▲ Examining Intercultural Sensitivity and Competency of Physician Assistant Students

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Training in intercultural competency for health care professionals is necessary to bring greater balance to the disparity currently found among those needing health care. The purpose of this study was to determine what, if any, improvements in cultural competency were measurable in physician assistant (PA) students as they matriculated, using the Multicultural Awareness, Knowledge and Skills Survey-Revised as a pretest upon program entry and again as a posttest on the final day of the program. Ninety-three PA students from four successive classes graduating from a private midwest college between 2003 and 2007 participated in the pre and post measurements. All students were enrolled in specific didactic studies and clinical experiences in cultural sensitivity and competency. The results demonstrated significant improvement in knowledge (pretest 2.63, posttest 2.76, p=0.001) and skills (pretest 2.63, posttest 2.93, p<0.001) for all classes combined. The Intercultural Development Inventory was administered to the most recent graduating class to further explore these results. This cohort showed the highest scores (group mean 3.58 on scale of 1–5) in the Minimization developmental stage, which emphasizes cultural commonality over cultural distinctions. Enhanced curricular instruction such as exploring cultural assessment methods and controversies in health care differences, combined with increased clinical experiences with diverse cultures, are recommended to help move students past the minimization stage to gain greater cultural competency. J Allied Health 2012; 41(3):e55–e61.

THE CLINICIAN'S ABILITY to appropriately interact with patients from other cultures can be challenging, risking the quality of health care provided. The Institute of Medicine (IOM) concluded that "minorities are less likely than whites to receive needed services, including clinically necessary procedures."[1(p 2)] Factors associated with the health care provider's role that are attributable to disparities are threefold: 1) bias or prejudice, 2) clinical uncertainty when caring for minority patients, and 3) assumptions made by the clinician about minority health care needs.[1] These three factors all display a failure of "intercultural competence," defined as "the ability to think and act in interculturally appropriate ways."[2(p 422)]

As health professionals, physician assistants (PAs) are individually licensed to practice medicine within the scope of a physician's clinical practice, extending the care provided by that physician. PAs are able to make clinical decisions and provide a broad range of diagnostic, therapeutic, preventive and health maintenance services.[3] A 6-year analysis of the National Ambulatory Medical Care Survey data revealed that patients were more likely to visit a PA in rural areas than urban areas, and nonwhite patients were more likely to visit PAs than were white patients.[4] PA education programs must assure that their graduates have appropriate cultural competency skills as cited by PA educational accreditation standards such as "the curriculum must include instruction to prepare students to provide medical care to patients from diverse populations" (citation B1.06).[5]

This study reviewed the results of a pre and posttest survey of intercultural sensitivity (Multicultural Awareness, Knowledge and Skills Survey-Revised, MAKSS-R) over a 5-year period at a midwest US PA program to determine if the students' intercultural awareness, knowledge and skills improved over the course of the curriculum. The original purpose of the MAKSS tool, designed by D'Andrea, Daniels and Heck, was to measure self-perception in counselor education students.[6] The survey contained 60 statements/questions, 20 focused in each of the domains of awareness, knowledge and skills, requiring responses on a 4-point scale. For an earlier study of PA students, written permission was obtained from the original authors to revise some of the wording of the questionnaire to make it more applicable to clinicians in primary health care while maintaining the three domains. Sample questions are shown in Table 1. In the earlier study of the MAKSS-R,[7] the reliability coefficients (Cronbach's alpha) were 0.58, 0.75 and 0.91 for the awareness, knowledge and skills subscales respectively.

A second survey was added in the final year of this study, the Intercultural Development Inventory (IDI), to further

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TABLE 1. MAKSS-R[7] Scales and Descriptions

Scale	Sample Statement
Awareness	*"In multicultural situations, basic implicit concepts such as 'fairness' and 'health' are not difficult to understand."*
Knowledge	*"Rate your understanding of the term, 'transcultural.'"*
Skills	*"How would you rate your ability to accurately assess the health needs of gay men?"*

explore the outcomes measured by the MAKSS-R. The IDI v.2 has an established history of predicting intercultural sensitivity based on a six-stage model.[2] This Developmental Model of Intercultural Sensitivity (DMIS) developed by Bennett[8] consists of three stages that contribute to a mindset of monoculturalism (one's culture experienced as central to reality) followed by three stages that contribute to a mindset of interculturalism (one's culture experienced in the context of other cultures). These stages form a continuum with the far left of the scale representing denial of any cultural ideologies and the far right representing an individual who is able to integrate diverse cultures with his or her own (see Figure 1).

