. Table 2 lists the top three factors for students in both groups. Being a parent or future parent was more important to parents with a mean of 3.9 (+/- SD 1.2) than non-student parents (2.9 +/- 1.5) ($p < 0.001$). Length and intensity of training were also more important to parents (3.5 +/- 1.1) than non-parents (2.8 +/- 1.3) ($p < 0.001$), as was partner’s choice of employment (2.4 +/- 1.8, parents vs 1.7 +/- 1.5, non-parents, $p < 0.001$).

Table 2

Factors that influence specialty choice by parental status, Likert scale 0-5 (5 is most important).

	Parents mean (SD)	Non-Parents mean (SD)	P-value
Passion for the field	4.59 (0.67)	4.61 (0.64)	0.82
Culture of the specialty	4.25 (0.88)	4.27 (0.83)	0.86
Quality of life	4.19 (0.98)	4.02 (1.01)	0.49
Being a parent or future parent	3.91 (1.21)	2.92 (1.45)	<0.001
My experience/ exposure to that field	3.66 (1.20)	3.71 (0.99)	0.72
Length/ Intensity of training	3.46 (1.14)	2.83 (1.25)	<0.001
Compensation potential	2.72 (1.32)	2.7 (1.19)	0.90
Partner's choice of employment	2.42 (1.76)	1.66 (1.48)	<0.001
Competitiveness of the specialty	2.09 (1.31)	2.0 (1.29)	0.61
Opportunity for non-clinical work	1.90 (1.43)	2.15 (1.49)	0.22
Research opportunity	1.88 (1.62)	2.1 (1.52)	0.30
Family members in field	0.67 (1.55)	0.58 (1.15)	0.59
Mean Likert scale 1-5			
SD= standard deviation			

When asked specifically how much currently having a child influenced specialty selection, 49.2% (n=29) of parents responded “strongly” or “very strongly” compared to 16.5% (n=79) of non-parents ($p<0.001$). Only 6.8% (n=4) of parents responded “not at all” compared to 25.7% (n=123) of non-parents ($p<0.001$). Top factors that would change students’ minds when considering his/her/their specialty included call schedule beyond training, work flexibility during training, length of training, and experience with specific providers during rotations. These factors were the same for both groups ($p=0.66$).

Subgroup analysis

In our subgroup analysis, female parents most commonly planned to pursue OB/GYN (n=10, 33.3%) and internal medicine (n=4, 13.3%) while male parents chose emergency medicine (n=8, 28.6%) and internal medicine (n=5, 17.9%) ($p<0.05$). There was no statistically significant difference in how much being a parent affected specialty choice between the two groups ($p=0.32$).

Discussion:

One of the most important decisions in medical training is the selection of a medical specialty. Factors such as passion for the field, mentorship, and work-life balance are all shown to play a role.¹⁻³ Parenthood and pregnancy pose unique challenges that affect the medical school experience and specialty choice. As the medical student population diversifies and the number of women in the field continues to expand, understanding the needs of student parents becomes increasingly important. In this multicenter survey study of over 500 current medical students, we found that not only are there a sizeable number of medical student parents, but they are also choosing similar specialties for similar reasons as their non-parent peers.

We found that 10.9% of respondents were parents, significantly more than what has been previously reported in other studies.⁷ While increasing with time, parents still represent a minority of medical students. This may be due to intentional delays in childbearing by medical students. In a 2016 Journal of Women's Health survey of female physicians, those whose first pregnancy occurred during medical school felt much less supported than those who waited to have children until after residency.⁸ In fact, studies show that women in medical training have their first child 5-7 years later than the average population.^{7,8} This delay of childbearing is not without consequences. Nearly one quarter of female physicians who attempted to conceive later in life were formally diagnosed with infertility.⁸

This study found that students consistently ranked surgery and surgical sub-specialties as least friendly. There have been many studies showing the difficulties of balancing family life and a surgical career. A 2018 study found that 29.5% of female surgeons said they would discourage female medical students from pursuing a career in surgery due to the difficulties of balancing pregnancy and motherhood with training.⁹ One reason may be a lack of parental leave in the field. A 2009 survey study found that 42% of both male and female surgical residents took less than two weeks of parental leave.¹⁰ Yet the American Academy of Pediatrics (AAP) recommends a parental leave of at least six weeks.¹¹ In contrast to surgical fields, both the AAP and the American Academy of Family Physicians (AAFP) have detailed and specific family leave policies for physicians in training.¹² The AAFP even includes highly specific guidelines for paternity leave.¹² Instituting formal parental leave policies and addressing concerns of excess workload and long work hours would create a more supportive culture for parents in training.

