Bridging Medical Student Stress and ACGME General Competencies: A Pilot Study of the Problem-Solving Conference

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Abstract

Background: Medical students encounter a number of problematic issues during transition periods in clinical training. The Problem-Solving Conference (PSC) was developed to provide a platform for students to disclose these issues and to explore whether the Accreditation Council for Graduate Medical Education (ACGME) General Competencies might provide solutions. This pilot study aimed to evaluate the feasibility and applicability of PSC program.

Methods: All of the 15 students from the Department of Chinese Medicine participated in the conference bi-weekly from June 2006 to May 2007. For each PSC session, students completed a form describing problems they had encountered and associating them with the ACGME General Competencies. The program director and clinical teachers of the PSC reviewed these forms before initiating the conference. Finally, the students completed a satisfaction survey by the end of the one-year program.

Results: Based on a total of 250 forms completed, clinical problems linked with: systems-based practice (21.2%), practice-based learning (13.3%), interpersonal communication (13%), and professionalism (12.8%). Furthermore, 29.9% of the problems had a negative impact on future practice. The most frequent coping strategies were: using instrumental support, acceptance and active coping. Most participants were satisfied with the PSC format and instructors’ feedback. While students recognized the educational value of the PSC, they suggested that it should be held less frequently.

Conclusions: The PSC is an innovative, learner-centered and competency-oriented program. The program creates opportunities for face-to-face communication and helps students to cope with problems related to the ACGME General Competencies. Thus, the PSC appears to be a useful clinical teaching method.

Introduction

The major goal of medical education is to foster qualified physicians. To achieve this goal, medical schools have developed a well-rounded curriculum that instills medical students with the competencies they need to practice effectively. However, this intense medical training creates pressure, which could lead to further anxiety, depression, or burnout. There are a number of possible sources of distress for students, including schoolwork, job responsibilities, financial concerns, sleep deprivation, and exposure to the suffering and death of patients. If this distress is not addressed, it can lead to impaired academic performance, dishonesty, cynicism, substance abuse, or even suicide [1-3]. Radcliffe and Lester [4] found that the most stressful periods for medical students are the transition periods, particularly those between high school or college and medical school, preclinical and clinical training, and the period from clinical training to qualification. Although the Office of Student Affairs provides consulting and counseling services to medical students, students may hesitate to seek help. Furthermore, clinical duties and research make it difficult for clinical teachers to attend to students’ needs and questions that arise from their lack of experience. Therefore, there exists a need for a system to reduce the stress of medical students during clinical training.

The Accreditation Council for Graduate Medical Education (ACGME) requires residents to demonstrate six general competencies (patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice) [5]. These competencies were adopted by the Maintenance of Certification program of the American Board of Medical Specialties (ABMS) for physician specialists [6]. The six general competencies were also adopted as learning objectives at various medical schools in Taiwan, including China Medical University [7]. Although undergraduate medical students learn the six general competencies in their pre-clinical courses, they need assistance to develop these competencies. An innovative program, the
Problem-Solving Conference (PSC), was initiated to link the problems students encounter during clinical training to ACGME competencies that might solve those problems. The PSCs are designed to: (1) provide a learner-centered platform for students to disclose their problems; (2) allow students to explore the competencies that might solve to their problems; and (3) allow the program director and clinical teacher to provide feedback accordingly. The purpose of this preliminary study was to check the feasibility and applicability of PSC, and to improve the design of the pilot program.

Methods

The PSCs were led by a program director and a clinical teacher. Before each PSC, medical students were asked to report a problem they had encountered during the previous two weeks on a PSC form, which contained the following items: (1) briefly describe the problem or difficult incident, (2) why did the problem or incident make you feel confused, or what was your feeling toward the problem or incident, (3) how did you handle the problem or incident, and (4) how does the problem affect your future career? In addition to answering these four questions in detail, students were required to choose one or more of the six ACGME General Competencies that might solve their problem. Detailed descriptors for the competencies were listed as references on the back of the PSC form. PSCs were held every other week with these forms reviewed by the program director and clinical teacher before each conference. In a warm and welcoming environment, the problems were discussed anonymously for privacy protection, and experiences were shared. Forms and teacher feedback were documented for analysis.

