Research

Effectiveness of an Educational Module on Dental Hygiene Students' Attitudes Towards Persons with Disabilities

Darlene M. Jones, RDH, MPA; Sonya R. Miller, MD

Abstract

Purpose: Persons with disabilities (PWDs) perceive gaps in health care providers' understanding of their health care needs are more likely to delay or not seek health care as compared to persons without disabilities. Oral health is considered an essential component of overall health, however, disparities exist in the United States, especially for persons with disabilities. Improving the education and training of dentists and dental hygienists may contribute to reducing oral health care barriers for PWDs. The purpose of this study was to investigate whether offering an education module about individuals with disabilities would change dental hygiene students' attitudes and capacity for informed empathy for PWDs.

Methods: An educational module utilizing a DVD featuring authentic representation of PWDs, along with student discussions and self-reflection was developed and delivered to 165 (n=165) dental hygiene students attending a 2-year community college and a 4-year university. Students consenting to participate in the study were assessed regarding their attitudes and comfort towards caring for PWDs prior to, and following the educational module. Pre- and post-assessment measures included the validated Attitude Toward Disabled Persons, and Attitudes toward Patient Advocacy Microsocial (AMIA) scale. The Interpersonal Reactivity Index (IRI) was used as a pre-assessment measure.

Results: A total of 58 (n=58) dental hygiene students, 35 (n=35) from a 4-year university and 23 (n=23) from a 2-year community college, consented for this study, for an overall participation rate of 35%. Scores increased significantly for both student groups after delivering the education module on the AMIA patient advocacy scale. Differences in IRI scores between the 2-year and 4-year dental hygiene programs approached statistical significance.

Conclusion: An education module based on informed empathy with a focus on the experiences of PWDs can result in improved attitudes toward advocacy for this population.

Keywords: special needs patients, access to care, dental hygiene education, patient advocacy, empathy

This manuscript supports the NDHRA priority area: **Professional development: Education** (Educational models).

Submitted for publication 3/27/17; revised 3/29/18; accepted 5/1/18

Introduction

According to the 2015 United States (U.S.) Census Bureau's American Community Survey, an estimated 12.6% of all non-institutionalized males and females of all ages and races, regardless of ethnicity or level of education, have some form of mental, physical, or emotional disability.[1] The Institute of Medicine (IOM) reports that persons with disabilities (PWDs), individuals who are underinsured or publicly insured, and people of lower socioeconomic status commonly lack access to oral health care.[2] PWDs have to overcome multiple barriers in order to access quality oral health care including transportation issues, a lack of experienced health care professionals trained to work with populations with special needs, and dental offices that are not accessible.[2] Improved education and training in dentistry and dental hygiene could address these barriers and decrease disparities in oral health care. Students who are given the opportunity to work with PWDs develop an increased comfort level and are more likely to care for this population in their future careers.[2,3] Dental hygiene professionals, who routinely provide oral assessments and patient education, perform non-surgical periodontal debridement, take radiographs, are likely to encounter PWDs in clinical practice and therefore can benefit from developing an awareness of the needs of this population.

The IOM defines patient centeredness as health care that establishes a partnership between practitioners, patients, and their families, so that health care decisions respect patients' wants, needs, and preferences.[4] Patient centeredness has been identified by the IOM as a core component of quality health care.[4] Patient-centered care requires good provider-patient communication to ensure that patients' needs and wants are both understood and addressed.[5] However, having a disability has been found to negatively affect provider-patient communication.[6-8] PWDs frequently report faulty communication, and express the need for better communication with health care providers.[9,10] PWDs desire to be treated as equals in the patient-provider relationship and contend that a lack of education regarding disabilities is a major contributor to miscommunication.[9]

