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Mini-Med School: Developing Partnerships with the Community and Between Health Professions and Students

Annette I. Peery and Kathryn M. Kolasa

Abstract

Often in the high-tech, fast paced arena of health professions education, community engagement may be ignored. One rural, Southern university with a large health sciences division did not allow this to occur and has provided an opportunity for engagement and scholarship through a Mini-Med School. This multi-session education experience introduces members of the general public to academic and professional experiences of a medical education, and includes an interactive health fair session. The health fair session relies on the collaboration of multiple health professions – medicine, nursing and dietetics, thus promoting faculty and students from these health professions to engage in dialogue, training and interaction with each other and the community participants. This activity has been deemed extremely successful in promoting engagement of individuals and groups on multiple levels and thus provides an exemplar for others to follow.

Introduction and Background

Since the early 1990's, scientists and interested lay people have met in the Mini-Med Schools experiences throughout the U.S. Mini-Med school, in some locations, is an open lecture series. In others, like the one offered at the [University] from 1998-2002 and again in 2007, is a multi-session education experience exposing members of the general public to the academic and professional experiences of a medical education. The Mini-Med school is designed to foster a better understanding of the role medical school and related programs such as Nursing and Allied Health, plays in its community. There have been few papers describing this program, although the National Institutes of Health (NIH) Office of Science Education published a planning guide (2006). This paper, then, is meant to describe how one southeastern university medical school conducted a Mini-Med school, the partnerships developed between the school and the community as well as between health professionals and students engaged in this effort. We also report on the results of the "Doctoring Experience", one of the experiential learning activities for participating community members.

Mini-Med School

The concept was brought to the School of Medicine by a representative from the [company] that provided a small unrestricted grant for the first three years and the program was offered subsequently for five consecutive years. It was offered with internal funding for an additional two years. The program included a variety of presentations offered over a 6 week period.. These dealt with cutting edge developments in medicine and provided

hands on learning with new technology as well as question-and-answer sessions among faculty and participants. . The sessions, attended by more than 500 individuals were taught by physicians and researchers in their fields who were chosen for their ability to make the technical language of medicine understandable to the non-medical public and who volunteered their time.

The objectives of the program were to assist participants to develop understanding of the following: 1) The primary care mission of the University; 2) the disease and health conditions especially prevalent in the region; 3) the growing emphasis in medicine on health improvement and disease prevention; and, 4) the importance of research in improving health care.

Methodology

The program highlighted health concerns of the region and included heart disease and stroke, cancer, diabetes and obesity. Special areas of training received by some health professional disciplines were included, such as biomedical research, medical humanities and ethics, medical communication and patient education, and the use of evidence based medicine. The program also demonstrated some of its treatments and telemedicine, along with lower technology training of students using standardized patients.

Integral to the programming was an interactive activity during each session. The goal was for each participant to leave the session with a new skill from calculating their own Body Mass Index and assessing the heart healthfulness of their personal diet to identifying quality web sites to using the tools of Evidence Based Medicine to answer their personal clinical questions. Mini-Med school was a

popular program based on its high attendance rates, waiting lists for the next offerings and comments made on evaluations completed after each session rating the quality of the presentations and interactive activities. We wanted, however, to have a more objective measure of the impact of Mini-Med School and chose to evaluate the impact of the “Doctoring” experience which gave participants information about their own health status.

In 2003, The Institute of Medicine called for educating all health professionals to deliver collaborative patient-centered care via interprofessional practice (Greiner & Knebel, 2003). Our 2007 Mini-Med school provided student volunteers an excellent opportunity to experience interprofessional practice. Thirty-six students from dietetics, nursing, and medicine along with primary care resident physicians, interacted with each other and Mini-Med school participants in a “Doctoring” experience. All students, within their own professional school, completed the University and School of Medicine confidentiality module. The students of the various disciplines were trained together, by health professions faculty, to manage stations where each participant had their diet analyzed, body composition measured, lifestyle screened for diabetes, hypertension and cardiovascular disease. Most of the students had no direct experience or training with these measurements. An Interprofessional Training Session was held the week prior to the “Doctoring” experience which included a review of confidentiality concepts and practicing the measurements on themselves and each other. In the earlier Mini-Med schools faculty managed these stations but only provided oversight during the 2007 event.