Following the far left stage of Denial, the Defense/Reversal stage suggests the mindset of being either defensive about a person's own culture, or being submissive to a different culture (reversal). The Minimization stage follows this on the continuum and acknowledges cultural differences but minimizes these to negate distinct cultural influences. These three stages comprise a range of monoculturalism which then transition into stages of interculturalism. The attitude of interculturalism is measured as beginning with the Acceptance stage, signaling an appreciation of diverse cultures. This is followed by the Adaptation stage representing individuals who are interacting with other cultures (with distinct cognitive and behavioral components). In the DMIS model, the sixth stage is Integration, representing the incorporation of one's own culture with other differing cultures.

The IDI v.2 is comprised of fifty statements in which participants rate their agreement or disagreement on a five-point scale. The items are grouped into five scales that reflect the DMIS stages with reliability coefficients of 0.8 or higher when tested in a culturally diverse group of 591 individuals.[2] These five scales are Defense/Denial, Reversal, Minimization, Acceptance/Adaptation, and Encapsulated Marginality. This latter scale, later renamed "cultural dis-

engagement," is a disconnection from culture to the point that the individual may be alienated to his or her own culture and may arise at any point along the continuum.[9] Each scale has from 5–14 statements that represent its worldview; for example, one statement from Defense/Denial stage reads, "It is best to form relationships with people of your own culture."[10] The scales are further described in Table 2 with additional sample statements.

Two methods of analysis of the IDI data provided a more qualitative and descriptive assessment of intercultural sensitivity. First, the five scale scores were derived by averaging the corresponding item-ratings on a scale of 1.0 to 5.0. General interpretive guidelines[11] indicate that scale scores of 1.0–2.33 reveal that participants are in conflict with the worldview measured by the scale. Scores from 2.34–3.66 indicate uncertainty with the worldview, and scores between 3.67–5.0 indicate adoption of that worldview (see Table 3).

Second, two summary scores were calculated from the IDI, one reflecting the respondent's "developmental" intercultural sensitivity score and the second reflecting the respondent's perception of their intercultural sensitivity and ability. The gap between these two scores represents the difference between the IDI's evaluation and what a respondent perceives as attributes consistent with intercultural competency.

CULTURAL COMPETENCY IN THE CURRICULUM

The sequence of the cultural health care curriculum included 15 contact hours of didactic study with occasional clinical experiences with other cultures at a free clinic, followed by more formal clinical experiences with diverse cultures over a year of clinical rotations. Instructional content included cultural relations, health care contrasts between cultures, and strategies for caring for individuals from different cultures, including the explanatory model of illness.[12] Learning activities included a role-playing exercise, Barnga,[13] where students jointly experience a clash of cultural miscommunication followed by a guided self-reflection on conflict resolution. Each student also participated in small group projects studying a specific ethnic culture. The assignment included a group paper and oral presentation to their peers about the health care needs specific to that culture. Students participated in a free clinic offered to homeless individuals at least once a year. Though data was not maintained on exposure to specific ethnicities, the free clinic routinely offered the students exposure to significant cultural differences including socioeconomic, ethnic, racial
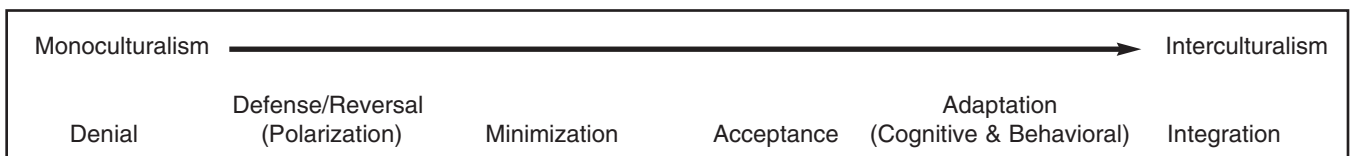
FIGURE 1. Developmental Model of Intercultural Sensitivity.[2]