Compassion and empathy are additional components of patient-centered care. Empathy is considered a vital aspect of any helping and healing relationship and is a core component of humanistic health care.[11-15] The manner in which health care providers express empathy for PWDs may contribute to the perception that the individual's disability is not fully appreciated.[16,17] Health care providers need a better understanding and greater awareness of needs and desires of PWDs, as well as increased knowledge of the attitudinal and environmental challenges they face. This awareness may lead to students considering ways to safeguard patients' rights and autonomy, act on behalf of patients, or be involved in championing social justice issues. Ultimately, health care professionals need to learn how to adequately convey empathy. Empathy towards PWDs has been linked to positive patient outcomes overall, including reduced physiological distress, improved self-concept, reduced anxiety, and increased satisfaction with treatment.[13,16,17]

Many people find it easier to be empathic toward others that are similar to themselves, in part because, personal experiences shape an individual's empathic understanding.[15,18] Consequently, a training program that conveys the perspectives of specific groups, such as PWDs, may be effective in developing *informed* empathic care. For the purposes of this study, "informed empathy" refers to knowledge about the impairments, activity limitations, and participation restrictions associated with having a disability as well as an appreciation of the personal impact these issues can have on individuals, their families, and those who provide their care.[19,20] PWDs report attitudinal barriers when trying to access healthcare.[9,21,22] Manifestations of attitudinal barriers are negative stereotypes, condescending or patronizing remarks, and the inability of others to see beyond an individual's impairment.[23] Such barriers may contribute to inadequate communication between patients and health care providers, lack of thoroughness when gathering patient data,[21,24,25] and suboptimal care and health inequities for PWDs.

The Commission on Dental Accreditation (CODA), Accreditation Standards for Dental Hygiene Education Programs state that graduates must be competent in providing dental hygiene care for children, adolescents, adults and geriatric patients, as well as assessing the treatment needs of patients with special needs.[26] Research has shown educational experiences involving PWDs are strongly related to one's confidence in treating such individuals as well as one's attitudes toward them.[3] An educational module, consisting of a 60 minute DVD, was designed by Miller[27] to create authentic representations of patients' experiences and to evoke reflection about attitudes, empathy, and the role of advocacy for health care professionals. The module included the written or recorded narratives of 11 men and 7 women, (aged 21–72 years), with diagnoses including spinal cord injury, lower extremity amputation, peripheral neuropathy, blindness, vasculitis, and cancer. Participants were asked to relate experiences that would enable listeners to put themselves in their place and understand how they felt and were perceived by others, along with any stereotyping they encountered. In addition to the narrative, participants were encouraged to provide an artistic interpretation (e.g., a drawing, a poem, or photographs) of their experiences which were linked to their personal story.

The purpose of this study was to investigate whether offering an education module focused on patient centered care for PWDs would change attitudes and promote advocacy for this population group among dental hygiene students. The study also sought to determine whether attitude assessment scores differed between students enrolled in a 4-year programs versus those enrolled in a 2-year program.

Methods

This study was declared exempt by the institutional review board of the University of Michigan. Study participants were dental hygiene students enrolled in core courses in one of two dental hygiene programs. Site 1 was a 4-year Bachelor of Science degree program affiliated with a large dental school; Site 2 was a 2-year Associate of Arts degree program in a community college. Neither site included empathy training for PWDs in their curriculum prior to beginning the study. The educational module, consisting of the DVD created by Miller[27] and a facilitated class discussion was offered to the same, 2-year community college and a 4-year university each year for five years, 2010 to 2015. Due to administrative decisions and time restraints, the selected schools did not choose to participate every year. Convenience samples were

used; students were primarily recruited to participate through Web-based course sites. One class was recruited in person because the course lacked a website. A total of 165 students, 128 (n=128) from Site 1 and 37 (n=37) from Site 2, were invited to participate in taking the pre- and post-module surveys. Students completing both surveys were entered in a random drawing for a $100 Visa gift card; one gift card was awarded per class. Students were given approximately two weeks to complete each survey.