The students experienced “Doctoring” from a patient’s viewpoint, increasing their sensitivity to patient concerns. They had the opportunity to informally interact with the general public about their desires to serve their community in a health profession. Students learned psychomotor skills such as finger stick blood sugars, insulin injections, taking a blood pressure, and measuring ankle-brachial index and learned the value of screenings to educate and empower healthcare consumers to promote change in health behaviors. Students also had the opportunity during the “Doctoring” experience to improve their communication skills with consumers.

Community Participants (Sample)

Participants to the Mini Med School were recruited through a mailing to community leaders as well as paid newspaper advertisements. The promotional literature promised the participants

that the program would enlighten, entertain, and familiarize participants with medical terminology and to provide insight into biomedical research and patient care.

Adult men and women from a wide variety of occupations, and who had a strong desire to learn more about medicine and medical education and were willing to commit 18 hours over a period of six weeks to fulfill this wish enrolled in the sessions. The class size was typically limited to 90 people on a first-come-first-serve basis.

Prior to the 2007 Mini-Med School, IRB approval was obtained from the University and Medical Center Institutional Review Board of [University] to collect survey data concerning the participants. Additionally, participants signed a consent form on the first night of the Mini-Med School after attending a presentation on the process of Human Subject Research Review. Participants were able to refuse to participate in any component of the program and their consent to participate in the results reported in this paper was based upon them voluntarily turning in a copy of the form at the end of the session.

Data Collection

During the “Doctoring Experience,” participants were divided into small groups and had the opportunity to rotate through eleven interactive stations where they learned to use the same screening tools medical students employ to help adult and pediatric patients understand how their lifestyle contributes to obesity and chronic disease (previously discussed). Each participant received a “Doctoring Experience Report Card” on which the results of their screenings, as well as their answers to some health history questions, could be recorded. The participants retained a copy and a copy was turned in for a door prize drawing, if the participant desired to do so. All participation was completely voluntary and participants completed only the questions and activities they desired.

Instruments

Participants had the opportunity to complete a variety of screening and assessment instruments at the various stations during the “Doctoring Experience,” and were able to record their results on the “Doctoring Experience Report Card.” The “Doctoring Experience Report Card” allowed participants to enter results of the previous instruments, results of blood pressure and blood glucose readings, and to answer questions regarding their health and health-related behaviors. Other

instruments included a Calcium IQ Quiz, Rate Your Plate (non-DASH version) dietary assessment, and Diabetes Risk Test. “Rate Your Plate” and the “Calcium IQ Quiz” provide quick assessments and have been developed or revised and evaluated by dietitians in the [University] Department of Family Medicine.

The “Calcium IQ Quiz” has participants answer calcium intake related questions based on their previous day’s dietary intake. Based upon that intake, 1 to 3 points are given for various calcium containing foods/beverages and the total points then multiplied by 100 resulting in the approximate milligrams (mg) of calcium consumed in the previous day. Participants can then compare this amount to the recommended daily allowance for their age and gender. (ECU Family Practice Center, 1999)

The “Rate Your Plate” instrument assesses how individuals are doing in making healthy choices related to their eating patterns based upon their typical, or usual, intake of various foods. The “Rate Your Plate” scores are interpreted as follows: 18 to 28 points = there are MANY ways to make your eating patterns healthier; 28 to 41 points = there are SOME ways to make your eating patterns healthier; and, 42 to 54 points = you are making MANY healthy choices. (ECU Family Practice Center, 1998).

The “Diabetes Risk Test” (National Diabetes Education Program, 2011) helps determine one’s risk of developing pre-diabetes or type 2 diabetes. The guide one through a brief series of “yes/no” questions with points assigned to each. A score of 10 or greater represents that an individual has an increased risk of developing pre-diabetes or type 2 diabetes if they continue with their current lifestyle.

Results

Sixty-four (91%) of the 70 participants completed the evaluation. Of these 70% reported that they participated in most of the interactive stations.

Participants were asked whether they found the interaction with the students to be a positive experience and all responded that their interactions were very positive. Following is a summary from the 2007 Mini-Med School of the demographics of the participants as well as an overview of their “Doctoring Experience” results indicating their own health status.

Demographics

Data were collected from 64 participants, representing 91% of the entire group. The mean age of the sixty-four respondents was 47 years, with an age range of 19 to 86 years. The majority were female

(63%) and Caucasian (83%). Forty-seven percent held a graduate degree while only 4% held a high school diploma as their highest degree earned. In terms of internet use, 12% reported that they never or infrequently used the internet and 47% reported using the internet often. Additionally, 71% of respondents reported that they had taken information they found on the web with them to discuss with their physician, indicating that consumers do seek health information on their own.