While parenthood may provide unique perspectives to medical training, we found that parents and non-parents did not significantly differ in their top choices for anticipated specialty or factors influencing their choices. Passion for the field was cited as the most important factor for specialty selection. This is supported by our finding that the most popular anticipated specialties for students included ones which were perceived as least family friendly. For example, one-third of the female parents surveyed planned to pursue OB/GYN despite listing it as one of the least family-friendly specialties, underscoring the emphasis students place on passion for the field over other factors.

However, parents did weigh having a family, length and intensity of training, and their partner's choice of employment more heavily than their non-parent peers. Although parents are choosing specialties that

they are passionate about despite the difficulties they may face, burnout among physician-parents is high, largely in part due to work-family conflict.^{13,14} As medicine continues to strive for more inclusivity and diversity, we must support student parents in striving for careers they are passionate about, and implement policies that will prevent burnout and attrition.

It is imperative to acknowledge and support medical student parents. The skills that new parents learn in the early years of their children's lives are recognized to improve student-parent's efficiency, interpersonal relationships, and enhance health education.^{15,16} Medical school is demanding and parenting is a full-time responsibility, so ensuring the success of these individuals requires special considerations. Standardized family leave policies, on-site childcare, increased part-time training options, back-up childcare for sick children, and preference of choice for clerkship placements have all been set forth as ways to support student-parents.^{6,15,17}

This study has several limitations. First, there may be a selection bias toward student parents. Eleven percent of study respondents were student parents, whereas other studies report percentages of student-parents as low as two percent, though this may also represent changes in student demographics.⁷ Additionally, our response rate of 24.0% falls below the 60.0% response goals to ameliorate non-response bias.¹⁸ To account for this fact, we surveyed students across a broad geographic range. To further mitigate bias, questions regarding parenthood and specialty choice were asked in several different ways throughout the survey. It is also important to note that medical students often change their minds when considering what specialty to pursue, and as this was a cross-sectional study, we did not re-survey medical students to confirm if they entered their anticipated specialties. Future efforts to characterize the longitudinal effect of parenthood on medical training would greatly complement this study.

Overall, the field of medicine is changing, with a growing number of female students and a growing number of students having children during medical school. Although there are a myriad of different factors that student parents weigh when considering a specialty, the passion for their field ultimately drives the decision. Meeting the unique needs of these students will allow them to pursue their passions and create a more diverse physician workforce.

Conclusion:

In conclusion, there is an increasing number of medical students who are parents. Although parents and non-parents still selected specialties based largely on their passion for the field, student parents also consider unique factors such as the ability to be a parent or future parent, length and intensity of training, and partner's employment. It is important that all specialties create an environment and culture that allows student parents to thrive.

List Of Abbreviations:

OHSU- Oregon Health and Science University

OB/GYN- obstetrics and gynecology

AAP- American Academy of Pediatrics

AAFP- American Academy of Family Physicians

Declarations:

Ethics Approval and Consent to Participate:

This study was approved by the Institutional Review Board of Oregon Health and Science University on March 25th, 2020. Informed consent implied via participation in anonymous survey

Consent to publish:

not applicable

Competing interests:

none

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none

Authors' contributions:

1. GMM created the idea for the study, wrote the survey, administered it at OHSU and wrote the manuscript.
2. BLDC helped with survey design, administered survey at her institution, and was involved in the manuscript editing process.
3. RG helped with survey design and editing of the manuscript.
4. AHC helped with survey design, edited the manuscript, and assisted with subgroup analyses.
5. ARS helped with survey design and editing of the manuscript.
6. BE helped with project development, writing of the survey, created the tables and figures, and extensively edited the manuscript.
7. JXY helped with project development, writing of the survey, statistical analyses, extensively edited several drafts of the manuscript.

All authors have read and approved the manuscript.

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Availability of data and materials:

The datasets used and analyzed during the current study are available from the corresponding author upon request. We are not uploading them publicly at this time in the interest of participant anonymity.

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Figures

Figure 1

Non-parent top 5 specialty preferences.

Figure 2

Parent top 5 specialty preferences.

Supplementary Files

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