Implementation

The educational module was taught in dental hygiene undergraduate courses at a large Midwestern university (Site 1) and a local inner-city community college (Site 2). All presentations of the DVD and discussion sessions were conducted by the same facilitator, acting as a guest speaker. The module was introduced in the second-year course, "Special Needs Patients," at the community college (Site 2), and it was introduced during the third-year courses "Community Dentistry" or "Special Patients," at the university (Site 1), depending availability of the facilitator. This educational module was the only curriculum content about the psychosocial aspects of PWDs included in the coursework. Faculty at both institutions were required to make the pre- and post-tests available and to act as hosts for the facilitator during class time. A brief history of society's changing views of PWDs and the prevalence of disabilities were discussed at the beginning of each session, along with an explanation of the DVD.

The module lasted approximately one hour at Site 1; while the module at Site 2 was three hours spread over two sessions. In order to build trust and create a safe environment for discussing sensitive topics, students were first asked low-risk questions related to their future career intentions. They were then asked if they had a family member or knew of someone with a disability, had worked with this population, or would like to share their personal feelings on this topic. Definitions of terms including but not limited to "disability," "health," and "advocacy" were discussed. Students were also asked about their experiences with PWDs and about advocating for patients requiring extra time or accommodations when receiving dental care. It was emphasized to the students prior to viewing the DVD, that the narratives were the speakers' own words and that the concepts discussed were chosen by the speakers to share with health care providers.

Class sizes varied from 18 to 29 students and the students viewed multiple segments of the DVD during the class session. After viewing 7 – 10 minutes of the DVD, the facilitator initiated the discussion by asking questions such as, "Which reaction/response did you understand the most or least?" and "Which accommodations are reasonable and how much is enough?" Students discussed their impressions and reactions in small groups followed by the whole class coming together for the small groups to present a summarization of their discussions. More detailed discussion of topics involving multiple members of the class followed the group presentations. Additional segments of the DVD were viewed and the discussion process was repeated.

Assessment Instruments

Assessment measures in this study included the Attitude Toward Disabled Persons - Form O (ATDP), the Attitude Toward Microsocial Advocacy (AMIA), and the Interpersonal Reactivity Index (IRI).[28] The ATDP, created to measure attitudes toward PWDs in general, rather than toward persons with specific types of disabilities, has been shown to provide an objective and reliable measure of attitudes toward persons with physical disabilities (α = .80).[28] Developed in 1960, the ATDP continues to be one of the most widely used instruments to measure attitudes toward PWDs,[29] serving as a reliable measurement of attitudes of persons with and without disabilities.[28] Validation and replication studies of the ATDP have identified differences in responses by gender.[28] Responses of persons without disabilities are assumed to reflect either acceptance of PWDs or rejection/prejudice, depending on whether they perceive PWDs as similar to themselves or different and inferior.[30] Conversely, responses of PWDs are based on the assumption that most PWDs will respond to the questions on the ATDP by using themselves as a frame of reference, providing information about their self-perception and perception of others with disabilities.[30] The ATDP is a self-report 20-item survey; respondents use a six-point Likert scale, from (-3) *I disagree very much* to (+3) *I agree very much*, to indicate the extent of their agreement or disagreement with each item. There is no neutral point and higher scores indicate a more favorable attitude. Individual item responses on the ATDP cannot be interpreted; only total ATDP scores are meaningful.[30]

The Attitude Toward Patient Advocacy scale was developed to evaluate nurses' attitudes toward patient advocacy.[31] For this scale, patient advocacy is conceptualized as a process or strategy consisting of a series of specific actions for preserving, representing, or safeguarding patients' rights, best interests, and values. Based on this conceptual framework, patient advocacy includes safeguarding patients' autonomy, acting on behalf of patients, and championing social justice.[31] This scale has two subscales, the Attitude Toward Macrosocial Advocacy (AMAA) and the Attitude Toward Microsocial Advocacy (AMIA). However, the educational module focuses on the

