

## Group Medical Visits as a Teaching Tool in a Family Medicine Clerkship

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**Objective:** We sought to determine medical students' learning outcomes following exposure to a 4-hour group medical visit (GMV) curriculum that focused on Spanish-speaking patients who had diabetes. The GMV was part of a 4-week block family medicine clerkship for third-year medical students. **Methods:** We conducted a 1-year longitudinal, prospective study using a before and after survey and a qualitative analysis of end-of-clerkship reflective essays. Eleven survey questions captured change in knowledge about GMV resources, cultural knowledge, and attitudes toward the GMV model. **Results:** Ninety students completed the surveys. Fifty students chose to write about the GMV experience in their reflective essays. On the survey, a significant change was found in students' knowledge about culture-specific diabetic resources, cultural knowledge, and self-reported knowledge and attitude about GMVs. Qualitative analysis of the narratives and essays supported and strengthened this finding of positive attitudes about the importance of cultural competency and physician role modeling in the context of the patient-doctor relationship. **Conclusions:** Exposure to a 4-hour GMV curriculum is associated with knowledge gain. It is also associated with a positive attitude change, congruent with learning about the relevance of patient-doctor relationship within a cross-cultural setting.

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Current medical practice puts a number of pressures on primary care physicians. They must see more patients in less time. They must remain up to date with an increasing amount of medical information. And, they must deal with administrative paperwork and many insurance restrictions. Simultaneously, while new technology has enhanced diagnostic and procedural skills, it also has contributed to rising overall US health care spending and a decline in attention to patients, their narratives, and the context of their illness.<sup>1</sup> These changes can translate into a style of communication by physicians that may serve as a negative role model for medical students and resident physicians.

Leading organizations have been working to develop ways to address the influence of technology on patient-doctor communication.<sup>2-4</sup> For example, the American Academy of Family Physicians recently published "The

Future of Family Medicine,"<sup>5</sup> which focused on five issues pertinent to patient-physician communication, including (1) patient expectations, core values, reintegration, and the New Model of Family Medicine,<sup>6</sup> (2) medical education,<sup>7</sup> (3) continuous personal, professional, and practice development in family medicine,<sup>8</sup> (4) marketing and communications,<sup>9</sup> and (5) family medicine's role in shaping the future health care delivery system.<sup>10</sup> The group medical visit (GMV) model has potential to address some of these areas.

### Group Medical Visits

GMVs are a relatively new strategy for health care delivery in the United States,<sup>11</sup> designed to improve flow and efficiency and increase patient education—particularly for patients with chronic or common medical conditions. GMV models have been used and described for geriatric care,<sup>12</sup> coronary artery disease,<sup>13</sup> diabetes,<sup>14</sup> obesity,<sup>15</sup> and others.

In the GMV model, several patients are invited to schedule with their usual physician in a setting in which the clinician introduces the session, then introduces a

theme for education about the condition, and allows patient participation in the form of experience-sharing, challenges, and successes, with questions from patients and answers from the clinician. Dieticians, patient educators, nurses, and other allied health professions are often involved in the process and are part of the delivery of educational content.

GMV sessions often last 2 to 3 hours, are held in large rooms, and require patients to participate in a communal fashion. They also often include individual examinations, counseling, and review of laboratory findings in private rooms either at the beginning or end of the session.<sup>16</sup>

In a cross-cultural setting in which patients identify with other patients of similar background as themselves, the GMV may also serve an additional function of allowing safe and familiar exchanges about disease management that are appropriate to the culture of group participants, thus increasing adherence to the provider's recommendations.<sup>17</sup>

Several studies have identified the benefits of GMV among underserved populations.<sup>18,19</sup> These benefits include decreased numbers of emergency room visits,<sup>12</sup> improved health outcomes,<sup>20</sup> lower medical costs,<sup>21</sup> and better adherence with practice guidelines.<sup>22</sup>

The feasibility of implementing GMVs may be limited by the comfort and training of providers, space constraints, ability to bill for the service, as well as its acceptability among patients and the medical conditions cared for.<sup>23,24</sup> Despite these considerations, use of GMVs have been increasingly reported at professional meetings<sup>25</sup> and in the literature<sup>26-28</sup> and are likely to become available on a larger scale in medical education settings.

As a model for medical student education, GMVs are not well studied, and there is limited information about what medical students know about or learn from GMVs.<sup>25</sup> We examined the effect of GMVs on medical student in a family medicine clerkship. We hypothesized that students' exposure to a single-session diabetes GMV for Spanish-speaking Latino patients would be associated with gains in knowledge about patients' cultural beliefs and improved knowledge about and attitudes toward GMVs.