TABLE 2. IDI Scales and Descriptions[10]

Scale Title	Worldview Definition	No. of Statements	Sample Statement
Defense/Denial	Simplifies and/or polarizes cultural differences.	13	*"It is best to form relationships with people of your own culture."*
Reversal	Reverses "us" and "them" polarization where "them" is superior.	9	*"If only our culture was more like other cultures, the world would be a better place."*
Minimization	Highlights cultural commonality and universal issues.	9	*"People are the same; we have the same needs, interests and goals in life."*
Acceptance/ Adaptation	Comprehends and accommodates complex cultural differences.	14	*"I often act as a cultural bridge between people from different cultures."*
Encapsulated Marginality	Incorporates a multicultural identity with confused cultural perspectives.	5	*"I do not identify with any culture, but with what I have inside."*

and religious diversity. During the final year of clinical rotations, each student was scheduled for at least one four-week rotation at a site that was medically-underserved based on state or federal designations. Some students volunteered to participate in additional underserved rotations.

Methods

PARTICIPANTS

The study sample included 96 students enrolled in a primary care PA program at a private, midwestern, 4-year college over four successive classes graduating in 2003–2005 and 2007. There were no graduates in 2006 as the program transitioned to a curriculum granting a Master's degree. In total, 3 students withdrew (all Caucasian); 2 for academic reasons (from the Classes of 2003 and 2005) and 1 for non-academic reasons (from the Class of 2007), resulting in 93 students completing both the pre and post MAKSS-R.

INSTRUMENTATION

The MAKSS-R was administered as a pretest on the first day of orientation and as posttest on the last day prior to graduation, included with other routine institutional evaluations, such as student evaluation of admissions (accompanying the pretest), and student evaluation of faculty and support services (accompanying the posttest).

The Class of 2007 was additionally surveyed at the time of graduation using the IDI to provide a secondary source of evaluation for reliability and to more widely explore the cultural competencies of this subset of students.

RESEARCH DESIGN

This was a retrospective study as all data was collected prior to the research design. The Institutional Review Board approved the use of the previously collected data for this secondary research review (IRB Approval # 200707412).

Approval was also received by the Human Subjects Review Board at the college where the data was collected. Informed consent was waived by the IRB as the data was collected prior to the study. The surveys identified the participants by the self-reported last four digits of their social security numbers for use only in pre and post survey comparisons. No names were associated with individual surveys with only aggregate data reported.

RESEARCH INTERVENTION

The first 3 student cohorts (Classes of 2003–2005) participated in the full didactic curriculum of the PA program during the first 15 months; the fourth student cohort (Class of 2007) participated in 21 months of a graduate-level curriculum. The curriculum for cultural sensitivity and competency remained the same for each cohort, including 15 contact hours of didactic instruction, learning activities, group projects, and supervised patient care at a free clinic for the homeless, as described in the introduction. All students completed 12 months of clinical rotations including exposure to underserved populations. Students in clinical rotations electronically recorded demographic information on all patients seen.

DATA ANALYSIS

Demographic information from students and patient encounters were summarized with frequencies and percentages. Data from the MAKSS-R were entered into the Statistical Package for Social Sciences (SPSS) version 15.0 (SPSS, Inc. Chicago, IL). Reliability analysis used Cron-

TABLE 3. IDI Score Range for Worldview Scales[11]

Score Range	Interpretation
1.00–2.33	Conflict with worldview
2.34–3.66	Uncertainty with worldview
3.67–5.00	Adoption of worldview

TABLE 4. Demographic Information of PA Students, 2003–2005, 2007

Class Year	Total No. of Students	Gender		Mean Age (yrs)	Race/Ethnicity			
		M	F		Caucasian	African American	Hispanic/ Latino	Asian
2003	24	9	15	30.9	20	1	2	1
2004	26	10	16	31.5	25	1	0	0
2005	20	8	12	32.3	18	0	1	1
2007	23	10	13	32.1	17	3	3	0
Total (%)	93	37 (40%)	56 (60%)	31.7	80 (86%)	5 (5%)	6 (7%)	2 (2%)

bach's alpha coefficient with the recommended level of 0.7 or higher to assure internal reliability.[14] Means were used to summarize the domains with ANOVA tests to compare pretest and posttest data. Significance for all aspects of the study was set at $p < 0.05$.

