

Primary Care Attitudes & Culture at the University of Arizona
College of Medicine-Phoenix

A thesis submitted to the University of Arizona College of Medicine – Phoenix
in partial fulfillment of the requirements for the Degree of Doctor of Medicine

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Class of 2021

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Title: Primary Care Attitudes & Culture at the University of Arizona College of Medicine - Phoenix

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Word Count: (including abstract and references) – 3000 word limit

Abstract

Introduction. There has been prior research that indicate perceptions held by medical students regarding the field of primary care in medicine can change over time, whether through direct intervention or naturally as a consequence of a medical school's curriculum. However, the currently held beliefs of medical students and faculty at the University of Arizona College of Medicine – Phoenix (UACOM-P) is unknown.

Methods. A cross-sectional study was performed to assess attitudes and beliefs held by members of the UACOM-P community regarding the field of primary care. A Qualtrics survey instrument was developed and distributed to medical students and faculty at UACOM-P in the summer of 2019, with responses from 75 medical students and 33 faculty members.

Results. Analysis indicate that there is a generally positive view held by the study population towards primary care, though the strength of endorsement of certain aspects differed between medical students and faculty. There also appeared to be differences between subgroups under both populations, such as Certificate of Distinction versus dual degree students and physician versus non-physician faculty.

Discussion. The UACOM-P community has an overall positive attitude toward the field of primary care, with notable differences in some cases. Follow-up studies that may come after this investigation must capture more of the target population and consider impacts of global events such as the COVID-19 pandemic in order to negate potential confounding factors and biases. Future, well designed longitudinal research that assesses how these beliefs change overtime can shed more light on the primary care culture at UACOM-P and can inform campus leadership on future directions to take to support the mission of the program.

Introduction

Primary care, as defined by the University of Arizona College of Medicine – Phoenix (UACOM-P) Department of Family and Community Medicine, encompasses the specialties of Family Medicine, Internal Medicine, and Pediatrics. Promoting primary care practice has been one of the central goals of the UACOM-P community, with hopes that medical students will enter into the field prepared, ready, and inspired to serve the public. As such, longitudinal elements of the UACOM-P curriculum including the Continuous Clinical Experience in the first and second years of medical school, Capstone shadowing opportunities, inviting several lecturers who practice in primary care, and strong ties to community organizations for volunteer and clerkship/rotation opportunities, all integrate elements of primary care to bolster student experiences. However, there have not been any prior studies to assess how primary care is viewed by current medical students or faculty at UACOM-P.

Presently, undergraduate students have a negative view of primary care, who cite financial factors, lack of popularity, and disinterest as primary drivers.¹ However, prior work has shown that attitudes towards primary care specialties (and others) can be changed in medical student populations. An educational intervention utilizing a week long course regarding primary care was found to have greatly improved perception of primary care, assessed using a pre-event and post-event survey instrument.² This type of study was also done on a short intervention at an international conference for medical students, where a Likert scale style survey was used to assess participants' perceptions of psychiatry before and after 2 short lectures, with a noted improvement in views afterwards.³

Other research has found that perceptions can change over time even without intervention. A study assessing views of primary care in one class at the University of Geneva found that despite

a poorer image of the field emerging over time, there was an overall increased interest.⁴

Investigation of an Iranian medical student population found that there was a small increase of those interested in psychiatry and a limited improvement of views on the field after completing the requisite clerkship.⁵

These, and other, studies utilized surveys to assess views and beliefs as a central part of the research. A survey instrument was utilized in assessing primary care perceptions held by a fifth year Swiss medical student class and how it was shaped by their primary care specific curriculum, which was found to shape positive views of the field.⁶ Research on factors that drove Canadian medical students' decision to choose or avoid primary care specialties was conducted using a survey, and found that factors relating to lifestyle and the physician-patient relationship drove students towards primary care, and were detracted by factors relating to style of practice, income, and status.⁷ While these studies have identified interesting drivers that can influence how one might perceive primary care, it is unknown how this manifests in the UACOM-P community, how students as well as faculty view the field, and if there are any differences between the two groups.

The purpose of this study is to identify what beliefs, attitudes, and perceptions members of the UACOM-P community have towards the practice and role of primary care. This investigation utilizes an internally validated survey tool developed by the study investigators to identify the present perceptions held by UACOM-P students and faculty, as well as any potential differences between students and faculty as well as key sub-groups in both categories. Originally, this was intended to be a prospective study with a repeat administration of the same survey instrument between December 2020 and January 2021, but due to constraints stemming from changes in the

Scholarly Projects curricular timeline as well as the COVID-19 pandemic, this study was converted to a cross-sectional investigation.

