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Description and Students' Perceptions of a Required Geriatric Clerkship in Post-Acute Rehabilitative Care

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Abstract

This article describes medical students' evaluation of a geriatric clerkship in post-acute rehabilitative care settings. This was a cross sectional study of fourth-year medical students who completed a mandatory 2-week rotation at a post-acute care facility. Students were provided with three instructional methods: 1) Web-based interactive learning modules; 2) Small group sessions with Geriatric faculty; and 3) Geriatric Interdisciplinary Care Summary (GICS), a grid that students used to formulate comprehensive interdisciplinary care plans for their own patients. After the rotation, students evaluated the overall clerkship, patient care activities and usefulness of the three instructional methods using a 5-point Likert scale (1 to 5: Poor to Excellent), and listed their area of future specialty. Among 156 students who completed the rotation, 117 (75%) completed the evaluation. Thirty (26%) chose specialties providing chronic disease management such as family, internal medicine, and psychiatry; 34 (29%) chose specialties providing primarily procedural services such as surgery, radiology, anesthesiology, pathology, and radiation oncology. Students rated the usefulness of the GICS as good to very good (mean $\pm$ SD: 3.3 ± 1.0). Similarly, they rated overall clerkship as good to excellent (3.8 ± 1.0). The ANOVA test revealed no significant group difference in any of the responses from students with Overall clerkship [$F(112,4)=1.7$, $p=0.2$]. Students rated the geriatric clerkship favorably and found the multi-modal instruction to be useful. Even among students whose career choice was not primary care, geriatrics was a good model for interdisciplinary care training and could serve as a model for other disciplines.

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There is a growing need to train medical students on post-acute care of aging population. Post-acute care provides a comprehensive inpatient level of care for patients who need to recover their physical and cognitive functions lost due to injury, surgery, illness or exacerbation of chronic disease after transitioning their care setting from acute hospital care.^{1,2} It plays a critical role in the U.S. healthcare system for older patients because the risk for post-acute care admission increases with age.²

Post-acute care institutions may provide medical students with a unique training experience because they typically deliver care to medically complex patients using a structured interdisciplinary healthcare team as opposed to traditional acute care settings. In an interdisciplinary healthcare team, clinicians from various health disciplines collaborate forming a unified care plan rather than work autonomously.³ Clinicians in this team setting share responsibilities, pool available medical and non-medical resources, and coordinate services achieving holistic patient-centered care where all health disciplines, patients, and family/caregivers are involved in clinical decision-making.⁴ As the Institute of Medicine (IOM) has recommended, health care must develop programs that “establish interdisciplinary team training programs...that incorporate proven methods for team management” across various specialties.⁵

Although post-acute care represents an opportunity for training of complex patients, the feasibility of providing training to medical students in this setting is currently unknown. Post-acute care training is currently a small component of the curriculum in most U.S. medical schools. Students often split their time into many care settings such as acute hospital care, outpatient clinics and home care during their clerkships.⁶

Post-acute care training may be provided to medical students most appropriately during their senior year in medical school. Previous literature indicates that medical students reported being often overwhelmed by care of medically complex patients.^{7,8} However, in a survey comparing attitudes of freshman and senior medical students, senior students tolerated ambiguity and uncertainty associated with clinical medicine better than freshman medical students and preferred less structured training environments than freshman students.⁸ Furthermore, in this survey, senior medical students' tolerance with ambiguity and uncertainty differed by specialties that they chose for their future career. Students who chose specialties providing chronic disease management such as internal medicine, family medicine and psychiatry had higher tolerance to ambiguity than students who chose specialties providing primarily procedural services such as radiology, surgery and anesthesiology. Students' negative perceptions about complex patients may lead to decreased acceptance of post-acute care training that focuses on post-acute care of medically complex older patients.

This study describes a newly developed geriatric clerkship that employs multi-modal instructions in teaching senior medical students care of older patients in post-acute care settings. It also evaluated students' acceptance of instructional methods employed in the geriatric clerkship across their career choice.

DESCRIPTION OF THE GERIATRIC CLERKSHIP

The geriatric clerkship, beginning July, 2006, exposed fourth-year medical students to a two-week experience in post acute rehabilitative care of older adults. Our Geriatric

Clerkship employs a three-part curriculum (Figure 1). These parts are: 1) Building knowledge and skills specific to management of aging syndromes; 2) Integrating knowledge and skills into patient management and care coordination of elderly in post-acute rehabilitative settings; and 3) Bedside application of patient management and care coordination at a post-acute rehabilitative care facility.