individual and his/her health care challenges and needs on a micro social advocacy level. [31] Therefore, only the AMIA subscale was used in the current study. The AMIA contains 45 items and responses are scored on a 6-point Likert scale ranging from (1) *strongly disagree* to (6) *strongly agree*; high scores reflect strong support for advocacy. In the original validity and reliability studies, the mean for the AMIA (45 items) was 244.67 (SD = 18.17) (α = .92)[31] with scores ranging from 45 to 270. For the purposes of this study, the AMIA wording was modified to address patients with disabilities. Two questions, "Health care providers should remind other health providers of the wishes of patients with disabilities," and "Health care providers should remind health providers of the needs of patients with disabilities," were combined to read, "I believe that health care providers should remind other health providers of the wishes and needs of patients with disabilities." Combining the two statements reduced the total number of items to 44, with scores ranging from 44 to 264.

The Interpersonal Reactivity Index (IRI), designed to capture individual variations in cognitive and perspective-taking tendencies along with differences in the types of emotional reactions experienced, was developed to assess the multidimensional nature of empathy.[32] The IRI consists of a 28-item, self-report questionnaire comprised of four 7-item subscales, each tapping into some aspect of the global concept of empathy and has been found to be one of the most reliable and valid measures of self-assessed empathy.[32] IRI subscale scores range from 0 to 28; higher scores indicate a stronger manifestation of that dimension of empathy. Responses are scored on a five-point scale from: (0) *does not describe me well* to (4) *describes me very well*.[32] The four subscales are: (a) fantasy (FS), which measures the tendency of the respondent to identify strongly with fictitious characters in books, movies, or plays; (b) perspective-taking (PT), measuring the ability to adopt the point of view of other people; (c) empathic concern (EC), measuring the tendency to experience feelings of warmth, compassion, and concern for others undergoing negative experiences; and (d) personal distress (PD), measuring the tendency to experience feelings of discomfort and anxiety when witnessing the negative experiences of others. [32] Significant differences between males and females on all subscales have been identified, with females having higher scores.[32]

Data Analysis

Paired *t*-tests were performed to evaluate the extent of change in students' performance on the pre- and post-module ATDP scores and AMIA scores. The IRI was administered pre-module only as the aspects of empathy measured by the IRI were not a focus of the curriculum and were not expected to change.

Pearson Correlations were performed to assess for associations between the IRI subscales and pre- and post-ATDP scores; and the IRI subscales and pre-and post-AMIA scores. Independent *t*-tests were performed to compare pre-module ATDP, AMIA and IRI scores between the two course sites.

Results

The outcomes represent the total number of students involved in the study, from the two sites, over a five year period, 2010 to 2015. Of the 165 students invited to participate (n=165), a total of 58 students (35 from Site 1 (n=35); 23 from Site 2 (n=23)) provided informed consent and completed the IRI, ATDP and AMIA pre-module survey, for an overall participation rate of 35%. Fifty students (n=50) from Site1 and 15 students (n=15) from Site 2 completed the ATDP and AMIA post-module survey. Students were required to submit both the completed pre and post surveys to be included in the study. The majority of the participants at Site 1 were white females aged 20-25 years and did not identify themselves as having a disability. Site 2 had higher number of participants who were 31 years and older, identified as black/African-American or Arabic and were male. Site 1 had a higher participation rate. Participant demographics are shown in Table I.

Prior to instruction, there were no statistically significant differences in the students' ATDP or AMIA scores (p >.05) providing the justification for aggregating students across courses into one group due to the small samples at each individual site.

The pre-educational module AMIA mean was 219.10 (SD = 29.24) and the ATDP mean was 77.73 (SD = 15.29). Following the educational module, the AMIA mean was 226.49 (SD = 24.93) and the ATDP mean was 80.63 (SD = 14.72). Paired *t*-tests showed a statistically significant increase in AMIA scores ($t(56)$ = -3.06, p = .003) however there were no statistically significant increases in the ATDP scores ($t(58)$ = -1.73, p = .087) as shown in Table III. Independent *t*-tests showed a statistically significant difference between Sites 1 and 2 on the IRI empathic concern subscale (Table IV). However, after Bonferroni corrections (.05/9 = .0056), the differences were not statistically significant.