Methods

Study investigators completed a cross-sectional study of UACOM-P faculty and students between April and June 2019. An initial slate of questions were developed and distributed via Qualtrics to members of the Department of Family and Community Medicine within UACOM-P in Fall 2018, with 32 responses returned. Data derived from this initial group were then utilized in determining internal consistency as well as strength of association for survey questions via Cronbach's Alpha and Spearman's Rho assessments, respectively. Grouped survey questions that were found to be redundant through Spearman's Rho analyses were pared down, and a repeat assessment with Cronbach's Alpha was done to verify that the survey instrument was still internally consistent. This information, along with feedback from participants utilizing a short second survey, was used in developing the final survey.

After developing the finalized survey within Qualtrics, a link to the instrument, along with a message explaining the goals and objectives of the study, were sent via email listservs to all enrolled students and faculty at UACOM-P in April 2019, with reminder emails to complete the survey sent in May and June 2019. It is estimated that the survey instrument was distributed to 330 students (encompassing all cohorts of medical students as well as the then-present Pathways Scholars class) and 1,671 faculty members. Inclusion criteria limited the study to students and faculty who provided their consent to participating in the study by clicking "continue" after the informed consent section in the Qualtrics survey. Exclusion criteria included those who did not complete the survey, as well as those who did not affiliate with UACOM-P as a student or as a faculty member. As this instrument, associated data, and conclusions drawn from this study is

limited to internal use in the College of Medicine, this study's authors were not asked to complete an IRB form.

Recruitment for the study was done via the email invitation to participate in the study sent in April, May, and June 2019. All students and faculty were invited to take part in the investigation through an emailed link to a secured Qualtrics generated survey. Consent was obtained at the beginning of the survey. After consent was obtained, demographic information, including type of affiliation with UACOM-P (student or faculty), additional curricular programs, and highest level of education, was solicited. Then, the instrument, consisting of 19 Likert scale 5 option questions (with 1 representing strongly disagree, and 5 representing strongly agree) and one free response question asking "What are the core primary care specialties?" was administered to participants. All data were deidentified, and each study volunteer was asked to input an anonymized identifier utilizing the last two letters of their maiden name and the last two numbers of their year of birth. Data derived from the survey was stored in Qualtrics and only accessible to the study investigators.

Survey participants, demographic information, and the number of participants who correctly identified primary care specialties were reported as counts and percentages for the various categorical variables included in the instrument. For this survey, participants who identified as a student were further categorized by what year they would expect to graduate, whether or not they were a member of a Certificate of Distinction, a dual degree program, or the Pathway Scholars Program, and if so, which program they were a part of. Faculty were asked to identify their home department, highest level of education, amount of time spent on medical student education per week, any hospital affiliations, and what curricular groups they were a part of.

Indicators of program culture and attitudes held by participants regarding primary care assessed by the survey tool were reported as means and standard deviations. Significant differences in scores between students and faculty, as well as between different sub-categories in those two groups, were identified through use of the two sample t-test. All p-values were two sided, and $p < 0.05$ was considered statistically significant. All data analyses were conducted using Stata v 15 (College Station, Texas)

Results

There were a total of 108 participants in this cross-sectional study, including 75 students (response rate of 22.72%) from different classes and 33 faculty members (response rate of 1.97%). Further information of participant characteristics can be found in Table 1.

The mean score for each element in the survey ranged from 2.16 to 4.84 with all responses aggregated together as seen in Table 2. Table 3 separates mean values for student respondents and faculty respondents, along with p-values. In this comparison, there were statistically significant differences in some means.

For the item “patients respect primary care physicians more than other specialties”, student mean response on the Likert scale was 2.52 (SD 0.64) whereas faculty mean score was 2.87 (SD 0.78).

In response to the item “The lifestyle afforded by a career in primary care is better suited to physicians who prioritize family life more highly”, student response mean was 3.72 (SD 0.83) compared to the faculty response mean of 3.09 (SD 0.77). Responses to the survey question of “one of the main roles of a primary care physician is to refer to other specialties” found student mean score of 2.76 (SD 1.06) and faculty mean score of 2.09 (SD 1.04). The statement “our institution does enough to promote primary care” had a student mean response of 3.51 (SD 0.89) and a faculty mean response of 2.75 (SD 0.96). Lastly, the statement of “primary care physicians

provide high quality teaching to medical students” drew a student mean score of 4.56 (SD 0.55) and a faculty mean score of 4.15 (SD 0.90).