## Methods

We conducted a pre- and post-clerkship longitudinal, prospective study to assess changes in medical students' knowledge and attitudes using a mixed method model (self-report, objective multiple choice questions, open-ended narratives, and reflective writing). The study was approved by the University of California- Irvine Institutional Review Board (IRB).

## Participants and Clerkship Outline

Participants for this study were 90 third-year medical students at the University of California-Irvine, who were participating in a family medicine clerkship. Over 1 year, groups of eight to ten students rotated through the clerkship in a 4-week block. Students have an orientation on the first day of the clerkship, supervised clinical experiences through the 4-week clerkship, and an objective structured clinical examination at the end of the clerkship. The GMV experience took place during the clinical portion of the clerkship.

## Setting

GMVs took place in our teaching community clinic. The clinic is a site of the family medicine residency training program and is located in a federally designated underserved area. The population served by the clinic is mainly monolingual Hispanics (65%), Asian (10%), white non-Hispanic (20%), and other (5%). Diabetes, hypertension, and depression are the top three clinical conditions seen in the clinic.

## GMVs

We used a GMV model based on the model used by the Cooperative Health Care Clinic (CHCC).<sup>11,29</sup> We selected diabetes as the topic of our GMVs because of its high prevalence, poor control among our patients, and need for patient education. GMVs in diabetes care were offered once a month.

Care within the GMV was provided by a fluently bilingual (English and Spanish) Hispanic physician and nurse throughout the study period. Average attendance at the GMVs ranged from five to eight patients per session. Each GMV session lasted an average of 4 hours.

## Curriculum

The clerkship introduced the GMV in the last 6 months of academic year 2006–2007. During the 6-month initial phase, patient acceptability, attendance, and logistics for student participation and the student survey were assessed and refined. After the 6-month pilot, the GMV curriculum (4-hour session) was embedded within the clerkship and occurred in week 3 of the clerkship during academic year 2007–2008.

Students were provided with orientation materials (during week 1 of the clerkship) and readings about diabetes and Latino culture. Table 1 shows how the GMVs fit into the students' education about GMVs.

## Evaluation

**Pre- and Post-GMV Survey.** A pre-GMV survey was administered on the first day of the family medicine clerkship (Table 2). The survey was re-administered at the end of the clerkship with two additional open-ended questions that allowed narrative responses. The two additional questions were: "What did you like most about

Table 1

Structure of GMV Session During the Clerkship

Time	Activity	Comment
2:00–2:30	Introductory didactic to students	GMV purpose and form
2:30–3:15	Students meet and assess their patients	Chart, focused exam
3:15–3:20	Review group purpose with entire group (students and patients)	Review confidentiality
3:20–4:00	Topic of session and questions and answers	Varies with session
4:00–4:30	Discharge activities	Rx, labs, follow-up plan

GMV—group medical visit

Table 2

Content of Pre-course and Post-course Survey Questionnaire

- Questions 1 and 2 (Resources). Questions asked about resources students used to learn about culture-related issues in diabetes care. Scored based on the number of resources identified.
- Questions 3 to 7 (Cultural knowledge). Five questions tested students’ knowledge about Latino patients’ health beliefs/practices regarding the care of diabetes. Scored (maximum score of 5) based on the number of correct answers out of the 5 questions).
- Question 8 (Knowledge about group visits). Eight questions scored on a 1–5 point Likert scale with 1= least knowledgeable and 5=most knowledgeable.

the GMV?” and “What would you change about the GMV experience?” We designed this survey *de novo* for the project because no similar validated surveys were identified based on a literature review.

**Reflective Essays.** Students participating in the family medicine clerkship were required to write an essay that addressed the following issues: (1) How did cultural differences enhance the medical encounter? (2) How did cultural differences complicate the medical encounter? (3) What lessons about practicing medicine across cultures did you learn? (4) What were characteristics of positive and negative physician role-models?

They were required to write these essays about two different clinical settings that they had experienced during the clerkship, chosen from the following: (1) outpatient clinic, (2) visit to community *botanicas*, (3) home visits, and (4) GMVs. Open-ended responses were expected for the questions. The responses to the above questions were analyzed only for students who chose GMV as the topic of their essay.

*Data Analysis*

Results on the pre-GMV and post-GMV surveys from the 90 students were analyzed using the Statistical Package for the Social Sciences (SPSS) version 16. Quantitative responses were analyzed using *t* tests to compare mean scores on the two administrations of the survey.