Discussion

This study established the feasibility of an educational module utilizing a DVD featuring authentic representation of PWDs, along with student discussions and self-reflection. The active engagement of students encouraged self-reflection and consideration of the challenges PWDs face in general and

Table I. Participant Demographics

Age (years)	Site 1 n (%)	Site 2 n (%)	Combined Site 1 and 2 n (%)
20-25	26 (74.3%)	9 (60.0%)	35 (70.0%)
26-30	6 (17.1%)	2 (13.3%)	8 (16.0%)
31 and over	3 (8.5%)	4 (26.7%)	7 (14.0%)
Total responses	35	15	50
Race/Ethnicity			
Asian/Asian-American	4 (11.4%)	2 (8.7%)	6 (10.3%)
Black/African-American	1 (2.8%)	5 (21.7%)	6 (10.3%)
Native American	1 (2.8%)	0 (0.0%)	1 (1.7%)
White	26 (74.3%)	11 (47.8%)	37 (63.8%)
Other*	3 (8.6%)	5 (21.7%)	8 (13.8%)
	35 responses	23 responses	58 total responses
Gender			
Female	36 (63.2%)	21 (36.8%)	57 (96.6%)
Male	0 (0.0%)	2 (8.7%)	2 (3.4%)
	36 responses	23 responses	59 total responses
Identifies as Having a disability			
No	34 (97.1%0	6 (15.0%)	40 (97.6%)
Yes	1 (2.9%)	0 (0.0%)	1 (2.4%)
	35 responses	6 responses	41 total responses

* Site 1: 1 American, 1 Arabic/Arabic-American, 1 Multiracial;
 Site 2: 4 Arabic, 1 Lebanese

Table II. Mean performance on attitude and empathy measures across modules

Survey	Mean of aggregated modules*	ANOVA across modules
Attitude Toward Disabled Persons (ATDP)	77.73 (SD=15.29)	$F(6) = 1.02$, $p = .42$
Attitude Toward Patient Advocacy, Microsocial (AMIA)	219.10 (SD=29.24)	$F(6) = 1.04$, $p = .408$
Empathy subscales		
Fantasy	17.00 (SD=5.53)	$F(6) = .66$, $p = .68$
Perspective-Taking	19.05 (SD=4.88)	$F(6) = 0.66$, $p = 0.68$
Empathic Concern	21.71 (SD=4.58)	$F(6) = 1.03$, $p = 0.42$
Personal Distress	12.05 (SD=4.07)	$F(6) = 0.69$, $p = 0.66$

*95% CI

when obtaining health care. The module serves as an example of authentic patient-centered education resulted in a significant increase in participants' AMIA scores, possibly due to the process of students gaining informed empathy.

The composition of the DVD contributed to the overall effectiveness of the module. PWDs played a vital role in creating the DVD; without their participation, the education module would not have been possible. Each of the eighteen scenarios described a different disability, relating the experiences and perceptions unique to the person with that disability, and contributed to the likelihood of the students' ability to identify with various aspects of the narratives. Developing empathy is an initial step in developing advocacy for PWDs. In many group discussions, students stated that sympathy, or pity, were their first reactions at the beginning of the scenarios because they did not understand or could not relate to the experience of the speaker. However, as the students learned more about the individual and their disability, they were able to make connections and began to understand how they would feel if they were in the individual's place. Feelings that began as sympathy became empathy.

