JRMC Journal of Regional Medical Campuses

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DOI: https://doi.org/10.24926/jrmc.vXiX.XXX
Journal of Regional Medical Campuses, Vol. *1*, Issue 5 (2019)

Published by University of Minnesota Libraries Publishing

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Clinical Setting Differences in Third-Year Medical Student Perceptions of "Patient Ownership"

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Abstract

Patient ownership in clinical settings is a construct that may be described as feelings of responsibility and accountability towards a patient, which has potential implications for patient safety and clinical care. Researchers were interested in examining differences in student perceptions of patient ownership across main and regional campuses. The purpose of this study is to assess third-year student perceptions of "patient ownership" during their clerkship rotations in different clinical settings.

Items from a validated instrument on psychological ownership were adopted to suit a clinical environment. Scores on each of the sub-scales of: a) *Territoriality*, b) *Accountability*, c) *Self-efficacy*, d) *Belongingness*, and e) *Self-Identification* were calculated. The survey was administered to third-year medical students multiple times throughout the academic year. Responses from regional campus and community practice settings were compared to responses associated with the main campus setting. A Mann-Whitney U test was performed on each sub-scales along with individual questions/items on students' psychological ownership scores.

Surveys were distributed at the end of each of seven clerkships resulting in 265 total responses, and response rate of 41%. There were no statistically significant differences between campuses for *Territoriality* scores when examining this sub-scale. On *Self-Efficacy*, *Accountability*, *Self-Identification* and *Belongingness* scales, community practice and regional campuses group had significantly higher scores on 1-5 Likert scale (1-strongly disagree, 5- strongly agree) than main campus ($p<0.05$). An analysis performed for all scales by individual questions/items resulted in statistically significant differences in 2 out of 4 items/questions for *Territoriality*, 2 out of 5 on *Accountability*, 2 out of 6 on *Self-Efficacy*, 5 out of 5 on *Belongingness*, and 7 out of 7 for *Self-Identification*.

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None of the authors has a conflict of interest. This study was approved by our institution's Institutional Review Board.

Introduction

"*Ownership*" of patient care is an important area of study in that it encompasses issues around professionalism, patient safety and the humanities in medical education[1, 2, 3]. The term is fairly amorphous and used ambiguously, in part because it has both cognitive and affective components that have only recently been defined in healthcare[4]. To measure students' ability to take ownership of their patients[5], the concept has been related to the construct of psychological ownership, which has a long history of measuring individual's sense of responsibility for a target (i.e. objects, tasks, or processes)[6]. In the case of medical education, patients are considered the target that physicians and physicians in training should "own." Although the term might not be familiar to some physicians, it is often used interchangeably with others such as *responsibility, commitment, accountability*, and *advocacy*[7, 8], all of which are important to develop within students' clinical experiences[9]. Further, ownership promotes leadership development in healthcare, a current area of much interest and investment in healthcare settings[10].

Clearly, learning to take ownership of patients is a critical skill that should be mastered in residency[4], but it should also be developed in medical school as students begin to frame their identity and what it means to be a physician[11, 12]. This study builds on the growing body of work at our institution, on the

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development of patient ownership in medical students during their clerkships[5, 13, 14]. At our main and regional medical campuses (RMC), our institution offers various clinical settings, including an academic medical center, rural/community hospitals, and community practices. These clinical settings differ in practice patterns, physician to student ratios, and patient populations, thus having the potential to influence students' ability to learn how to take ownership of a patient. This study investigates students' perception of whether they take ownership of their patients across these different clinical settings. This is a critical question to explore as our institution continues to expand and utilize a variety of sites for students' clerkship opportunities.

Methods

The setting for this study is Medical College of Georgia (MCG), which partners with community providers across the state to address a limited number of clerkship rotations on our main campus. With approximately 230 students in each class, MCG has expanded to include three regional campuses which are responsible for two years of clinical training, and one campus that trains students for all four years. One of our two-year RMC uses longitudinal curriculum while the other four use traditional curriculum. All students, even those with longitudinal curriculum, receive same academic content lead by clerkship directors on the main campus with difference in when and how this content delivered. All students have assigned carrier adviser when they declare preferred specialty. MCG makes use of physician practices across the state for students' clerkship placements, utilizing nearly 2500 physicians from various specialties[15]. These clinical sites expose students to a variety of rural and urban communities, and provide students with diverse clinical experiences and practice models.

