Training Physicians toward a Dignifying Approach in Adolescent Health Care: A Promising Simulation-Based Medical Education Program

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Background: Human dignity has a pivotal role within the health care system. There is little experience using simulation-based medical education (SBME) programs that focus on human dignity issues in doctor-patient relationships.

Objectives: To describe and assess a SBME program aimed at improving physicians’ competence in a dignifying approach when encountering adolescents and their parents.

Methods: A total of 97 physicians participated in 8 one-day SMBE workshops that included 7 scenarios of typical adolescent health care dilemmas. These issues could be resolved if the physician used an appropriate dignifying approach toward the patient and the parents. Debriefing discussions were based on video recordings of the scenarios. The effect of the workshops on participants’ approach to adolescent health care was assessed by a feedback questionnaire and on 5-point Likert score questionnaires administered before the workshop and 3 months after.

Results: All participants completed both the pre-workshop and the feedback questionnaires and 41 (42%) completed the post-workshop questionnaire 3 months later. Practice and competence topics received significantly higher scores in post-workshop questionnaires ($P < 0.001$). A score of high to very high was given by 90% of physicians to the workshop’s contribution to their understanding of the dignifying approach, and by 70% to its influence on their communicative skills.

Conclusions: A one-day simulation-based workshop may improve physicians’ communication skills and sense of competence in addressing adolescent health care issues which require a dignifying approach toward both the adolescent patients and their parents. This dignity-focused methodology may be expanded to improve communication skills of physicians from various disciplines.

KEY WORDS: human dignity, adolescent health care, communication, simulation-based medical education (SBME)

The Universal Declaration of Human Rights [1] recognizes the inherent dignity and worth of every human being. As a primary value in interpersonal relationships, human dignity has a pivotal role within the health care system regarding patients’ privacy, control, independence and competence [1] and should become an integral component of medical practice [2]. A dignifying approach is based on actions taken during the physician-patient encounter and on necessary measures for the creation of trustful longstanding relations with patients [3]. Education for health care providers should aim at achieving a culture of caring, with an emphasis on empathy and behaviors that may improve effective communication [4]. The establishment of an acceptance atmosphere and privacy assurance are of prime importance in the medical encounter. Non-judgmental attention, professional explanation and suggestions are required, and appreciation and encouragement of the patient are integral components of a dignifying approach. Further support and follow-up serve as an empowering component in the relationship between health care provider and patient [3].

Among the various training methods for health professionals, simulation-based medical education (SBME) has been developed to offer a safe and “mistake-forgiving” environment where trainees can learn from their errors without the risk of harming real patients [5]. An important benefit of SBME is the provision of a realistic environment for skill training, while retaining the reproducibility, standardization and objectivity of the performance for both formative assessment (debriefing) and summative assessment (testing) [6,7].

The medical literature on the use of SBME that focuses on training physicians to address human dignity issues in doctor-patient relationships is scant, as is experience using it in training professionals who provide health care to adolescents. The principles of a dignifying approach within patient-centered care need to be interpreted and applied in a way that meets adolescents’ distinct developmental needs [8]. Adolescent health care encompasses dilemmas that are unique to this age group, such as consent to medical treatment, parent-adolescent conflict, as well as confidentiality and legal issues that require special
communication skills on the part of the health care provider, specifically regarding a dignifying approach toward the adolescent patient as well as to his or her parents [9].

The Israel Center for Medical Simulation (MSR) and the Israel Democracy Institute (IDI) initiated a collaborative project aimed at assimilating human dignity values into the Israeli public health care system, utilizing SBME methodology. We describe our first project within this initiative that focuses on training toward a dignifying approach in adolescent health care.

**SUBJECTS AND METHODS**

The study group comprised pediatricians and family physicians practicing either in community-based clinics or in hospitals. Participants attended a one-day SBME workshop at MSR that included a lecture on human dignity issues and simulated patient (SP)-based sessions where scenarios were exercised and discussed. The lecture addressed the issue of human dignity as a moral as well as a legal value and its behavioral expression within the health care system. A practical scheme for applying a dignifying approach in medical practice based on communication principles [3] was presented. The scheme includes suggestions to the health care provider regarding actions that should be taken during the encounter with the patient and the parents, as well as activities that are necessary for the creation of trustful longstanding relations with the patient.