Narratives in the DVD conveyed generalized perceptions, not limited to medical scenarios. Consequently, class discussions were not limited to the interactions that a person with a disability might have with medical personnel or a health care system. Students were encouraged to consider and discuss inter-actions (experienced or observed) with PWDs and the attitudes expressed, reactions witnessed, and barriers and opportunities identified. This is important consideration because health care and its delivery are influenced by more than a diagnosis and most assessment tools, such as the ATDP and IRI, are not specific to medicine. Although the AMIA is specific to health care, classroom discussions about

Table III. Paired t-tests comparing the Attitudes Toward Disabled Persons scale and Attitudes Toward Microsocial Advocacy scale scores

Scale	Pre-module mean	Post-module mean	t-test equation
ATDP	77.73 (SD=15.29)	80.63 (SD=14.72)	$t(58) = -1.73$ $p = .087$
AMIA	219.10 (SD=29.24)	226.49 (SD=24.93)	$t(56) = -3.06$ $p = .003*$

$*p < .05$ statistically significant

Table IV. Independent t-test comparing the Interpersonal Reactivity Index sub-scale scores between Site 1 and 2.

Sub-scale	Site 1 mean	Site 2 mean	t-test equation
Fantasy	16.56 (SD=5.63)	17.70 (SD=5.40)	$t(48.46) = -0.78$ $p = .441+$
Empathic Concern	20.69 (SD=5.17)	23.30 (SD=2.88)	$t(56.19) = -2.48$ $p = .016+$
Perspective-Taking	18.17 (SD=5.23)	20.43 (SD=4.00)	$t(55.06) = -1.88$ $p = .065+$
Personal Distress	11.75 (SD=4.54)	12.52 (SD=3.23)	$t(56.24) = -0.76$ $p = .449+$

+ After Bonferroni corrections (.05/9=.0056)
no statistical significance

advocacy extended beyond medicine. Students were asked to discuss ways to advocate for the DVD speakers, what actions could be taken, and how they would feel in the same situation, creating an opportunity to teach about advocacy, an identified component of professionalism in many health professions, including dental hygiene.[34,35] Advocacy is a common thread throughout the dental hygiene curriculum and included in curriculum competencies. A patient-centered approach to advocacy education allowed the students to discern examples of advocacy that may be especially pertinent to PWDs. Knowledge about the multiple approaches and aspects of patient-centered care is critical for dental hygiene students as they provide individualized treatment for each patient including individual assessments, a dental hygiene diagnosis, treatment planning, and expected outcomes. Students who are able to better understand the psychosocial aspects of an individual, should be able to perform more accurate assessments, individualize and adapt the patient's dental hygiene treatment, and optimize patient care.

The DVD focused on eliciting participants' experiences with the health care they received, and any life experiences they felt were important for current or future health care professionals. Participants were encouraged to tell their stories in their own words allowing for an emphasis on the actions, attitudes, and feelings of personal importance. Besides voicing their verbal perspectives, participants also conveyed meaning through their tone, inflections, and passion in their speech allowing for the speakers to be regarded as individuals with unique concerns, not merely a disability or illness to be "fixed." Stories, art, paintings, and images, guided discussions about shared experiences and feelings, and self-reflection were used to assist students in understanding people who may be very different from themselves. This study demonstrates, as shown in previous research, that literature, film, and art are effective means for developing and enhancing informed empathy,[15,16] which may in turn, influence attitudes and advocacy towards PWDs.

Trends of the Interpersonal Reactivity Index (IRI) warrant further discussion. The empathic concern subscale, a sub-component of empathy, measures the tendency to experience feelings of warmth, compassion, and concern for others undergoing negative experiences.[32] Higher scores suggests a greater degree of empathy. Empathic concern, as measured by the IRI, was higher at Site 2. Differences in empathetic concern scores between Site 1 and Site 2 approached statistical significance. The difference in student demographics (Table I) may have played a role in the scores. Students from Site 1 (4-year program) were predominantly white and from backgrounds of higher socioeconomic status. However, the two-year program (Site 2) typically enrolls students who are older, and from racial and ethnic backgrounds that are historically underrepresented in dental hygiene. A higher rate of student participation from Site 2 may lead to higher empathic concern scores. Future studies with larger sample sizes may also demonstrate that higher empathic concern scores are associated with more positive attitudes toward advocating for PWDs.