To assess the differences between third-year students' perceptions of their ability to take ownership of their patients, items from a validated instrument on Psychological Ownership[6] were adopted to suit a medical education clinical environment. The instrument was altered with permission of the publisher and was necessary because the Psychological Ownership instrument was originally developed using literature from organizational psychology[16] and focused on employee's perceptions of work-based ownership within their organization. In the original development of the instrument[6], researchers were interested in an instrument that managers could use to assess individuals' level of organizational commitment. Therefore, to ensure the adopted instrument was appropriate for a medical student population, subtle revisions in the item's language were made and sent to clerkship directors for feedback. These revisions were then incorporated into the final survey distributed to students.

The instrument is comprised of five sub-scales: a) Territoriality, b) Accountability, c) Self-efficacy, d) Belongingness, and e) Self-Identification. Each of these sub-scales is briefly described to provide a general sense of the areas assessed. *Territoriality* occurs when individuals feel they must mark their place or objects, believing they have exclusive rights to them. A feeling of territoriality is often accompanied by feelings of anticipation of infringement and threat from others[17]. Items in this sub-scale include questions if medical students feel been able to protect information about their patients, (notes, slides, records, ideas) from other team members. *Accountability* is the expectation that one may be asked to justify one's beliefs, feelings and actions[18], and supports the idea that individuals have expected rights about holding others accountable and a sense of responsibility for one's self. Items in this sub-scale include questions if medical students feel been able to access patient data/information, advocate and hold other accountable for their patients. *Self-efficacy* is related to the idea that people's beliefs facilitate or constrain success as they attempt to implement action or complete a specific task. If an individual feels they can accomplish a task, they will feel more responsibility for achieving it[19]. Items in this sub-scale include questions if medical students feel been able to make plan, participate in decision-making regarding patient care. *Belongingness* is the psychological need individuals have for feeling they have a home or place. A sense of belongingness can be met by providing individuals with both the social and socio-emotional needs they have within a particular job, a work team, work unit, division, organization or professional field[16]. Items in this sub-scale include questions if medical students feel been able to be included, belong to the team on a clerkship. *Self-identity* is met when individuals internalize the organizational identity as an extension for the definition of self. This extension of self helps to develop a sense of meaningfulness and connectedness[20]. Items in this sub-scale include questions if medical students feel member of healthcare team specifically and as profession in general. Scores on each of the sub-scales were calculated by averaging the items belonging to each sub-scale, giving a possible range from 1 to 5 on a Likert scale from "strongly disagree" to "strongly agree". For the analysis, items negatively worded were reversed. In addition, data were analyzed by items within the sub-scales. The survey was administered to 233 third-year medical students multiple times throughout the academic year. Due to small numbers of students at multiple regional campuses and community-based practices, those data were combined for the analysis. Patient ownership data were compared between Main Campus (academic medical center) and Regional Medical Campus/Community Practices (RMC/CP). To examine differences between these two clinical settings in students' Psychological Ownership scores, a Mann-Whitney U test was performed. This test was determined since the data was found to be not normally distributed. All statistical analysis was performed using SPSS Statistics 25 and

statistical significance was assessed using an alpha level of 0.05. Data was presented as a median as well as interquartile range for each sub-scale. Descriptive statistics across learning settings (Main Campus, RMC/CP) for each of the Psychological Ownership sub-scales and individual items (Territoriality, Accountability, Self-Efficacy, Belongingness, and Self-Identification) were determined. This study was approved by our institution's Institutional Review Board.

Results

In total, 95 third year medical students completed the survey out of 233 third-year students (response rate 41%). Surveys were distributed at the end of each of seven clerkships, resulting in 265 total responses. Responses from participating students were divided into two clinical settings: Main Campus (*n* = 155, 58.5%) and RMC/CP (*n* = 110, 41.5%).
There were no statistically significant differences between settings for the *Territoriality* sub-scale combined (Table 1). Students completing clerkship rotations in a RMC/CP setting scored significantly higher compared to the Main Campus setting on *Accountability, Self-Efficacy, Belongingness*, and *Self-Identification* scores. RMC/CP students *Self-Efficacy, Belongingness* and *Self-identification* scores were highest ($p \leq 0.05$).