Weight and Body Composition

Participants had the opportunity to determine their height, weight, waist to hip ratio, body mass index (BMI) and answer questions related to their weight as a child as well as the weight of their own children. In this sample, 18 (28%) had a BMI of between 25 and 30 kg/m² while another 18 (28%) had a BMI greater than 30. Of those with a BMI equal to or greater than 30, only 8 (13%) reported being overweight as a child and most reported (10, or 56%) becoming overweight after the age of 20. Of those with a BMI > 25, only 15 (23%) reported that a physician broached the subject of weight with them, and 19 (83%) of those reported that they had attempted at some point to lose weight after their physician mentioned it.

Healthy Eating and Physical Activity

Forty-seven participants reported their score on the “Rate Your Plate” instrument, which assesses whether or to what extent individuals are making healthy choices related to their eating patterns based upon their typical intake of various foods. Of these participants, 36 (76.6%) had a score of 42 or higher, indicating that the majority of the respondents were already making healthy choices in regards to their eating patterns.

Forty-nine participants reported their score on the “Calcium IQ Quiz.” It is recommended that individuals age 19 to 50 years have a daily calcium intake of 1,000 mg and those over 50 years 1,200 mg (NIH, 2011). Of the respondents, only 13 (26.4%) reported a calcium intake of 1,000 mg or more over the past 24 hours.

Participants were also asked if their physician had ever encouraged them to walk, be active for at least 30 minutes a day on most days of the week and/or do strength training at least two days a week. Although 20 (62.5%) or the 64 participants reported that they followed their physician’s recommendations for physical activity most of the time, only 8 (11.4%) respondents reported that their physician had encouraged them to walk, 11 (15.7%) were told by

their physician to be active for at least 30 minutes a day on most days of the week, and only 7 (10%) were encouraged to engage in strength training at least two times per week.

Diabetes

In this sample (N=64), 7.8% reported having been diagnosed with diabetes and all were taking either oral medication and/or insulin. While only 5 (7.8%) reported a diagnosis of diabetes, only 6 (9.4%) had been told by their physician at some time that their blood glucose level was high.

Participants had the opportunity to have their blood glucose levels checked via a finger stick. These were considered random blood glucose readings as they were taken without regard to when the individual last ate food. A blood glucose reading is one of the assessments used to assist in diagnosing diabetes. The American Diabetes Association 2008 Clinical Practice Guidelines state that a random blood glucose level of 140 to 199 mg/dL may be diagnostic of pre-diabetes, while a random level of 200 mg/dL or higher may be diagnostic of diabetes (American Diabetes Association, 2008). Of the participants who completed this screening (N=60), fifty-four (90%) had a random blood glucose level between 71 and 129 mg/dL, 4 (6.7%) between 142 and 160 mg/dL (pre-diabetes range), and 2 (3.3%) of 200 mg/dL or greater (diabetes range). Participants also had the opportunity to complete the American Diabetes Association Diabetes Risk Test. A score of 10 or greater represents that an individual has an increased risk of developing diabetes if they continue with their current lifestyle. Of the 36 participants who reported their score on this risk test, 11 (30.6%) reported a score of 10 or greater, indicating an increased risk of developing pre-diabetes or type 2 diabetes.

Cardiovascular Disease

In this sample, 6 (9.4%) of respondents reported they had been diagnosed with hypertension (systolic BP > 140 or diastolic > 90, for those without diabetes (NIH NHLBI, 2008). Medications for hypertension were used by 5 (7.8%) and 6 (9.4%) had been encouraged to eat less salt to assist in managing their hypertension. Thirty-one of the participants had their blood pressure taken and recorded. The actual blood pressure results of participants that were normal or hypertensive were as follows:

Normal systolic pressure – 13 (41.9%)
Normal diastolic pressure – 20 (74.1%)
Hypertensive systolic – 2 (6.5%)
Hypertensive diastolic – 1 (3.7%)

Information related to cholesterol, LDL, HDL and triglyceride levels was self-reported. In this sample, 14 (87.5%) reported having their cholesterol tested within the past two years and only 5 (7%) of participants reported the values for their LDL, HDL and triglyceride levels (the majority of which were within the desirable range). Of the respondents, 16 (38%) reported that they had been told that their cholesterol was too high and 12 (30.8%) had been encouraged to change their diet due to this, but only 7 (10%) reported actually making dietary changes and 8 (18.6%) stated they take medication for their high cholesterol levels.