The SP-based scenarios included typical adolescent health care problems with dilemmas that could be resolved if the physician in training used an appropriate dignifying approach toward the patient and his or her parents. Seven different scenarios were exercised with actors simulating adolescent patients or parents of adolescents [Table 1]. The scenarios were performed in rooms designed to look like a regular physician’s office. Microphones and one-way mirrors enabled non-exercising participants to observe the physician-SP encounters, and video cameras recorded the encounters for further analysis and feedback during debriefing sessions. Four different scenarios were exercised three times in the morning sessions, and three additional scenarios were exercised three times in the afternoon sessions, thus enabling each participant to encounter with SPs at least twice during the training day and to observe all the other encounters. Following both the morning and afternoon exercises the encounters were discussed with all participants utilizing the video recordings. The video-based debriefing was led by facilitators experienced in human dignity issues and in adolescent health care as well as in the art of video-based debriefing. During the debriefing sessions participants could observe different approaches to each dilemma, and the facilitators highlighted the human dignity issues based on the principles that had been presented in the introductory lecture.

**EVALUATION**

Participants completed two different 5-point Likert-scale questionnaires:

- a feedback questionnaire filled at the end of each one-day workshop
- pre-workshop and post-workshop questionnaires, distributed via the Internet, filled before attending the workshop and 3 months after the workshop respectively.

The feedback questionnaire included two groups of questions:

- relevance of the scenarios to the participants’ professional experience
- assessment of the workshop’s contribution to their daily practice.

The pre-workshop and post-workshop questionnaires consisted of items regarding human dignity dilemmas in adolescent health care. The items were grouped into four different topics:

**Table 1. Human dignity dilemmas in adolescent health care exercised in the workshop**

<table>
<thead>
<tr>
<th>Case</th>
<th>Presentation</th>
<th>Dilemma</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A 14-year-old boy with attention deficit disorder and his father discuss methylphenidate recommended by a pediatric neurologist</td>
<td>Father objects to methylphenidate therapy for his son, who insists on receiving the treatment</td>
</tr>
<tr>
<td>2</td>
<td>A 15-year-old girl with non-Hodgkin’s lymphoma and her mother discuss chemotherapy recommended by the oncologist</td>
<td>Parent-daughter conflict related to the adolescent’s refusal of chemotherapy because of fear of side effects</td>
</tr>
<tr>
<td>3</td>
<td>A 15-year-old Muslim girl discloses unplanned pregnancy</td>
<td>The adolescent objects to termination of pregnancy but demands complete confidentiality</td>
</tr>
<tr>
<td>4</td>
<td>A 16-year-old Orthodox religious boy with a headache for several weeks who refuses to attend school</td>
<td>Emotional struggle in an adolescent boy attracted to another boy while fearing disclosure to his religious Orthodox parents</td>
</tr>
<tr>
<td>5</td>
<td>A 16-year-old girl with low appetite and weight loss related to grief and bereavement in the family and a breakup with her boyfriend</td>
<td>The adolescent discloses suicide plans but asks not to involve her parents who struggle with serious economic and emotional problems</td>
</tr>
<tr>
<td>6</td>
<td>A 14-year-old girl escorted by her father who describes his daughter’s suffering from sleep disturbance while she refuses to talk</td>
<td>Only upon father’s departure does the girl divulge sexual abuse of her and her younger sister by their father. She requests confidentiality</td>
</tr>
<tr>
<td>7</td>
<td>A furious parent angry with the physician who has prescribed contraceptive pills for his 15-year-old daughter without his consent</td>
<td>Addressing parental anger while keeping the adolescent sexual relations confidential (prescribing oral contraceptives above age 14 without parental consent is legal in Israel)</td>
</tr>
</tbody>
</table>
• Practical items regarding event management of encounters with adolescent patients (e.g., “How frequently do you ask an adolescent patient accompanied by parents to remain alone with you for further conversation?”)
• Practical items regarding general experience in communication with adolescents (e.g., “How frequently do you express appreciation to the adolescent for his or her efforts in dealing with difficulties?”)
• Items regarding participants’ perception of their competence in adolescent health care (e.g., “How competent do you feel when adolescents disagree with their parents regarding treatment recommendations?”)
• Items regarding participants’ attitude toward the dignifying approach (e.g., “Mark your level of agreement with the statement that during the encounter with an adolescent patient and a parent, it is preferable to focus on the adolescent to minimize friction with the parent”)

The 3 months post-workshop questionnaire included two additional topics regarding participants’ perception of the workshop’s contribution to:
• their communication skills using the dignifying approach
• their understanding of a dignifying communication approach.

For individual comparison of pre- and post-workshop questionnaires, participants were identified by the last four digits of their nine-digit ID number.