In addition to this, of the surveyed participants, it was found that only 43 (39.8%) correctly identified the primary care specialties (defined as Family Medicine, Internal Medicine, and Pediatrics per the Department of Family and Community Medicine). When the comparison is done between those who have correctly identified these specialties and those who did not, there is only one statistically significant difference in means. For the item “I’ve heard more negative comments about primary care specialties than other specialties”, those who incorrectly identified the primary care specialties had a mean score of 2.83 (SD 1.19) whereas those who were correct had a mean score of 3.65 (SD 1.03).

Regarding differences between sub-groups of students, there was only one significant finding. In reference to the item “One of the main roles of a primary care physician is to refer to other specialties”, Certificate of Distinction students had a mean score of 3.05 (SD 0.97) whereas dual degree students had a mean of 2.25 (SD 0.96).

There were also significant differences when comparing MD/DO faculty to PhD/Other faculty. The statement “There is a need for primary care physicians” found a physician mean score of 4.82 (SD 0.41), and a non-physician mean of 4.92 (SD 0.26). The item “Primary care doctors contribute substantially to advancing medical knowledge” found a physician mean score of 4.09 (SD 0.84), compared to a non-physician score of 4.28 (SD 0.85). The phrase “Primary care physicians solve challenging diagnostic cases” had a physician average score of 4.13 (SD 0.79) and a non-physician average of 4.21 (SD 0.99). Scores for “Primary care doctors spend the majority of their time diagnosing simple, acute conditions” had a physician mean of 3.11 (SD 0.95) and a non-physician mean of 2.75 (SD 1.20). The item “Primary care doctors make

significantly less money than other specialists” led to a mean physician score of 4.17 (SD 0.70) and a mean non-physician score of 4.28 (SD 0.53). The statement “Our institution should promote primary care” had a 4.24 (SD 0.85) average physician score and a 4.71 (SD 0.46) average non-physician score. Lastly, the phrase “Primary care physicians are more likely to be sued than physicians in other specialties” led to a mean physician score of 2.20 (SD 0.77) and a mean non-physician score of 1.92 (SD 0.72).

There were no significant differences when comparing different student class years or comparing those who were doing a Certificate of Distinction or dual degree to those who were not. There were no statistically significant findings identified when comparing those whose student involvement was listed as “other” to those identified as administration or leadership, to those involved in capstones, to those working with Scholarly Projects, or to those organizing the Personalized Active Learning block. Details on further statistically significant comparisons of faculty subgroups are available in Table 4, but are not detailed here.

Discussion

This study sought to identify perceptions, beliefs, and attitudes held by UACOM-P students and faculty regarding primary care. This is the very first investigation into what the campus believes about primary care as well as noted differences between students and faculty. There are also some findings suggesting some differences based on curricular courses done in tandem with the core medical school education, as well as whether faculty are involved in medicine as a physician or not. This study will form the basis for continuing work into assessing how these beliefs and ideas change over time for both students and faculty.

Overall, students appear to see primary care as a career suited for family life, but also that primary care is less respected by patients compared to faculty. Students more strongly endorse

the idea that the program promotes primary care well and that primary care physicians provide high quality education compared to faculty. Faculty appears to disagree with the notion that a primary care physician primarily refers to other specialties more so than students, but amongst students, COD participants appear more neutral while dual degree students disagree.

Those who identified primary care specialties correctly more strongly agrees with the idea that there is more negativity directed towards primary care compared to those who did not.

In comparing physician faculty members to non-physician faculty members, it appears that the non-physician faculty are greater proponents of various aspects of primary care as they apply to the institution, risk of litigation, and the space that primary care holds in education and in service to the community when compared to physicians who participated. In all, it appears that many of the students and faculty at UACOM-P generally respect and endorse the value of primary care, with some notable differences in certain aspects.

This study and its results, while as a whole show a generally positive view of primary care and its impact on education and the community, is limited by the fact that this was a cross-section of ideas and beliefs of the students and faculty at a single point in time during the summer of 2019.

As such, further conclusions beyond what the data bear out would be unsupportable without further, longitudinal investigations into these beliefs. This study is also limited by the fact that when assessing certain subgroups of students and faculty, there were relatively fewer participants which may weaken the conclusions drawn from those associated comparisons. In addition, the risk of selection bias exists, as those who decided to take part in this survey may have been those who are more willing to and have more positive views of primary care when compared to the full student and faculty body. Future investigations should attempt to capture more of the study population in order to bolster numbers and reduce the presence of selection bias. Future studies

on this topic should also be longitudinal in nature, capturing members of the study population at various points throughout the years while delineating important curricular changes and world events that take place that may influence the results. Given that this study was done in 2019, it is currently unknown how the COVID-19 pandemic, whether through curricular changes, impact on healthcare as a whole, or through personal experience, has impacted participants' beliefs about primary care, if at all. Awareness of these possibilities will be valuable in crafting future investigations relating to how members of the campus view primary care.