Fifty-five of the 90 students provided narrative comments in response to the two questions on the post-course survey. Narrative data were independently coded by two faculty using a thematic approach. The two coders read all comments in response to the two narrative questions and identified the predominant theme for each response. This coding method had previously been successfully applied to two other student-centered learning settings in which themes were identified to document the most likely learning outcomes reported by students.<sup>30,31</sup>

Fifty students wrote about GMVs in their reflective essays. The 50 essays were reviewed using a grounded theory approach. The initial review yielded 91 categories based on distinguishing various words and phrases. These were consolidated into eight major themes: (1) cultural competence/knowledge, (2) language, (3) communication, (4) mutual learning between doctor and patient, (5) empowering patient/group dynamics, (6) nature of patient education process, (7) lack of connection with patients, (8) physician attitudes. Within these major themes, two to three subcategories that were frequently mentioned were also retained. These themes and categories were used to code each essay. Each theme and subcategory was coded only once for each of the above four questions.

**Results**

*Pre-course and Post-course Survey Results*

All 90 clerkship students (51 male, 39 female) completed the surveys (response rate of 100%). Partially completed surveys were included in the analysis.

### Cultural Resources

In response to the questions about resources for learning about diabetes care in Hispanic patients, the mean number of resources identified was 1.13 (standard deviation [SD]=0.94), while the post-clerkship mean (n=88) was 1.47 (SD=0.98). The difference between the pre-clerkship and post-clerkship responses was small but statistically significant ( $P=.015$ ) (Table 3).

### Cultural Knowledge

Eighty-nine students provided answers to the five questions about their knowledge about patients' health belief and practices. They answered a mean of 2.73 questions correctly on the first day of the clerkship and a mean of 4.02 questions correctly at the completion of the clerkship. The paired difference was 1.29 (SD=1.76), 95% confidence interval [CI]=0.92, 1.66 ( $P<.000$ ).

### Self-reported Knowledge of GMVs

All 90 students completed the questions about their understanding of GMVs and their role in health care delivery. Students' responses indicated more agreement with survey statements after the course than before. The differences between the pre- and post-course responses were significant ( $P<.00$ ) (Table 4).

Table 3

Sources of Information Identified by Students on the Pre-clerkship and Post-clerkship Surveys to Learn About Diabetes Care in Hispanic Patients (Question# 2).

# of Resources Identified	Pre-clerkship Survey		Post-clerkship Survey	
	# of Students*	%	# of Students*	%
0	30	33.3	10	11.1
1	33	36.7	47	52.2
2	22	24.4	21	23.3
3	3	3.3	10	11.1
4	2	2.2	1	1.1
6	—	—	1	1.1

\* A total of 90 students responded to the survey

### Attitude About GMV Experience

In response to the two questions about what they liked about the GMVs and what they would change about them, the 55 responding students provided narrative responses that yielded six major themes each (Table 5).

Table 4

Survey Responses Regarding Knowledge of GMV

	Question	Pre-clerkship Mean (SD)	Post-clerkship Mean (SD)	Mean Pre/Post Difference (95% CI)	P Value
a	Scope of care provided by GMV	1.4 (1.08)	3.06 (1.35)	1.66 (1.29; 2.02)	<.0001
b	Usefulness of GMV for chronic diseases	1.5 (1.2)	3.29 (1.45)	1.74 (1.35; 2.14)	<.0001
c	Impact of health beliefs on chronic disease	2.5 (1.4)	3.56 (1.35)	1.03 (0.61; 1.45)	<.0001
d	Action plan implementation and follow-up	2.2 (1.37)	3.33 (1.23)	1.18 (0.78; 1.58)	<.0001
e	Patients' role in their own health care.	2.8 (1.59)	3.6 (1.4)	-0.8876 (-1.3; 0.4)	<.0001
f	Importance of training in GMV on patient care.	1.7 (1.26)	3.23 (1.4)	1.54 (1.16; 1.93)	<.0001
g	Role of GMVs in answering patient's questions/concerns re: diabetes	1.7 (1.39)	3.29 (1.44)	1.58 (1.17; 1.98)	<.0001
h	Role of patient as an educator	2.5 (1.53)	3.57 (1.32)	1.08 (0.63; 1.52)	<.0001

GMV—group medical visits  
CI—confidence interval

Responses to survey question 8, which had eight parts (a–h). The stem question was “Please indicate your level of knowledge associated with each of the following aspects of the GMV model with 1= least knowledgeable and 5=most knowledgeable.” Ninety students responded.