A professor trained as an IDI surveyor collected the data for submission to IDI, LLC (Ocean Pines, MD) to maintain the standard psychometric protocols established by the instrument's developers.

Results

Of the 93 students surveyed, 37 (40%) were male and 56 (60%) were female, ranging from 23 to 57 years of age (M=31.7 years). The group was predominantly Caucasian (86%) with 7% Hispanic/Latino, 5% African American and 2% Asian (see Table 4).

During the clinical rotations, each student had an average of 1,725 total patient encounters, with 10% of those with Non-Caucasian patients, and 26.7% with either low-income, Medicaid, homeless, or uninsured individuals (see Table 5).

Cronbach's alpha coefficient for the MAKSS-R domains of awareness, knowledge and skills in the study were 0.50, 0.75, and 0.91, respectively. A comparison of MAKSS-R

pretest and posttest means for all students showed a statistically significant improvement of 0.13 for the knowledge domain and 0.3 for the skills domain. Within the individual classes, the most improvement was with the 2003 Class (0.22 for knowledge and 0.39 for skills). Only the skills domain showed a statistically significant improvement of 0.31 for the 2004 class and 0.3 for the 2007 class. The 2005 class showed a statistically significant improvement of 0.18 for knowledge only. These results are shown in Table 6.

MAKSS-R SCORES COMPARED TO EXPOSURE TO DIVERSE PATIENTS

The distribution of Non-Caucasian patient contact was consistently near 10% for each class. The 2003 class had the highest proportion of lower economic status patients (50%), and the most improvement in MAKSS-R scores on the knowledge and skills domains. In contrast, the 2005 class had the lowest proportion of the lower economic status patients (16.5%) and a lower improvement on the MAKSS-R (statistically significant only in the knowledge domain). The Classes of 2004 and 2007 had a mid-range exposure to low income patients (25% in 2004 and 20% in 2007), and both classes reported a significant improvement only in skills domain on the MAKSS-R.

TABLE 5. Demographic Information on Clinical Rotation Patients Seen by Students, 2003–2005, 2007

	2003 (%)	2004 (%)	2005 (%)	2007 (%)	Total	Total Percentage
No. of PA Students	24	26	20	23	93	
Race/Ethnicity of Patients Seen						
African American	1060 (3.1%)	1,402 (3%)	1,808 (5%)	1,534 (3.5%)	5,804	3.6%
Asian	421 (1.3%)	371 (0.8%)	343 (1%)	300 (0.6%)	1,435	0.9%
Caucasian	30,396 (90.2%)	42,896 (90%)	33,543 (89%)	37,558 (91%)	144,393	90.0%
Hispanic/Latino	1,422 (4.2%)	2,217 (4.7%)	1199 (3.2%)	1,603 (4%)	6,441	4.0%
Native American	131 (0.4%)	513 (1%)	203 (0.5%)	302 (0.6%)	1,149	0.7%
Other	269 (0.8%)	281 (0.5%)	510 (1.3%)	148 (0.3%)	1,208	0.8%
Socioeconomic Status of Patients Seen						
Not low income	17,000 (50%)	36,048 (75%)	31,429 (83.5%)	33,137 (80%)	117,614	73.3%
Low income/Medicaid	7,393 (22%)	11,552 (24%)	5529 (15%)	8,220 (19.8%)	32,694	20.4%
Homeless/Uninsured	9,306 (28%)	80 (1%)	648 (1.5%)	88 (0.2%)	10,122	6.3%
Total No. of Patients	33,699	47,680	37,606	41,445	160,430	100%

TABLE 6. MAKSS-R Pretest and Posttest Results, 2003–2005, 2007 (Scale of 1–4)