STATISTICAL ANALYSIS
To compare between topic means we used paired t-tests. For item-by-item comparisons between pre- and post-workshop items we used the Wilcoxon test for ranked pairs.

The project was approved by the Sheba Medical Center Institutional Review Board, and all participants filled out an informed consent form for participation in the project.

RESULTS
Ninety-seven physicians participated in 8 one-day workshops; 65 (68%) were females and 53 (66%) were younger than 40 years old. Participants were either pediatricians (75%) or family physicians (25%), and half of them were hospital-based.

The feedback questionnaires completed at the end of each training day revealed that the scenarios were considered relevant to the participants’ clinical practice. The vast majority of participants (85%) rated the debriefing sessions as addressing relevant learning issues with the highest score on the Likert-scale. More than three-quarters (77%) stated that the training workshop would contribute to their communication skills with adolescents, and 71% assumed that the training would influence their future behavior in the clinic.

All participants completed the pre-workshop questionnaire and 41 (42%) completed the post-workshop questionnaire and were eligible for individual comparison between two questionnaires. Attrition analysis comparing participants who completed the post-workshop questionnaire with those who did not, revealed no differences in any of the participants’ personal characteristics.

Score comparison of the pre- and post-workshop questionnaire topics are presented in Table 2. For the event management topic we found no difference in the topic score or in the item-by-item analysis. For the general experience topic, post-workshop scores were significantly higher than pre-workshop scores (P < 0.001). Item-by-item analysis revealed a significant increase in two items out of three. For the competence topic, the post-workshop score was significantly higher than the pre-workshop score (P < 0.0001) [Table 2], and item-by-item analysis demonstrated a significant increase in the scores for all items [Figure 1]. For the attitude topic no differences in the topic score or in the item-by-item analysis were noted [Table 2].

Analysis of the additional topics in the post-workshop questionnaire demonstrated that for the contribution of the scenarios to physicians’ understanding of the dignifying approach, the mean scores ranged from 4.06 to 4.36 (on a 1–5
scale), with 76–91% of the physicians rating the scenarios’ contribution as high or very high. Secondly, the entire workshop’s contribution to the knowledge of the dignifying approach was rated high to very high by 90% of the physicians, and 70% rated the influence of the workshop on their behavior in the clinic or at the hospital as high or very high.

DISCUSSION

This is a report of a new training project for physicians that focuses on the dignifying approach in patient-centered health care. SBME was utilized as the educational method in the current project, since experience gained at MSR in this methodology, including training physicians in communication skills with adolescents [10], has been proven effective [11]. We chose clinical cases involving adolescents and their parents that would highlight common dignity issues within the triangle of the doctor-patient-parents encounter. One source of tension between health professionals and families lies in differing perceptions of the roles that family members should play, where each role may present potential conflicts. Members of a family may act as advocates, serve as trusted companions on the journey through illness and death, or make decisions on behalf of an incompetent patient [12]. However, disagreements may arise within a family because of fear of litigation and differing religious, ethnic or cultural traditions. Health care professionals can better address and may even assuage these conflicts through education and skills acquisition, the establishment of partnerships with families, and regular dialogue and communication [12]. In the current project several parental responsibility-related issues were exercised. Two cases demonstrate opposing attitudes of parents and adolescents toward a proposed treatment: the father who objects to a recommended treatment with methylphenidate (Ritalin) for amelioration of his adolescent son’s attention deficit disorder, and the adolescent girl who refuses to receive life-saving chemotherapy against her doctor’s and her parents’ views. Confidentiality issues were dealt with in several cases. Confidentiality may be kept when requested, as in the case of pregnancy where a dignifying approach toward the pregnant adolescent will facilitate reaching a realistic decision. Likewise, confidentiality regarding homosexuality disclosed during a medical encounter requires a dignifying and very sensitive approach on behalf of the trusted physician. A dignifying approach is highly necessary when confidentiality needs to be breached, as in the case of child abuse divulged during a medical encounter, or suicidal thoughts in a depressed adolescent disclosed to the trusted physician. Dignity dilemmas may reach a crisis when parents feel that their authority as guardians has been bypassed by the health care provider, as demonstrated by the scenario of a furious father who discovered that contraceptive pills had been prescribed to his teenage daughter without his consent.

The different actions that could be applied for resolving these dilemmas by means of a dignifying approach constituted the core of the discussion during the debriefing sessions that followed the simulation exercises.