Table 5  
Most Common Themes Identified in Post-GMV Survey

	<i>Frequency</i>
10. What did you like most about the GMV? (n=55 respondents)	
Support group	30
Patient education	9
Learn about patient's beliefs/practice	6
Group dynamic	4
Empowering patients	3
Extended time given to patients	3
11. What would you like to change in the GMV to make the experience more relevant? (n=46 respondents)	
Language barrier	16
More teachers	7
Preparing students better for GMV	4
More patient interaction	4
Include other topics	3
Better structure of the session	2

Survey questions #10 and #11. Ninety students responded.

GMV—group medical visits

### *Reflective Essay Findings*

Of the students who chose the GMV to reflect on in their required essays, almost half (23/50) recognized the importance of group dynamics in providing social support and empowering patients. A smaller number specifically noted the possibilities for horizontal patient-to-patient education (n=11) and horizontal mutual learning between doctor and patient (n=15). A comparable number of students (n=14) continued to highlight a vertical doctor-patient relationship, seeing the group setting primarily as a time-efficient way for the doctor to reach a large number of patients but in a traditional top-down model in which the physician educates the patient.

Sixteen of the students reported the GMV to be an effective way for the physician (and themselves) to acquire cultural knowledge and develop greater cultural sensitivity about a group or groups of patients. Fourteen students expressed concerns about negative group dynamics, such as someone dominating the group discussion, violation of privacy, group members treating certain diseases as stigmatizing, and the risk of individual medical needs not being addressed. Similar numbers of students worried about the physician being unable to connect with the group either because of lack

of language skills (16 students) or cultural competence (12 students). Fourteen students also noted that lack of cultural competence on the physician's part in the GMV setting could result in diminished trust and non-adherence in patients.

Twenty-seven students said that the single most important lesson was the importance of cultural competence. Other lessons had to do with developing positive qualities (mentioned by 36%) such as openness and patience. Forty percent of students noted the value of communication skills, especially listening, and 24% mentioned the importance of group facilitation skills. Only a handful (14%) mentioned language skills.

In terms of positive physician role models, the largest number (31, or 62%) of students mentioned positive qualities such as openness, tolerance, and empathy, many of which might be especially relevant in cross-culture encounters. Almost half identified cultural competence as a critical attribute of positive role models. About a quarter of the students mentioned communication skills and group facilitation skills.

Negative role models were often hypothetical or referred to a physician other than the GMV facilitator. Fifty-six percent listed negative attitudes, such as being judgmental, dismissing patient beliefs/practices,

and seeming rushed and impatient. Only a fifth were concerned about lack of cultural competence.

## Discussion

Within a 4-week family medicine clerkship, we exposed students to a required 4-hour GMV model of care at a community clinic. The focus was on monolingual patients who had diabetes, and the curriculum and patient care were delivered by a fluently bilingual physician.

After participating in the experience, students demonstrated a significant increase in both measured cultural knowledge and self-reported knowledge about GMVs, and their narrative comments revealed themes relevant to enhanced patient education and empowerment. The reflective essay findings gave added support to improvements in post-test attitudes that recognized the importance of patient health beliefs in managing chronic illness, the role of GMVs in answering patients' concerns about diabetes, and the role of patients as educators. Both survey and essay findings indicated a large number of students who identified and valued support group dynamics and patient empowerment aspects of GMV. Students enjoyed observing the shift in power that occurred in the GMV and specifically the opportunity for patients to support and empower each other. However, what they felt to be most significant in terms of alterations in the doctor-patient relationship was how the process of education shifted to become more mutual (doctor and patient) and, at least in the eyes of some students, more horizontal (patient to patient).

This study had several strengths. The dataset for the survey was complete. A mixed methods model was used to collect information on domains of knowledge and attitudes. This approach allowed us to examine both the formal (survey) and informal (reflective essays) aspects of learning within the GMV curriculum and to capture otherwise hidden aspects of attitude change. The reflective essays complemented the survey dataset, allowing linkage and confirmation of observations gathered from the survey.

There are, however, also some limitations of the study. The reflective essays are skewed toward students who chose to write about the GMV and a substantive proportion (just under half) chose to write about other delivery models. Further, the cultural knowledge questions were specific to the Latino patient, so the generalizability of these findings to other settings may be limited.

Overall, however, we conclude that the GMV model is feasible to implement in a clerkship as an educational model and is associated with gains in knowledge and positive attitudes toward not only the delivery model itself but also cultural aspects of care and better understanding of chronic disease.

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