Class	Awareness				Knowledge				Skills			
	Pre M	Post M	Mean Change	p	Pre M	Post M	Mean Change	p	Pre M	Post M	Mean Change	p
2003	2.67	2.72	0.04	.48	2.65	2.87	0.22	.02*	2.60	2.99	0.39	.002**
2004	2.72	2.70	−0.02	.64	2.62	2.66	0.04	.53	2.57	2.88	0.31	.003**
2005	2.63	2.74	0.11	.49	2.55	2.73	0.18	.03*	2.75	2.91	0.16	.10
2007	2.68	2.67	−0.01	.77	2.69	2.78	0.09	.15	2.53	2.83	0.30	.001**
All	2.68	2.70	0.02	.36	2.63	2.76	0.13	.001**	2.63	2.93	0.30	<.001**

*Statistically significant at $p = < 0.05$
**Statistically significant at $p = < 0.01$
Pre M = pretest mean, Post M = posttest mean

IDI RESULTS

The group mean IDI scores for all members of the Class of 2007 (N=23), are shown in Table 7.

Participants demonstrated disagreement with the monocultural Denial/Defense scale (1.74), suggesting that they as a group are not likely polarized to their own individual cultures. The Reversal scale score (2.33) was at the transition point for the group moving from disagreement to ambiguity on whether other cultures may be superior to the individual's own culture. The Minimization scale score (3.58) was the highest mean rating for the group, reflecting a tendency to highlight cultural commonality rather than affirming cultural differences. For example, higher scores with the following two individual statements within this scale reflected an agreement in universal values, minimizing cultural differences: "Despite some cultural differences, it is more important to recognize that people are all alike in their humanity" (4.52) and "People are fundamentally the same despite apparent differences in cultures" (3.96).

Participants indicated a small degree of uncertainty on the Acceptance/Adaptation scale score (3.43). The subscale scores within this scale for both cognitive and behavioral adaptation clusters were identical (3.37 for each subscale). The Encapsulated Marginality scale score (1.90) indicates a minimal sense of cultural disengagement from one's own culture.

SUMMARY IDI SCORES

Two overall scores compared the group's intercultural sensitivity from the perception of each individual with the IDI's interpretation of the individual's developmental profile. The scores represented points along the continuum of monoculturalism (given a lowest value of 55) to interculturalism (given a highest value of 145). The mean of the group's overall developmental intercultural sensitivity was scored at 91.65 and the overall perceived intercultural sensitivity score was 120.47, representing a gap of 28.82.

Discussion

This study sought to describe the change in intercultural competency of PA students between the beginning of their studies and graduation.

INTERCULTURAL COMPETENCY OF PA STUDENTS

PA students in this study were characterized in different stages of development of intercultural competency, categorized in the three scales of awareness, knowledge and skills. Specific norms have not been established for the MAKSS-R (adapted for clinicians) with any professional groups. The combined results for all students showed that significant improvement was noted in the knowledge and skills domains.

An earlier study[7] showed that students with intentional cultural competency education perceived a significantly higher increase in both knowledge and skills compared to students with minimal instruction who only reported an increase in skills. The present study's findings add further support to the relationship between cultural skills education (here demonstrated by lecture, self-learning activities, and field experiences) and cultural competency, yet it is not

TABLE 7. IDI Results, Class of 2007

Scale Type	Denial/ Defense	Reversal	Minimization	Acceptance/ Adaptation	Encapsulated Marginality
Group Mean	1.74	2.33	3.58	3.43	1.90
S.D.	0.89	1.22	1.21	1.19	1.15

*Key to mean scores: 1.0–2.33 indicates conflict with the worldview measured; 2.34–3.66 indicates uncertainty with the worldview; 3.67–5.0 indicates adoption of that worldview.

clearly identified where in the learning continuum the changes are occurring.

Knowledge and skills were improved overall as measured by the MAKSS-R, but greater gains should be anticipated. The curriculum at this institution has been enhanced with additional instruction including the listen-explain-acknowledge-recommend-negotiate method of cultural assessment (forming the acronym, LEARN[15]) and studying health care needs of migrant workers. Students who showed the most improvement in the MAKSS-R scores also had the greatest exposure to patients from a lower socioeconomic status. More experience with individuals from a lower socioeconomic background may help develop the students' knowledge and skills of cultural sensitivity. This can be achieved by requiring additional clinical rotations at sites with broader cultural diversity, and is currently under study at the institution studied here.