Each year about 15 students from the School of Chinese Medicine of China Medical University took their clinical clerkship in Beigang Hospital. From June 2006 to May 2007, all 15 clerkship students participated in this study, including 8 students from the 8-year program (6 males and 2 females) and 7 students from the 5-year program (3 males and 4 females). A total of 17 PSCs were held, and students attended an average of 14.7 (86.47%) conferences with a range from 10-16 (58.82 - 94.12%). A total of 250 forms were completed. The relationship between problems and competencies was examined and analyzed, and coping strategies were parsed into 14 categories according to the Brief COPE [8]. All students completed a written survey at the end of clinical training to rate their satisfaction with the content, frequency, and appropriateness of the PSCs using a 5-point Likert scale (5 = strongly agree, 1 = strongly disagree). The survey also provided a forum to share suggestions.

Results

The distribution of problems according to ACGME General Competencies and impact on future practice is shown in Illustration 1. A total of 76.8% of problems were related to competencies, while the remaining 23.2% were categorized as “other” and were mostly related to everyday life. The most common competency related to the problems was systems-based practice (21.2%), and the least common was medical knowledge (7.5%). As shown in Illustration 1, 51% students perceived negative or positive impacts of the problems reported on their future practice: 29.9% had negative or very negative impact, and 21.2% had positive or very positive impact. The problems that fell into the competencies of interpersonal communication, professionalism, and systems-based practice tended to have higher negative impact rates, which were 33.3%, 34.1%, and 37.0% respectively.

As shown in Illustration 2, the most frequent coping strategies were: using instrumental support (20.6%), acceptance (19%), and active coping (18.4%). Strategies that were not reported in the present study were: using emotional support, religion, denial, or substance (alcohol/drug) use. The majority of students were strongly satisfied or satisfied with the PSC program (80%), the replies and feedback of the director and clinical teachers (86.7%), the format of the PSC form (53%), and the description of the PSC form (60%). Ten of the 15 students (67%) agreed or strongly agreed the educational value of the PSC program, four students with neutral answer and only one student from 5-year program disagreed this. The survey also showed the trend that most of the participants from the 8-year program held more positive attitudes, as mentioned above, toward the PSC program than those from the 5-year program. Nevertheless, 80% of the participants found the bi-weekly frequency of the PSC too intense, and 73.3% stated that a monthly PSC would be more appropriate.

Discussion

China Medical University offers two Chinese medicine programs: an 8-year program open to high school
graduates and a 5-year program open to post-baccalaureates. Both programs offer one year of clinical training in Chinese medicine and acupuncture to bridge the gap between theory and clinical practice. Under the supervision of the director and clinical teachers of the Department of Chinese Medicine, China Medical University Beigang Hospital, students are given opportunities to conduct clinical work, such as outpatient services, clinical skills, and consultations. During clinical training, they must not only learn professional knowledge and skills, but also how to handle multifaceted relationships with patients and colleagues, including nurses and physicians. Studies have shown that medical students' lack of confidence and patients' distrust of medical students hinders training [9,10]. In addition, the interactions between medical students and nurses may be a barrier [10,11]. Nadolske et al. [10] demonstrated that medical students and nurses ranked interactions with each other with the worst relational coordination score. In the present study, among the 250 PSC forms, most of the problems were caused by students' interaction with patients, nurses, and physicians. The PSC severed as a platform for clinical teachers to provide students with suggestions, guidance, and encouragement, which should have a positive impact on the transition period from pre-clinical to clinical training.