1. Building Knowledge and Skills Specific to Management of Aging Syndromes

We designed two instructional components to help students gain knowledge and skills in managing aging syndromes for medically complex older patients.

1) Web-Based Interactive Learning Modules—We developed two web-based interactive learning modules providing students a self-assessment of knowledge required in diagnosing and managing older patients with two common aging syndromes, falls and dementia. In these learning modules, we covered broad issues on management of aging syndromes to increase students' knowledge, skills and confidence in managing medically complex older patients.

Each module contains unfolding cases and brief vignettes on older patients. At the beginning of each case, students are presented with the patient's history, physical examination, laboratory tests and radiographic findings. Students are then asked questions concerning diagnosis and management of the presented patient. As soon as students select their answer from multiple choices, a pop-up screen appears on a computer screen, providing instant feedback on whether students choose the correct answer. The pop-up screen's dialogue also explains why the answer is correct or incorrect. After answering all learning module questions correctly, students print a completion report and submit it to the geriatric clerkship director.

Students complete the learning modules on falls on week one and dementia on week two of the rotation prior to the small group sessions occurring at the end of the first and second weeks. The learning modules are available online at <http://www.aging.ufl.edu/gericlerkship>.

2) Small Group Sessions—Small group sessions occurred twice, at the end of the first and second weeks of the 2-week geriatric clerkship. The sessions began with a clinical skills workshop, followed by discussion of the sample clinical case. In these small group session, we not only aimed to improve students' knowledge and skills in managing aging syndromes, but discuss topics specific to post-acute care.

a. Clinical Skills Workshop: We developed two clinical skills workshops on falls and dementia assessments: 1) The Get-Up-And-Go Test assessing physical function in older patients at risk for falls; and 2) Clock-Drawing Test assessing cognitive function in older patients with dementia.

For the first workshop on the Get-Up-And-Go Test, geriatric faculty demonstrate the Get-Up-And-Go Test on an older patient. The Get-Up-And-Go Test is a validated, simple bedside assessment to evaluate physical functions and risk of falls.⁹ Patients are asked to sit on the side of the bed, get up without using their hands, walk 10 feet, turn around, walk back 10 feet and sit down on the side of the bed. After this demonstration, students jointly discuss their assessment of the older patient's gait abnormalities and risk of falls with the geriatric faculty. Additionally, physical and occupational therapists with the Veterans Affairs (VA) Medical Center (Gainesville, Florida) demonstrate and explain the use of assistive devices that are commonly prescribed to help prevent falls.

For the second workshop on the Clock-Drawing Test, the geriatric faculty demonstrates the test on an older patient. The Clock-Drawing Test is a validated, simple bedside assessment of cognitive function in older adults with risk for dementia.¹⁰ In this test, patients are asked to draw a face of a clock, place numbers in correct positions and draw in the hands at 10 minutes after eleven. After this demonstration, students jointly discuss their assessment of the patient's cognitive status with the geriatric faculty.

b. Discussion of Sample Clinical Cases: We developed small group discussions to help students integrate their knowledge and skills into the overall management and care coordination of older patients. Led by a geriatric faculty leader, the small group discussions, the first on falls and the second on dementia, occur twice during the 2-week geriatric clerkship.

We designed the small group discussions using three principles of problem-based learning: 1) Learning is driven by challenging, open-ended problems; 2) Students work in small collaborative groups; 3) Teachers assume the role of “facilitators” of learning.^{11–13} In these small group discussions, geriatric faculty present a sample clinical case of an older patient with either falls or dementia. The case unfolds over time from an outpatient setting to an acute-care hospital settings, and finally to a post-acute care setting in the small group discussions. After the clinical case is presented, students jointly identify the patient's medical and non-medical problems and the health disciplines to address the problems and formulate treatment goals formatted in the GICS (see below).

During the small group sessions on falls and dementia, the geriatric faculty also discuss on topics specific to post-acute care of older patients. These topics include physician's role in interdisciplinary care team as a facilitator as opposed to a leader in a traditional medical team, family members' role as an integral part of interdisciplinary care team, assessment and treatment of other related geriatric problems such as delirium and poor communication upon transition of care from hospitals to post-acute care.