The awareness category did not demonstrate significant changes from pre to post testing. This category may reflect how the students reacted to their education. As students gained more knowledge about cultural issues, they may have become more sensitive to their own lack of cultural awareness. The awareness section of the MAKSS-R tool had a lower Cronbach's alpha (0.50), suggesting a diminished reliability compared to the knowledge and skills sections of the survey.

The Meaning of Intercultural Competency Measurements

Health care professionals have been described as transitioning from ethnocentricism to ethnorelativism.[16] This transition typically includes a phase of minimizing cultural differences, where individuals focus more on the similarities of people groups, as seen in this study by a higher degree of minimization in the IDI data.

This minimization of cultural differences may avoid cultural clashes but creates a barrier to exploring unique distinctions of cultures. To avoid minimization, students should develop their own individual cultural self-awareness. Opportunities to distinguish unique attributes of different cultures as well as developing frameworks for understanding their own individual cultures may help offset the tendency toward minimization.[17] The low measure of encapsulated marginality seen here suggests minimal difficulties among the group feeling disengaged from a personal cultural identity in the midst of other competing cultures.

The two summary intercultural sensitivity (IS) scores from the IDI show further evidence of minimizing cultural differences by the gap of almost 29 points between the lower developmental IS score and the higher perceived IS score (a gap score of 7 points or higher is considered a meaningful difference). The students perceived themselves to be more intercultural but the lower developmental IS score suggests there remains a more monocultural leaning.

Moving students forward on the continuum of increased cultural competency remains the goal, going beyond the zone of minimization. Encouraging students to identify their own peer group, think critically, and maintain individual responsibility for their own values and principles may support cultural integration without a loss of individual cultural development.[8,16] Exercises in understanding conflicts in cultural health care topics (e.g., coining, "susto"—illness due to fright) foster discussions of cultural differences and are utilized at the institution studied here to promote movement toward interculturalism.

Further studies should explore the antecedents that contribute to the desire to become more culturally competent. This is a vital construct that forms the genuine pursuit of the awareness, knowledge and skills needed.

Limitations

Confounding factors that may have influenced the cultural competency of the PA students include historical factors such as prior intercultural experience, language study, or previous cultural studies by students. The curricular change from undergraduate to graduate degree during the study heightened the rigor of the full curriculum which may have influenced student learning. The study was conducted at a single institution in one setting which limits the generalizability of the results. The racial homogeneity of the students in this study was high, suggesting little ethnic diversity. The internal validity may be affected by maturation factors as the pace of normal, ongoing social development of participants can widely vary.

The IDI is a phenomenological model in that it describes a learner's subjective experience of difference, not their objective behaviors. It may or may not be predictive of actual behaviors as the willingness of the learner to change is paramount.

The study would have been strengthened if the IDI was also administered as a pretest so the changes noted in the MAKSS-R would more clearly confirm the conclusions here. The minority population in this study was small, and a greater understanding of the adaptations of this subgroup as they relate to a new culture (enculturation) would be of interest for a future study.

Conclusion

Didactic and experiential training resulted in increased knowledge and skills in cultural competency. The more exposure students had to lower income patients, the higher the scores on the MAKSS-R, suggesting increased cultural competency. As this is based on observational data, further study is needed to determine if a specific correlation can be made. Additional studies of other student populations would contribute to better defining best practices in the education of cultural competency. Future studies should include identifying factors that motivate the students toward cultural competence.

Cultural competency instruction should be tailored to the needs of the group. This study identified these PA students in the developmental stage of minimization and they overestimated their level of intercultural competence. This places the group in the mid-range of monoculturalism, more highlighting cultural commonality. Students in this developmental stage of cultural competency would benefit from training that supports the individual's personal cultural distinctions while promoting skills of integration with other cultures. Increased didactic instruction in methods of cultural assessment and distinctions in various cultures, combined with additional clinical experiences with diverse cultures, have been implemented to move students along the continuum toward interculturalism.

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