Pitkala et al. [12] observed that the intense stress of medical students often derives from strong emotional experiences rather than lack of medical knowledge. Students may feel like outsiders and may be afraid of being humiliated by more experienced hospital staff. This study showed that students considered incidents related to medical knowledge and patient care the least troublesome, supporting the previous study. Conversely, events related to systems-based practice were most problematic. It is interesting to note that the research questionnaire analyzed by Li et al. indicated that the competency of graduates in systems-based practice was considered to be the least adequate [13]. Future medical education should emphasize the interaction between students and the healthcare system. Furthermore, (23.2%) of the problems were not related to competencies in the present study, and most of these were caused by inconvenience and dissatisfaction of living conditions. The main reasons for these issues could be the rural location of the Beigang Hospital and that the facilities are not as up-to-date. However, the problems were improved after communicating with the students. To avoid having the PSC become a house-keeping meeting, the students were asked to describe at least one incident related to clinical learning in addition to living issues.

As a result, problems related to living issues were raised less frequently toward the end of the year. This study indicated that 30% of the medical students' problems and concerns would cause negative impact on their future practice. The purpose of the PSC is to help students to solve their problems through general competencies and positive attitude, thus decreasing the negative impact of problems on future practice. Previous findings implied that medical students tend to rely on alcohol, tobacco, or drugs to cope with their anxiety [14,15] However, Shaikh et al. found that medical students in Pakistan relieve stress by spending time with friends, sleeping, listening to music, engaging in sports or spending time alone [16]. Sreeramaroddy et al. used the Brief COPE with Nepal medical students and found that they commonly used strategies of positive refocusing, planning, acceptance, active coping, self distraction, and emotional support [17]. The present study indicated the students used similar coping strategies as those shown in previous studies. In addition, other strategies, such as using instrumental support (including asking for advice), behavioral disengagement, and venting were widely adopted. Drug or alcohol use was not reported as a coping strategy in the present study.

The final survey, conducted near the end of the clinical training, showed that most of the participants were satisfied with the PSC. Moreover, 87% were satisfied with solutions and feedback provided by clinical teachers. The results indicate that PSCs will run smoothly if the program director and clinical teachers review PSC forms before the conference and provide feedback in a warm and friendly way. In comments on the PSC form, some students questioned why problems should be written on PSC form and linked with the general competencies. The rationale for this exercise was that language has been shown to facilitate thought [18]. Therefore, having students put their problems in writing not only provides them a great opportunity to stop and think, but also facilitates defining the root of these problems. Furthermore, linking problems to the ACGME general competencies through PSC could reveal competencies in which students require more training. Guiding medical students to solve their problems using ACGME competencies is a basic theme of PSC. The purpose of PSC is to train students to think systematically about whether they have shortcomings in their medical knowledge, especially when they initially encounter the problem. A more detailed explanation of this process should be communicated to students when PSCs are implemented in the future.

The present study showed the trend that students from the 8-year program (average age 26.5±0.9, range
from 25 to 28 years) held more positive attitudes toward the PSC than those from the 5-year program (average age 34.3±2.4, range from 31 to 42 years) and considered the conference more helpful to clinical training. A possible explanation for this disparity could be that most students from the post-baccalaureate program had some work experience and encountered fewer problems, which may have reduced the educational value of the PSC for this population. In addition, post-baccalaureate students might already have formed their own philosophy of the medical practice and could be reluctant to share their feelings in the PSC. Medical students from the 5- and 8-year programs differ in age, background, life experience, and motivation to become physicians. Their differing attitudes toward the PSC will be worth investigating further in future research.

The final survey showed that 80% of the participants felt that bi-weekly PSCs were too frequent and caused exhaustion. Toward the end of the year, only a few new problems were proposed, leading to repeated discussion of previously reported, unsolved problems. We suggest that a possible solution is to hold the conference twice in the first month, monthly for the next six months, and then once every two months. In this way, the PSC could function efficiently without becoming another source of stress.