Future studies could use qualitative research methods to better understand the process that contributes to improved scores on empathic measures among dental hygiene students. Creating broader educational experiences for dental hygiene students including working directly with a community of PWDs or working in clinical spaces that are designed to allow for interprofessional collaboration with other health care providers and PWDs could serve as key steps for developing increased empathy and understanding the challenges of PWDs. Another consideration for future study could be the longitudinal effect of this module on future clinical practice. Providers who were trained as students using this module might develop better communication with PWDs, resulting

in a more therapeutic relationship and improved patient / provider satisfaction. Lastly, studies involving a more balanced number of males and females might determine the effect of gender, if any, on assessment scores.

Strengths of this study include the use of well-established, validated assessment measures, and the matched pre- and post-education comparisons. Limitations include the relatively small number of participants, the cross-sectional methodology, and the use of questionnaires, which may have resulted in socially desirable answers. Student discussion questions varied between the groups of students, and may have affected the results. Participation of students from each site varied, with 62% participation from Site 1 and 27% participation from Site 2 suggesting a need for further research to determine the reasons for the variance. Additionally, students were recruited from only two sites. The majority of the participants were white females without disabilities. Therefore, the results may not be generalized to other populations.

Conclusion

The purpose of this study was to analyze the effectiveness of an innovative teaching approach used to develop dental hygiene students' understanding of and ability to work with patients with disabilities, at a 2-year and a 4-year teaching institution. The module was composed of pre- and post-surveys, a DVD presenting individual narratives by and about PWDs, and classroom discussions. The introduction of this approach, based on informed empathy with a focus on the experiences of PWDs, resulted in improved attitudes toward advocacy for PWDs among the dental hygiene students at both institutions. The ability to recognize and effectively fulfill patient advocacy needs is a vital component of dental hygiene education for optimizing patient oral health care. This educational module, and others like it, can improve attitudes toward PWDs.

Darlene M. Jones, RDH, MPA is a clinical lecturer in the Division of Dental Hygiene; *Sonya R. Miller, MD* is a former assistant professor of physical medicine and rehabilitation and clinical assistant professor of learning and health sciences; both at the University of Michigan, Ann Arbor, MI.

Corresponding author: Darlene M. Jones, RDH, MPA; dmjrdh@umich.edu

References

1. U.S. Census Bureau. American community survey 1-year estimates - disability characteristics [Internet]. Washington, D.C.; U.S. Census Bureau: 2015, [cited 2017 February 20]. Available from:https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_1YR_S1810&prodType=table.

2. Institute of Medicine, National Research Council. Improving access to oral health care for vulnerable and underserved populations. Washington, D.C.: National Academies Press; 2011. P. 18-9.

3. Inglehart MR, Schneider BK, Bauer PA. Providing care for underserved patients: endodontic residents', faculty members', and endodontists' educational experiences and professional attitudes and behavior. J Dent Educ. 2014 May;78(5):735-44.

4. Institute of Medicine. Crossing the quality chasm: a new health system for the 21st century. Washington, D.C.: National Academies Press; 2001.p. 5-7.

5. Institute of Medicine. Envisioning the national health care quality report. Washington, D.C.: National Academies Press; 2001.p. 41-3.

6. Smith DL. Disparities in patient-physician communication for persons with a disability from the 2006 medical expenditure panel survey (MEPS). Disability Health J. 2009 Oct;2(4):206-15.

7. Agency for Healthcare and Research Quality. National healthcare disparities report [Internet] Rockville (MD): U.S. Department of Health and Human Services; 2010, [cited 2011 July 22]. Available from: www.ahrq.gov/qual/nhdr10/nhdr10.pdf.

8. Drainoni ML, Lee-Hood E, Tobias C, et al. Cross-disability experiences of barriers to health-care access. J Disabil Policy Stud. Sep 2006;17:101 - 15.

9. Morrison EH, George V, Mosqueda L. Primary care for adults with physical disabilities: perception from consumer and provider focus groups. Fam Med. 2008 Oct;40(9):645-51.