2. Integrating Knowledge into Patient Management and Care Coordination

Geriatric Interdisciplinary Care Summary (GICS)—The GICS, newly developed for the clerkship is a grid that students use to integrate their knowledge and skills into overall management of medically complex older adults (Figure 2). Students evaluate two patients at their clinical site. The GICS grid consists of eight major care domains: 1) Physical Medicine and Rehabilitation; 2) Cognitive; 3) Emotional; 4) Medical & Surgical; 5) Nutritional; 6) Environmental; 7) Social & Caregiver; and 8) Economic. By refining the complex problems of older patients into these eight domains, we believe students formulate simpler and more manageable treatment goals specific and individualized to each patient's health needs. On the GICS, students identify patients' problems impeding recovery, identify health disciplines addressing these problems and formulate achievable treatment goals. During the weekly small group sessions, students use the GICS to jointly identify patients' problems impeding recovery in the sample clinical cases, identify health disciplines addressing these problems and formulate achievable treatment goals for older adults with falls and dementia. At their clinical sites, students are graded on the GICS on their two patients based on accuracy, thoroughness and patient specificity of the information. The form, directions, and grading sheet for the GICS are available online at: <http://www.aging.ufl.edu/gericlerkship>.

3. Bedside Clinical Application of Patient Management Care Coordination at a Post-Acute Rehabilitative Care Facility

Two-Week Clinical Rotation—To help students apply patient management and care coordination learned in the small group sessions and GICS, students complete a 2-week

clinical rotation in various post-acute care settings. These include: 1) rehabilitation hospital affiliated with a university health center (Gainesville, Florida); 2) transitional care unit attached to a university health center (Jacksonville, Florida); 3) geriatric evaluation and management unit attached to a Veterans Affairs (VA) medical center (Gainesville, Florida); 4) skilled nursing home within a private retirement community (Jacksonville, Florida).

In these facilities, students are expected to be involved in every aspect of their patients' care including writing orders, observing rehabilitation therapy sessions, participating in interdisciplinary care team conferences and holding patient/family meetings. A typical team consists of an attending physician, nurse, physical therapist, occupational therapist, pharmacist, psychologist, nutritionist and social worker. Each institution's clinical preceptor was either a board-certified geriatrician or a medical director of the post-acute care institution, and an active member of the interdisciplinary healthcare team. Because physician's role in the interdisciplinary health team varies by practice settings, complexity of each patient's problems and relationships among health disciplines in the team, students work closely with their clinical preceptor who serves as a role model and demonstrates his/her roles in the interdisciplinary health team at each post-acute care facility.

METHODS

Study Design

We conducted a cross-sectional study investigating medical students' evaluation of the geriatric clerkship. Study participants were fourth-year medical students who completed an online evaluation after finishing a mandatory 2-week geriatric rotation between September 1, 2007 and October 30, 2008. At the end of the clerkship, students completed a clerkship evaluations using secure, password-protected web site developed by the University of Florida College of Medicine. The evaluation form is available online at www.aging.ufl.edu/gericlerkship. Students rated the overall clerkship and instructional methods used in the geriatric clerkship. Students were also asked to report the specialty that they chose for their future career. The Institutional Review Board of the University of Florida and the Research and Development Committee of North Florida/South Georgia Veterans Affairs Health System (NF/SGVHS) approved this study.

Statistical Analyses

We compared students' career choices with their overall rating of the clerkship and their perceived usefulness of four instructional methods in a five-point Likert scale (1 to 5: Poor to Excellent). Then, we performed the ANOVA test to compare each of these 5 responses from students across their career choices: 1) specialties providing chronic disease management (internal medicine, family medicine or psychiatry); 2) specialties providing primarily procedural services (surgical specialties, radiology, anesthesiology, pathology or radiation oncology); 3) pediatrics, and 4) other specialties (dermatology, emergency medicine, neurology or others). We used the SAS Software Version 9.1 (SAS Institute, Inc., Cary, North Carolina) to perform statistical analyses.