In all, this study identified that, overall, there are generally positive views held by students and faculty at UACOM-P. While some differences were noted, this lays the groundwork for future studies to see how these beliefs may change overtime, and whether significant differences between students and faculty, as well as sub-groups in both categories, change. With longer term research, this knowledge can provide campus leadership with valuable information in efforts to better promote primary care and train the future clinical leaders of Arizona and beyond.

Acknowledgements

The study authors would like to acknowledge the help of the Department of Family and Community Medicine for their support through the process of validating and providing feedback on early stages of the survey utilized in this study. Additionally, the study authors would like to thank the faculty and students at the University of Arizona College of Medicine – Phoenix for providing their thoughts and views on primary care as part of this research.

Disclosures

The study authors have no conflicts of interest to make.

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Table 1. Participant Characteristics

Participant Characteristics	Value
Group (n, %)(n=108)	
Student	75 (69.4)
Faculty	33 (30.6)
Student Class (n, %) (n=75)	
2019	18 (24.0)
2020	23 (30.7)
2021	18 (24.0)
2022	15 (20.0)
2023	1 (1.33)
Are you currently participating or enrolled the Pathways Scholar Program, a Certificate of Distinction or Dual Degree program? (yes, %) (n=75)	31 (41.3)
Which program are you participating/enrolled in? (n, %)(n=31)	
COD	19 (61.3)
Dual Degree	12 (38.7)
Faculty Department (n, %)(n=33)	
Biomedical Sciences (BMS)	3 (9.38)
Child Health	2 (6.25)
Emergency Medicine (EM)	2(6.25)
Family and Community Medicine (FCM)	8 (25.0)
Medicine	10 (31.3)
OB/GYN	2 (6.25)
Pathology	1 (3.13)
Psychiatry	2 (6.25)
Surgery	2 (6.25)
Faculty Degree (n, %)(n=33)	
MD/DO	28 (84.9)
Phd/Other	5 (15.15)
In a typical week, how many hours do you spend on medical student education? (median, IQR)	8 (5, 18)
Faculty Involvement (n, %)(n=33)	
Admin / Leadership	13 (39.4)
Student Affairs	4 (12.1)
Clerkship	13 (39.4)
Block Director	6 (18.2)
CCE	5 (15.2)
Doctoring	7 (21.2)
Capstone	7 (21.2)
Transitions	7 (21.2)
Intersessions	8 (24.2)
Optional MD Curricula	6 (18.2)
Pathways	5 (15.2)
SP	12 (36.4)
Pal Block	3 (9.09)
CBI	5 (15.2)
Other	7 (21.2)
Hospital Affiliations (n, %)(n=33)	
None	17 (51.5)
Banner	8 (24.2)
MIHS	3 (9.09)
Honor Health	1 (3.03)
VA	1 (3.03)
Other	3 (9.09)
Primary care (correct, %)	43 (39.8)

Number of participants in the perceptions survey, broken down by various demographic differences including student vs. faculty, student graduation year, faculty affiliations, and faculty degree type, amongst other identifiers. Additionally, the percent of participants who correctly identified specialties considered primary care is listed at the bottom of the table.

Table 2. Overall Survey Results

Survey Statements	Mean (SD)
There is a need for primary care physicians.	4.84 (0.39)
Primary care doctors are essential for the optimization of health outcomes.	4.75 (0.54)
Primary care doctors contribute substantially to advancing medical knowledge.	4.11 (0.87)
Primary care physicians solve challenging diagnostic cases.	4.11 (0.87)
Primary care doctors spend the majority of their time diagnosing simple, acute conditions.	3.06 (1.04)
I've heard more negative comments about primary care specialties than other specialties.	3.16 (1.19)
Patients respect primary care physicians more than other specialties.	2.62 (0.71)
Primary care doctors make significantly less money than other specialists.	4.17 (0.70)
It is more difficult to achieve a healthy work life balance in primary care specialties.	2.17 (0.94)
The lifestyle afforded by a career in primary care is better suited to physicians who prioritize family life more highly.	3.52 (0.86)
One of the main roles of a primary care physician is to refer to other specialties.	2.56 (1.08)
Strong applicants from my medical school go into primary care.	3.35 (1.04)
Primary care training is less rigorous than most other specialties.	2.67 (1.01)
Trends in medicine favor the use of allied health clinicians (nurse practitioners, physician assistants, etc.) for delivery of primary care.	3.71 (0.84)
Our institution should promote primary care.	4.33 (0.81)
Our institution does enough to promote primary care.	3.27 (0.97)
Primary care physicians provide high quality teaching to medical students.	4.43 (0.70)
Primary care physicians are more likely to be sued than physicians in other specialties.	2.16 (0.76)
Primary care physicians are more prone to burn-out than other specialists.	2.75 (0.93)

List of all 19 items respondents were asked to rate on a 5 point Likert scale, with a value of 1 corresponding to “strongly disagree” and a value of 5 corresponding to “strongly agree”.