10. Becker H, Stuifbergen A, Tinkle M. Reproductive health care experiences of women with physical disabilities: a qualitative study. Arch Phys Med. 1997 Dec;78(12, Suppl):S26-33.

11. Suchman AL, Matthews DA. What makes the patient-doctor relationship therapeutic? Exploring the connexional dimension of medical care. Ann Intern Med. 1988 Jan;108(1):125-30.

12. Reynolds WJ, Scott B, Jessiman WC. Empathy has not been measured in clients' terms or effectively taught: a review of the literature. J Adv Nurs. 1999 Nov;30(5):1177-85.

13. Rogers CR. Empathic: an unappreciated way of being. Couns Psychol. Jun 1975;5(2):2-10.

14. Spiro H. What is empathy and can it be taught? Ann Intern Med. 1992 May 15;116(10):843-46.

15. Larson EB, Yao X. Clinical empathy as emotional labor in the patient-physician relationship. JAMA. 2005 Mar 2;293(9):1100-06.

16. Reynolds WJ, Scott B. Do nurses and other professional helpers normally display much empathy? J Adv Nurs. 2000 Jan;31(1):226-34.

17. Moore LA. Being empathetic: benefits and challenges for the clinician and client. Top Stroke Rehabil. 2010 Jan-Feb;17(1):20-9.

18. Williams J, Stickley T. Empathy and nurse education. Nurse Educ Today. 2010 Nov;30(8):752-55.

19. Young A, Connor-Greene P, Waldvogel J, Paul C. Poetry across the curriculum: four disciplinary perspectives. Lang Learn. 2003;6(2):14-44.

20. Connor-Greene PA, Murdoch JW, Young A, Paul C. Poetry: it's not just for English class anymore. Teach Psychol. 2005;32(4):215-21.

21. Smeltzer SC, Sharts-Hopko NC, Ott BB, et al. Perspectives of women with disabilities on reaching those who are hard to reach. J Neurosci Nurs. 2007 Jun;39(3):163-71.

22. Nosek M, Hughes R, Howland C, et al. The meaning of health for women with physical disabilities: a qualitative analysis. Fam Community Health. 2004 Jan-Mar;27(1):6-21.

23. Thomas C. Medicine, gender, and disability: disabled women's health care encounters. Health Care Women. Int 2001Apr-May;22(3):245-62.

24. Iezzoni LI. Make no assumptions: communication between persons with disabilities and clinicians. Assist Technol. 2006 Fall;18(18):212-19.

25. Iezzoni LI, Davis RB, Soukup J, O' Day B. Quality dimensions that most concerned people with physical and sensory disabilities. Arch Intern Med. 2003 Sept 22;163(17):2085-92.

26. American Dental Association, Commission on Dental Accreditation. [Internet]. Chicago: American Dental Association; 2013 [cited 2016 December 14]. Available from: http://www.ada.org/~/media/CODA/Files/predoc.ashx.

27. Miller SR. A curriculum focused on informed empathy improves attitudes toward persons with disabilities. Perspect Med Educ. 2013 Jun;2(3):114-25.

28. Yuker HE, Block JR, Young J. The measurements of attitudes towards disabled persons. Human resources center, Alterson (NY): Social and Rehabilitation Service, Department of Health, Education and Welfare;1970. 178p.

29. Lam W, Gunukula S, McGuigan D, et al. Validated instruments used to measure attitudes of healthcare students and professionals towards patients with physical disability: a systematic review. J Neuroeng Rehabil. 2010 Nov 9;7(1):55.

30. Yuker HE, Block JR. Research with the attitudes towards disabled persons scales (ATDP) 1960 - 1985. Hempstead (NY): Hofstra University; 1986. P. 1-87.

31. Bu X, Wu YB. Development and psychometric evaluation of the instrument: attitude toward patient advocacy. Res Nurs Health. 2008 Feb; 31:63-75.

32. Davis MH. A multidimensional approach to individual differences in empathy. Catalog Sel Doc Psychol. 1980;10:85-104.