Motivation to Change

Participants in “The Doctoring Experience” were asked, “Based on what I learned today, I am motivated to change personal behavior.” Of the respondents, 56 (86.2%) replied “yes”.

Satisfaction of the Interdisciplinary Teams

Students participating in the interdisciplinary teams responded to an open-ended survey concerning the experiences. The student volunteers from all disciplines were extremely positive as they reflected on the experience, with 100% reported satisfaction with the experience.

They were asked “in what capacity did you interact with students from disciplines other than your own?” One student responded: “The training session was very informative and taught me skills I would not have learned if I chose not to participate. . . . I liked the interaction of the program with (other) students . . . The idea of the entire program combining the disciplines and working together was great! We should be working together, our studies overlap and join in so many ways!”

When asked “what was the most beneficial aspect of this experience for you?” the responses included:

–“I had the incredible opportunity to learn new skills that I would have probably never had the chance to learn. . . . they really help to put things in (perspective) for me from the eyes of a patient.”

–“Interacting with the community.”

–“The most beneficial aspect of this program was definitely the training session. I also enjoyed the one-on-one time with the individuals coming through. The random questions some individuals came up with were fascinating, and it was also interesting how much information they expected me to know.”

Discussion

For these respondents, the rates of overweight and obesity were slightly lower than the national average. In the United States, about two-thirds (66%) of adults age 20 and older are overweight or obese as indicated by a BMI of > 25 . Of these nearly one-third (31.4%) are considered obese, with a BMI > 30 (NIH NIDDK, 2007). In this group the comparable percentage was 56%. It may be that this group was more highly educated and therefore more aware of the importance of maintaining a healthy weight. It is also interesting to note that this group scored highly on the “rate your plate” exercise indicating that as a whole they are making healthy food choices. Yet the majority are still in the overweight or obese category.

The majority of respondents, 62.5%, reported that they followed their physician’s recommendations for physical activity most of the time. This number seems quite impressive as only 26% of adults in the U.S. engage in vigorous leisure-time physical activity three or more times per week and 59% do no vigorous physical activity at all in their leisure time (NIH NIDDK, 2007). We note, however, that less than 25% reported that their physicians discussed their weight or exercise regimen with them. This is consistent with other reports in the literature reporting that physicians and nurse practitioners do not readily discuss weight control issues (Pollack et al, 2010).

In the United States, as the prevalence of obesity has increased, so has the prevalence of diabetes, particularly type 2 diabetes. In 2007, the prevalence of diagnosed and undiagnosed diabetes in the U.S. for all ages was estimated to be 7.8% of the population. (U.S. Department of Health and Human Services, 2008). In this group 8.1% reported having been diagnosed with diabetes, thus they were comparable in this aspect to national norms.

Changing one’s lifestyle and health behaviors may be met with multiple starts, relapses, re-evaluations and restarts. Prochaska and DiClemente describe this cycle in their change theory, which includes six stages:

- 1) Pre-contemplation (resisting change)
- 2) Contemplation (thinking about change, but not considering it within the next month)
- 3) Preparation (getting ready to change; plan to act within one month)
- 4) Action (practicing new behavior; 3 to 6 months)
- 5) Maintenance (continued

commitment to sustain new behavior)

- 6) Termination (if no relapse, new behavior is habit) OR Relapse (resume old behaviors) (Kritsonis, 2004; Littell & Girvin, 2002)

The participants in this program would most likely be in the second or third stage of change. One might assume that some resistance has been overcome through the program participation. The positive response to the item asking about plans to change would suggest that change is under consideration or that the individual might be actively planning how to bring about the change.

Engagement on Multiple Levels

Mini-Med School in this University has united the University and Health Sciences Division and the community at-large and has been successful at integrating teaching, research, service and community engagement. Community members engaged in this experience were able to see and experience first-hand what the major University in their area has to offer the region in terms of health care and in education of health professionals to serve this region. They had opportunities to learn about current, cutting-edge topics and research in healthcare and how it might relate to them. Additionally, they had the opportunity to learn more about their own health, through the “Doctoring Experience”, and how to promote a healthier lifestyle for themselves and their families.

In conclusion, interprofessional work with multiple disciplines can lead to extremely successful interactions, events and engagement. The Mini-Med School program was an example of such a successful interaction. All groups involved in this project interacted with one other and found that a positive activity. Future evaluation should focus on determining the degree of impact the program has had in bringing about healthier behaviors in the participants and also the effect of interprofessional education activities on each professional group.

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