Table 3. Results Separated by Student vs. Faculty

Survey Statements	Student	Faculty	p-value
	Mean, SD	Mean, SD	
There is a need for primary care physicians.	4.82 (0.42)	4.87 (0.33)	0.58
Primary care doctors are essential for the optimization of health outcomes.	4.80 (0.46)	4.67 (0.69)	0.51
Primary care doctors contribute substantially to advancing medical knowledge.	4.09 (0.87)	4.15 (0.87)	0.78
Primary care physicians solve challenging diagnostic cases.	4.13 (0.79)	4.06 (1.03)	0.99
Primary care doctors spend the majority of their time diagnosing simple, acute conditions.	3.10 (0.95)	2.93 (1.22)	0.70
I've heard more negative comments about primary care specialties than other specialties.	3.23 (1.16)	3.00 (1.27)	0.41
Patients respect primary care physicians more than other specialties.	2.52 (0.64)	2.87 (0.78)	0.04
Primary care doctors make significantly less money than other specialists.	4.17 (0.70)	4.15 (0.71)	0.88
It is more difficult to achieve a healthy work life balance in primary care specialties.	2.08 (0.93)	2.39 (0.97)	0.11
The lifestyle afforded by a career in primary care is better suited to physicians who prioritize family life more highly.	3.72 (0.83)	3.09 (0.77)	<0.001
One of the main roles of a primary care physician is to refer to other specialties.	2.76 (1.06)	2.09 (1.04)	0.003
Strong applicants from my medical school go into primary care.	3.39 (1.03)	3.27 (1.07)	0.64
Primary care training is less rigorous than most other specialties.	2.80 (1.03)	2.39 (0.93)	0.06
Trends in medicine favor the use of allied health clinicians (nurse practitioners, physician assistants, etc.) for delivery of primary care.	3.68 (0.84)	3.78 (0.86)	0.41
Our institution should promote primary care.	4.24 (0.85)	4.54 (0.67)	0.08
Our institution does enough to promote primary care.	3.51 (0.89)	2.75 (0.96)	<0.001
Primary care physicians provide high quality teaching to medical students.	4.56 (0.55)	4.15 (0.90)	0.03
Primary care physicians are more likely to be sued than physicians in other specialties.	2.20 (0.77)	2.06 (0.74)	0.42
Primary care physicians are more prone to burn-out than other specialists.	2.69 (0.98)	2.90 (0.80)	0.19

Survey results separated out to compare student and faculty mean scores. Statistically significant differences in mean Likert score are identified by highlighted p-values, each of which are ≤ 0.05 .

Table 4. Additional Statistically Significant Differences – Faculty Subgroups

Variables	Other Mean, SD	Student Affairs Mean, SD	p-value
Primary care doctors make significantly less money than other specialists.	4.06 (0.70)	4.75 (0.50)	0.049
	Other	Block Director	
Our institution should promote primary care.	4.44 (0.69)	5 (0.0)	0.04
Our institution does enough to promote primary care.	2.92 (0.96)	2.00 (0.63)	0.02
	Other	CCE	
It is more difficult to achieve a healthy work life balance in primary care specialties.	2.21 (0.91)	3.40 (0.54)	0.005
	Other	Doctoring	
Trends in medicine favor the use of allied health clinicians (nurse practitioners, physician assistants, etc.) for delivery of primary care.	3.65 (0.89)	4.28 (0.49)	0.05
	Other	Transitions	
Primary care doctors spend the majority of their time diagnosing simple, acute conditions.	2.73 (1.25)	3.71 (0.76)	0.04
	Other	Intersessions	
Our institution should promote primary care.	4.40 (0.71)	5.0 (0.0)	0.02
	Other	Pathways	
Primary care doctors are essential for the optimization of health outcomes.	4.82 (0.48)	3.80 (1.09)	0.01
	Other	CBI	
Primary care doctors spend the majority of their time diagnosing simple, acute conditions.	2.75 (1.24)	4.0 (0.0)	0.03
One of the main roles of a primary care physician is to refer to other specialties.	1.92 (0.97)	3.0 (1.0)	0.04

Significant differences between mean scores when comparing “other” designated faculty to listed educational entities.