RESULTS

Sample Description

Among 156 students who completed the clerkship, 117 (75%) completed the online evaluations between September 2007 through October 2008. Among these students, 30(26%) chose specialties providing chronic disease management such as internal medicine (n=18), family medicine (n=7) or psychiatry (n=5). Thirty-four (29%) chose specialties providing primarily procedural services such as surgical specialties (n=17) [surgery (n=6),

obstetrics/gynecology (n=6), ophthalmology (n=3), and urology (n=2)]; radiology(n=8); anesthesiology (n=4); pathology (n=3), or radiation oncology (n=2). Nineteen (16%) chose pediatrics; 17 (14.5%) chose other specialties [dermatology (n=3), emergency medicine (n=7), rehabilitation (n=1), and others (n=6)]; and 17 (14.5%) did not report their career choices. Table 1 summarizes the students' ratings of the geriatric clerkship by their specialty choice. The students rated usefulness of the GICS as good to very good (mean $\pm$ SD: 3.3 $\pm$ 1.0). Similarly, they rated the web-based interactive learning modules, small group sessions, patient care activities, overall clerkship as good to excellent (web-based learning modules, mean $\pm$ SD: 3.7 $\pm$ 0.9; small group sessions mean $\pm$ SD: 3.8 $\pm$ 0.9; patient care activities mean $\pm$ SD: 4.1 $\pm$ 1.1; overall clerkship mean $\pm$ SD: 3.8 $\pm$ 1.0). The overall Cronbach alpha of these 5 responses was 0.8, indicating a high internal consistency of the scores. There were missing scores for responses from 9 students, which were imputed by taking the median scores of the students' other responses. The imputation of the missing scores did not significantly change the mean scores of the 5 ratings from students.

Next, we performed the ANOVA test to investigate the students' rating of the geriatric clerkship across their career choices. The ANOVA test revealed no significant group difference in any of the responses from students: Web-based interactive learning modules [F(112,4)=0.3, p=0.9]; Small group sessions [F(112,4)=1.9, p=0.1]; GICS [F(112,4)=0.8, p=0.6]; Patient care activities [F(112,4)=0.2, p=0.2]; and Overall clerkship [F(112,4)=1.7, p=0.2].

DISCUSSION

In this study, we found that instruction employed in this geriatric clerkship was useful for medical students regardless of their career choice. To our knowledge, this is the first study to report a geriatric clerkship in post-acute care settings. Post-acute care is a valuable aspect of healthcare for patients with an array of medical and surgical problems such as injury, surgery, illness and exacerbation of chronic disease,² and is relevant to both medical and surgical specialties. Thus, post-acute care provides a unique learning experience to students with various career choices, either in medical or surgical specialties.

Another novel aspect of this clerkship is the Geriatric Interdisciplinary Care Summary (GICS), a newly developed tool that helps students integrate their knowledge and skills into overall management of medically complex older patients. Previous research reveals that the quality of interdisciplinary care documentation is associated with an improved comprehensiveness and accuracy of care planning processes for medically complex patients in nursing homes.¹⁴⁻¹⁷ While written interdisciplinary care plans have been previously used as a didactic tool for nursing education,¹⁸⁻²⁰ to our knowledge interdisciplinary care plans have not been employed in medical school education. Our study provides evidence that the GICS is a useful tool in training medical students on post-acute care of older patients.

Our study was limited because the results of this study may not be applicable to the general population of U.S. medical students. The study participants were a cohort of fourth-year medical students from a single medical school. Additionally, the response rate from students was 75 %. Because their participation in the online survey was voluntary, students who had a low interest in geriatrics or rehabilitative care might not have participated in a survey. Nevertheless, results of this study provide evidence that instruction employed in this geriatric clerkship was acceptable to most medical students.

In our study, students rated the web-based interactive learning modules as good to excellent, but not unanimously excellent. Previously, web-based learning modules on geriatrics have

been primarily used for training residents and faculty physicians.^{21–25} Web-based learning modules have been used to train medical students in other clerkships such as pediatrics and emergency medicine.^{18,26} In these clerkships, medical students rated web-based learning modules as good to excellent, which is similar to our results. In our geriatric clerkship, the web-based learning modules cover only two aging syndromes on falls and dementia. Students' rating for the web-based learning modules may improve if we provide additional modules on other common aging topics such as delirium, urinary incontinence, and pressure ulcer.

Students also rated the overall geriatric clerkship as good to excellent, but not unanimously excellent. This may be because our geriatric clerkship was a discrete two-week course offered during the fourth-year in medical school. Previously, a vertically integrated curriculum intervention throughout the entire 4-year undergraduate medical education demonstrated improved medical students' knowledge, skills and positive attitudes toward medically complex older patients.²⁷ Students' rating on overall geriatric clerkship may improve if instruction in the clerkship is presented to medical students throughout the entire 4-years in medical school.