Table 1: Descriptive Statistics and Mann-Whitney U Test Results for Differences in Psychological Ownership Scores

Sub-scale	Median (interquartile range)		U	p-value
	Main Campus	RMC/CP		
Territoriality	3.75 (1.0)	3.75 (1.50)	7500	0.09
Accountability	4.00 (0.80)	4.00 (0.85)	7335	0.05*
Self-Efficacy	3.83 (0.67)	4.00 (0.83)	6888	<0.01*
Belongingness	3.80 (1.0)	4.00 (1.05)	5774	<0.01*
Self-Identification	3.71 (0.86)	4.00 (1.14)	5829	<0.01*

* p≤0.05

The researchers examined the individual items for the five different sub-scales and found statistically significant results for 2 out of 4 items/questions for *Territoriality*, 2 out of 5 on *Accountability*, 2 out of 6 on *Self-Efficacy*, 5 out of 5 on *Belongingness*, and 7 out of 7 for *Self-Identification*. Given the copyright agreement on the Psychological Ownership instrument, the full instrument, original or altered cannot be published. However, sample items from each subscale are provided below (Table 2).

Table 2: Descriptive Statistics and Mann-Whitney U Test Results for Individual Significant Items in Psychological Ownership Scale

Sub-scale	Ownership Item	Median (Interquartile Range)		U	p-value
		Main	RMC/CP		
Territoriality	*I feel I need to protect my work (i.e. notes, slides, records) from others on my team.* R	4.00 (1.0)	4.00 (1.0)	7204	0.02*
Accountability	*I am able to advocate for my patients on this clerkship.*	4.00 (1.0)	4.00 (1.0)	7060	0.03*
Self-Efficacy	*When I make plans for patient care, I am certain I can make them work.*	3.00 (1.0)	4.00 (1.0)	5558	<0.01*
Belongingness	*When I am with others on this clerkship, I feel included.*	4.00 (1.0)	4.00 (1.0)	6782	<0.01*
Self-Identification	*I am an active member of the healthcare team on this clerkship.*	4.00 (1.0)	4.00 (1.0)	6223	<0.01*

* p≤0.05
R – Reversed questions

Discussion

The results of this study indicate students' education in the RMC/CP model benefits their professional development in that it provides a clinical environment where students can begin to experience and develop an ability to "own" patient care. The medical students in this study rated Accountability, Self-Efficacy, Belongingness, and Self-Identification sub-scales higher after participating in a clerkship in a RMC/CP setting compared to students completing their rotation on the main campus that utilizes an academic medical center as the clinical setting. RMC/CP settings provide more one-one time with a preceptor, direct interactions with patients, and higher autonomy in making clinical decisions, which could contribute to these significant results. Additionally, we were interested in exploring the impact of clinical setting among the different individual items of the modified Psychological Ownership instrument. A sense of belongingness on the team seems to be one of the biggest differences between clinical settings, evidenced by the fact that all five items were significant. This finding that there are differences between clinical settings and that these differences influence students' perceptions of patient ownership should be added to the growing literature on the benefits of educating students in community settings[21, 22, 23]. Reasons for the identified differences was not a focus of this study, but we anticipate that it was most likely because the main campus utilizes residents who work with medical students, whereas in RMC settings, especially those that make use of community providers, there is more direct interaction between medical students and clinical faculty. Such interactions may contribute to deeper interpersonal relationships between students and faculty, which is an important contribution to high-quality clinical rotations[24]. Furthermore, smaller clinical settings facilitate team building and a team-based approach to care[21], as well as an opportunity to provide students with hands-on experience.

Although we found significant differences between these settings, this study was conducted at a single institution as a pilot for understanding how patient ownership differs across clinical settings. Future research could examine differences in patient ownership across other institutions that use a regional campus model. This will help tease out whether these findings are unique for MCG students or if clinical experiences with community providers is an important piece in building patient ownership. Additionally, due to the low sampling of participants who identified as either RMC or CP, we combined the groups to represent clinical experiences that differ from the main academic campus. Researchers who are interested in exploring patient ownership across settings further could categorize setting by examining number of students in a rotation, the physician-to-student ratio, medical resident involvement, type of clerkship curriculum[25], and type of healthcare facility.

Conclusion

Patient ownership is considered an important aspect of patient care, patient safety, and professional identity formation, yet researchers have not examined how clinical settings may impact the development of patient ownership in medical students. This study is the first of its kind to explore how differences in clinical experiences may influence students' ability to take ownership of their patients.

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