As a pilot study, the PSC program was carried out before full-scale experiments, in an attempt to avoid time and money being wasted on an inadequately designed project. The present study was limited by the small sample size and the selection of participants from a single school and a single hospital. However, we believe that students from different backgrounds in different clinical environments could utilize the PSC to address their problems in transition periods in Taiwan. In the present study, we did not follow up on the problems that were efficiently solved after the PSCs, but this could be incorporated in future studies. A future investigation should also survey the clinical teachers to evaluate the problems reported and whether the conference helped students to learn the six general competencies.

Conclusions

The PSC is an innovative, learner-centered and competency-oriented teaching tool. It is not only practical, but students can participate fully and receive immediate feedback from clinical teachers. This kind of small-scale conference creates opportunities for face-to-face communication and helps students cope with problems related to the ACGME General Competencies. With slight adjustments to scheduling frequency, the PSC should be a useful clinical teaching method.

Acknowledgement

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References

11. Nadolski GJ, Bell MA, Brewer BB, Frankel RM, Cushing HE, Brokaw JJ. Evaluating the quality of interaction between medical students and nurses in a
Illustrations

Illustration 1

Numbers of students expressing problems related to ACGME* competencies and impact on future practice

<table>
<thead>
<tr>
<th>ACGME Competencies</th>
<th>Very Negative</th>
<th>Negative</th>
<th>Neutral</th>
<th>Positive</th>
<th>Very Positive</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Care</td>
<td>1</td>
<td>6</td>
<td>15</td>
<td>6</td>
<td>3</td>
<td>31 (9.0)</td>
</tr>
<tr>
<td>Medical Knowledge</td>
<td>2</td>
<td>4</td>
<td>11</td>
<td>4</td>
<td>5</td>
<td>26 (7.5)</td>
</tr>
<tr>
<td>Practice-Based Learning</td>
<td>3</td>
<td>7</td>
<td>23</td>
<td>11</td>
<td>2</td>
<td>46 (13.3)</td>
</tr>
<tr>
<td>Interpersonal Communication</td>
<td>5</td>
<td>10</td>
<td>18</td>
<td>10</td>
<td>2</td>
<td>45 (13.0)</td>
</tr>
<tr>
<td>Professionalism</td>
<td>4</td>
<td>11</td>
<td>22</td>
<td>4</td>
<td>3</td>
<td>44 (12.8)</td>
</tr>
<tr>
<td>Systems-Based Practice</td>
<td>11</td>
<td>16</td>
<td>35</td>
<td>8</td>
<td>3</td>
<td>77 (21.2)</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
<td>15</td>
<td>45</td>
<td>6</td>
<td>6</td>
<td>80 (21.2)</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>69</td>
<td>169</td>
<td>49</td>
<td>24</td>
<td>345</td>
</tr>
</tbody>
</table>

*ACGME, Accreditation Council for Graduate Medical Education. Values indicate counts and percent in parentheses.

Illustration 2

Coping strategies of medical students revealed from the Problem-Solving Conference

<table>
<thead>
<tr>
<th>Brief COPE</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Instrumental Support</td>
<td>64</td>
<td>20.6</td>
</tr>
<tr>
<td>Acceptance</td>
<td>50</td>
<td>19.0</td>
</tr>
<tr>
<td>Active Coping</td>
<td>57</td>
<td>21.4</td>
</tr>
<tr>
<td>Behavioral Management</td>
<td>38</td>
<td>14.3</td>
</tr>
<tr>
<td>Venting</td>
<td>30</td>
<td>11.6</td>
</tr>
<tr>
<td>Planning</td>
<td>22</td>
<td>8.1</td>
</tr>
<tr>
<td>Problem Reassessment</td>
<td>16</td>
<td>6.2</td>
</tr>
<tr>
<td>Self-Distraction</td>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>Humor</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Using Emotional Support</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Religion</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Detial</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Substance (Alcohol/Drug)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>3.2</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>100</td>
</tr>
</tbody>
</table>
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