Our goal of this initial study was to describe the newly developed geriatric clerkship and evaluate students' perceptions about the clerkship. Other learning outcomes specific to post-acute care training have not been implemented at the time when this study was conducted. Future research is needed to implement learning outcomes such as medical students' knowledge, skills and behaviors in providing better care to older patients in post-acute care. Additionally, the web-based learning modules, the GICS, and the scales used in this study were newly developed for this clerkship, and have not been previously validated. Future research is needed to test the validity of these instructional methods and scales for post-acute care training.

Despite these limitations, this study's findings show that learning experiences in our geriatric clerkship were useful to medical students. Even among students whose career choices were not in primary care, geriatrics was an effective modality providing interdisciplinary care training. Future studies are needed to explore whether geriatric clerkships such as this will improve students' ability to provide quality care to medically complex older patients.

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References

1. Elixhauser, A.; Yu, K.; Steiner, C., et al. Hospitalization in the United States, 1997. 00-0031. Rockville, MD: Agency for Healthcare Research and Quality; 2003. HCUP Fact Book. 7-27-2008
2. Commonwealth Fund Commission on a High Performance Health System. Results from the National Scorecard on U.S. Health System Performance. 2008. Why Not the Best?.
3. Institute of Medicine. Crossing Quality Chasm: A New Health System for the 21st Century. Washington, D.C.: National Academy Press; 2001.
4. Pethybridge J. How team working influences discharge planning from hospital: A study of four multi-disciplinary teams in an acute hospital in England. *J Interprof Care*. 2004; 18:29–41. [PubMed: 14668100]
5. Institute of Medicine. To Err is Human. Washington, D.C.: National Academy Press; 2000.
6. Eleazer GP, Doshi R, Wieland D, et al. Geriatric content in medical school curricula: Results of a national survey. *J Am Geriatr Soc*. 2005; 53:136–140. [PubMed: 15667390]
7. Drickamer MA, Levy B, Irwin KS, et al. Perceived needs for geriatric education by medical students, internal medicine residents and faculty. *J Gen Intern Med*. 2006; 21:1230–1234. [PubMed: 17105521]
8. Merrill JM, Camacho Z, Laux LF, et al. Uncertainties and ambiguities: measuring how medical students cope. *Med Educ*. 1994; 28:316–322. [PubMed: 7862004]
9. Mathias S, Nayak US, Isaacs B. Balance in elderly patients: the “get-up and go” test. *Arch Phys Med Rehabil*. 1986; 67:387–389. [PubMed: 3487300]
10. Sunderland T, Hill JL, Mellow AM, et al. Clock drawing in Alzheimer’s disease. A novel measure of dementia severity. *J Am Geriatr Soc*. 1989; 37:725–729. [PubMed: 2754157]
11. Wikipedia Foundation, Inc. Problem-Based Learning. 8-7-2008. Wikipedia Foundation, Inc 8-18-2008.
12. Kim S, Phillips WR, Pinsky L, et al. A conceptual framework for developing teaching cases: A review and synthesis of the literature across disciplines. *Med Educ*. 2006; 40:867–876. [PubMed: 16925637]
13. Cohen-Schotanus J, Muijtjens AM, Schonrock-Adema J, et al. Effects of conventional and problem-based learning on clinical and general competencies and career development. *Med Educ*. 2008; 42:256–265. [PubMed: 18221268]
14. Achterberg WP, van CC, Pot AM, et al. Effects of the Resident Assessment Instrument on the care process and health outcomes in nursing homes. A review of the literature. *Scand J Rehabil Med*. 1999; 31:131–137. [PubMed: 10458311]
15. Mor V. A comprehensive clinical assessment tool to inform policy and practice: Applications of the minimum data set. *Med Care*. 2004; 42:III50–III59. [PubMed: 15026672]
16. Paquay L, De LJ, Schoenmakers B, et al. Comparison of the diagnostic accuracy of the Cognitive Performance Scale (Minimum Data Set) and the Mini-Mental State Exam for the detection of cognitive impairment in nursing home residents. *Int J Geriatr Psychiatry*. 2007; 22:286–293. [PubMed: 17022109]
17. Taunton RL, Piamjariyakul U, Gajewski B, et al. Care planning integrity in nursing facilities. *Nurs Res*. 2008; 57:271–282. [PubMed: 18641496]
18. Baumlin KM, Bessette MJ, Lewis C, et al. EM Cyber School: An evaluation of computer-assisted instruction on the Internet. *Acad Emerg Med*. 2000; 7:959–962. [PubMed: 10958144]
19. Taunton RL, Swagerty DL, Smith B, et al. Care planning for nursing home residents: Incorporating the Minimum Data Set requirements into practice. *J Gerontol Nurs*. 2004; 30:40–49. [PubMed: 15624695]
20. Voutilainen P, Isola A, Muurinen S. Nursing documentation in nursing homes--state-of-the-art and implications for quality improvement. *Scand J Caring Sci*. 2004; 18:72–81. [PubMed: 15005666]
21. Podrazik PM, Levine S, Smith S, et al. The Curriculum for the Hospitalized Aging Medical Patient program: A collaborative faculty development program for hospitalists, general internists, and geriatricians. *J Hosp Med*. 2008; 3:384–393. [PubMed: 18836989]