Evaluation of the contribution of this project was performed using two assessment tools. The first was the feedback questionnaire that was completed at the end of each training day. This kind of assessment is commonly used in all SP-based exercises performed at MSR. The feedback questionnaires revealed that the majority of participants felt that the workshop would contribute to their communication skills with adolescents and their parents and would influence their future behavior in the clinic. Indeed, most of the SBME projects at MSR receive similar feedback [10], which may be related to the intensive and immediate impact experienced by participants in such exercises. In order to assess a longer term effect of the project we asked the participants to complete both the pre-workshop and the 3 months post-workshop questionnaires.

Only 41% of participants completed the post-workshop questionnaire. Personal characteristics were quite similar between the post-workshop responders and non-responders, and attrition analysis revealed no differences in any of the participants’ personal characteristics. Therefore, the results may be considered relevant to the whole cohort. Three months after the workshops, more than two-thirds of the responding participants reported that the training indeed contributed to their conduct during encounters with their patients, and 90% felt that the training increased their awareness toward the dignifying approach. These findings are in concordance with the feedback results, where more than three-quarters of participants stated that the training workshop would contribute to their communication skills with adolescents, and 71% assumed that the training would influence their future behavior in the clinic. Comparing the pre-workshop and post-workshop questionnaires showed significant improvement in the participants’ self-perception of their general experience as well as their competence in addressing adolescent patients and their parents, using the dignifying approach.

Interestingly, regarding attitudes toward human dignity issues, no differences were indicated in any items between the pre-workshop and post-workshop questionnaires. Studies have shown that despite good professional engagement with an intervention program, the actual impact on health care provision is difficult to prove [13]. Thus, we may speculate that the participants in our program perceived themselves as paying attention to human dignity issues prior to attending the workshop, but felt better skilled in the dignifying approach after participating in the program. The dignifying approach may be looked upon as an approach that calls for finding the “mid-line” and balance between the needs of different family members. Thus, responses at the middle of the scale for attitude items could be expected.
Several limitations should be noted regarding our assessment of the project’s contribution. Physicians from only two medical disciplines participated in the project, and only 41% of them were eligible for evaluation. The evaluation was based only on the participants’ subjective self-reports, and no objective confirmation for the findings was performed.

In conclusion, our project demonstrates that within the framework of a one-day SBME workshop, physicians may improve their communication skills and sense of competence in addressing adolescent health care issues which require a dignifying approach toward both the adolescent patient and the parents. The unique methodology utilized in this project may be further expanded to improve communication skills of physicians from various disciplines by focusing on a dignifying approach in the health care they provide to their patients.

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Identification of an ideal adjuvant for receptor-binding domain-based subunit vaccines against Middle East respiratory syndrome coronavirus

Middle East respiratory syndrome (MERS), an emerging infectious disease caused by MERS coronavirus (MERS-CoV), has garnered worldwide attention as a result of its continuous spread and pandemic potential, making the development of effective vaccines a high priority. Naru et al. previously demonstrated that residues 377–588 of MERS-CoV spike (S) protein receptor-binding domain (RBD) is a very promising MERS subunit vaccine candidate, capable of inducing potent neutralization antibody responses. They sought to identify an adjuvant that optimally enhanced the immunogenicity of S377–588 protein fused with Fc of human IgG (S377–588-Fc). Specifically, they compared several commercially available adjuvants, including Freund’s adjuvant, aluminum, Monophosphoryl lipid A, Montanide ISA51 and MF59 with regard to their capacity to enhance the immunogenicity of this subunit vaccine. In the absence of adjuvant, S377–588-Fc alone induced readily detectable neutralizing antibody and T cell responses in immunized mice. However, incorporating an adjuvant improved its immunogenicity. Particularly, among the aforementioned adjuvants evaluated, MF59 is the most potent as judged by its superior ability to induce the highest titers of IgG, IgG1 and IgG2a subtypes, and neutralizing antibodies. The addition of MF59 significantly augmented the immunogenicity of S377–588-Fc to induce strong IgG and neutralizing antibody responses as well as protection against MERS-CoV infection in mice, suggesting that MF59 is an optimal adjuvant for MERS-CoV RBD-based subunit vaccines.

References

**Capsule**

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“True teachers are those who use themselves as bridges over which they invite their students to cross; then, having facilitated their crossing, joyfully collapse, encouraging them to create their own”

Nikos Kazantzakis (1883-1957), Greek writer, best known for his novels Zorba the Greek and The Last Temptation of Christ, which were made into movies. Universally recognized as a giant of modern Greek literature, Kazantzakis was nominated for the Nobel Prize in Literature in nine different years.