22. Mantovani F, Castelnuovo G, Gaggioli A, et al. Virtual reality training for health-care professionals. *Cyberpsychol Behav*. 2003; 6:389–395. [PubMed: 14511451]
23. Cook DA, Dupras DM. Teaching on the web: Automated online instruction and assessment of residents in an acute care clinic. *Med Teach*. 2004; 26:599–603. [PubMed: 15763848]
24. Cook DA, Dupras DM, Thompson WG, et al. Web-based learning in residents' continuity clinics: A randomized, controlled trial. *Acad Med*. 2005; 80:90–97. [PubMed: 15618102]
25. Cook DA, Thompson WG, Thomas KG, et al. Impact of self-assessment questions and learning styles in Web-based learning: A randomized, controlled, crossover trial. *Acad Med*. 2006; 81:231–238. [PubMed: 16501263]
26. Fall LH, Berman NB, Smith S, et al. Multi-institutional development and utilization of a computer-assisted learning program for the pediatrics clerkship: The CLIPP Project. *Acad Med*. 2005; 80:847–855. [PubMed: 16123465]
27. Supiano MA, Fitzgerald JT, Hall KE, et al. A vertically integrated geriatric curriculum improves medical student knowledge and clinical skills. *J Am Geriatr Soc*. 2007; 55:1650–1655.A. [PubMed: 17908064]

Figure 1.
Structure of Instructional Components Used in the Geriatric Clerkship

Patient Initials: Admission Diagnosis: Student Name:		Admission Date: Date:	Facility: Other Major Diagnoses:	
Domain	Problem(s)	Disciplines to Address the Problem(s)	Treatment Goal(s)	Assessment of Progress
1. Physical Med & Rehabilitation
2. Cognitive
3. Emotional
4. Medical & Surgical
5. Nutritional
6. Environmental
7. Social & Caregiver
8. Economic

Figure 2.
Geriatric Interdisciplinary Care Summary (GICS)

Students' Rating of Geriatric Clerkship by Their Specialty Choice
(Mean ± SD; Rating: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent)

Table 1

Instructional Method	Specialty-----					ANOVA	
	Specialties Providing Chronic Disease Management [§] (n=30)	Specialties Providing Procedures [©] (n=34)	Pediatrics (n=19)	Other Specialties [¥] (n=17)	No Response (n=17)	All Specialties (n=117)	P-value
Learning Module	3.8 ± 1.0	3.6 ± 1.0	3.6 ± 1.1	3.8 ± 0.9	3.7 ± 0.8	3.7 ± 0.9	0.3 (112, 4)
Small Group	4.1 ± 0.8	3.7 ± 0.8	3.5 ± 1.1	3.8 ± 0.8	3.6 ± 0.9	3.8 ± 0.9	1.9 (112, 4)
GHCS	3.5 ± 1.1	3.2 ± 1.0	3.3 ± 1.0	3.5 ± 1.0	3.1 ± 1.1	3.3 ± 1.0	0.8 (112, 4)
Patient Care	4.3 ± 0.9	4.3 ± 0.8	3.7 ± 1.3	3.9 ± 1.1	3.8 ± 1.2	4.1 ± 1.1	1.7 (112, 4)
Overall	4.2 ± 0.9	3.9 ± 0.8	3.5 ± 1.1	3.6 ± 1.2	3.7 ± 1.2	3.8 ± 1.0	1.7 (112, 4)

[§]Specialties providing chronic disease management = internal medicine, family practice and psychiatry.

[©]Specialties providing procedures = surgical specialties, radiology, anesthesiology, pathology and radiation oncology

[¥]Other Specialties = dermatology, emergency medicine, rehabilitation and others.