

Improving Medical Student's Confidence Regarding Adolescent Interviewing

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Abstract

Background: The adolescent interview is a challenging task in which many medical students and residents report low levels of confidence.

Purpose: To explore whether receiving structured feedback from an adolescent and mother Standardized Patient pair improves medical students' confidence regarding the adolescent interview.

Methods: Medical students undergoing their core Pediatric Clerkship Rotation were asked to rate their confidence involving basic psychosocial communication and key medical components of adolescent interviewing on a 13-item confidence questionnaire. Students were then randomized to receive structured feedback (n=25) on adolescent interviewing skills from an SP pair, or to receive no structured feedback (n=20). Students also ranked six self-perceived learning needs. Four weeks later students underwent a second SP interview and completed the 13-item confidence questionnaire. All students then received feedback from the SP pair.

Results: Students who received structured feedback had greater confidence scores in their adolescent interviewing skills when compared to students who received no structured feedback. This difference was statistically significant in the areas of 'Physical Exam' (p=0.001) and 'Sexual Issues' (p=0.023). The six ranked self-perceived learning needs indicated that students felt least prepared for 'Sexuality Questioning' (contraception, sex) and 'Preventative Health Care' (injuries, sexually transmitted infections).

Conclusion: Structured feedback from an adolescent and mother standardized patient pair was shown to be a useful tool in training medical students for the adolescent interview particularly on the topics of 'Physical Exam' and 'Sexuality Questioning'. This study also highlighted important areas of the adolescent interview that required further training, such as 'Sexuality Questioning' and 'Preventative Health Care'.

Keywords: Feedback; Confidence; Adolescent; Medical student; Sexuality

Introduction

It is widely recognized that physicians' communication and interpersonal skills are an important factor in the delivery of patient care [1,2]. Accordingly, in recent years a strong focus has been placed on the teaching and assessment of communication skills in medical school curricula [3]. Arguably, nowhere is this emphasis on communication skills more important than during the adolescent clinical interview. The adolescent years are critical in the determination of both positive and negative behaviours leading to long-term health outcomes [4,5]. Eliciting information in risk-taking domains is particularly important during this adolescent period. The adolescent clinical interview is a challenging task, likely reflecting the diversity of adolescent progression through developmental, cognitive, and physical domains [6]. The majority of physicians will be involved in some aspect of adolescent care throughout their careers [7]. Despite this, both medical students and residents report low levels of confidence in interviewing adolescent patients [8,9]. Not only is confidence lacking for the adolescent interview, but so may ability. One study reported that third year pediatric residents performed worse on the adolescent case compared to the non-adolescent cases on their year-end Objective Structured Clinical Exam. In particular, these residents were less competent in the areas of adolescent professionalism (i.e. expressing concern, compassion) and adolescent history-taking [10].

Understanding the role of confidence among learners, including medical students, is important. The concept of confidence is closely linked (and has been used interchangeably) with Bandura's concept of self-efficacy [11]. Bandura defines self-efficacy as a person's belief in

their ability to carry out certain tasks or produce certain attainments. According to Bandura, the level of self-efficacy (or confidence) is a powerful determinant of the difficulty of tasks that individuals undertake, how much effort they invest, and their persistence in the face of difficulty. In the context of adolescent interviewing, strong levels of confidence may importantly affect learners' effectiveness and measured performance in this domain.

The use of standardized patients (SP) to teach clinical and communication skills represents a shift from didactic teaching to experiential learning. Through experiential learning, the student/learner has a concrete experience, undergoes reflective observation, develops abstract conceptualization, followed by active experimentation and implementation of learned principles into knowledge base [12,13]. Experiential learning is an important way to teach both clinical skills and communication skills to medical students [14]. The benefit of SP's for experiential learning, particularly in the clinical setting with undergraduate medical students is multifactorial [15]. SP's are trained

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to simulate real illnesses and patient-physician interactions; students are able to practice skills in a judgment free, and risk free environment; SP cases may be less complicated (i.e. fewer comorbidities) than an inpatient or volunteer patient; encounters with SP's can be practiced repeatedly until students feel comfortable and confident in their skills [15]; importantly, SP's can be trained to provide students with structured feedback [16]. For all these benefits of SP's, the authors employed an SP model in this study.

The purpose of our study was to determine if medical students who received structured feedback from adolescent standardized patients following a clinical interview reported increased confidence in adolescent interviewing skills, compared with a group that received no feedback. A second aim of this study was to identify key areas of the adolescent interview where students felt they required the greatest amount of further training.

Methods

Participants

Medical students completing their fourth year clerkship rotation in pediatrics at a tertiary care hospital setting were invited to participate in a study regarding the use of standardized patients (SP) to learn adolescent psychosocial communication and key medical interviewing skills. Students agreeing to participate provided informed consent. The study took place at the University Teaching Centre (the Learning Resource Centre). The Dalhousie University Health Science and Humanities Human Research Ethics Board approved this study.

Instrument development

a. Confidence questionnaire in adolescent interviewing: As there was no existing tool for measuring medical student's confidence in adolescent interviewing, a structured questionnaire was developed, compiled from standard pediatric texts and objectives in undergraduate pediatric education [17]. The questionnaire consisted of 13 items covering the main domains of an adolescent interview. The basic psychosocial communication domains included those covered in the HEADDSS interview: Home, Education, Activities (Question 4), Alcohol, Drugs (Question 5), Diet (Question 10), Sex (Question 6), and Safety (Question 8). The HEADDSS interview is a well-known adolescent psychosocial screening tool used in the medical setting [18] both nationally and internationally. The questionnaire also included questions regarding key medical conditions (i.e. diabetes, epilepsy, asthma, ADHD). Students were asked to rate their confidence in these 13 areas of adolescent interviewing using a five point Likert Scale (1=low confidence, 3=average, and 5=high confidence).

b. Self-perceived learning needs: Participating medical students were also asked to rank their self-perceived learning needs in six components of adolescent medicine. Students were instructed to give the lowest rank to the aspect in which they felt weakest and required more training. The highest rank was to be assigned to the area where the student felt strongest. The six ranked self-perceived further learning needs (with examples) were:

- Sexuality Questioning (contraception, sex)
- Physical Examination (general approach rather than specifics)
- Separation of adolescent and parent for independent interviewing
- Life Style Issues (smoking, alcohol, drugs)
- Psychosocial Questioning (school issues, family, recreation)

Preventative Health Care (injuries, sexually transmitted infections)

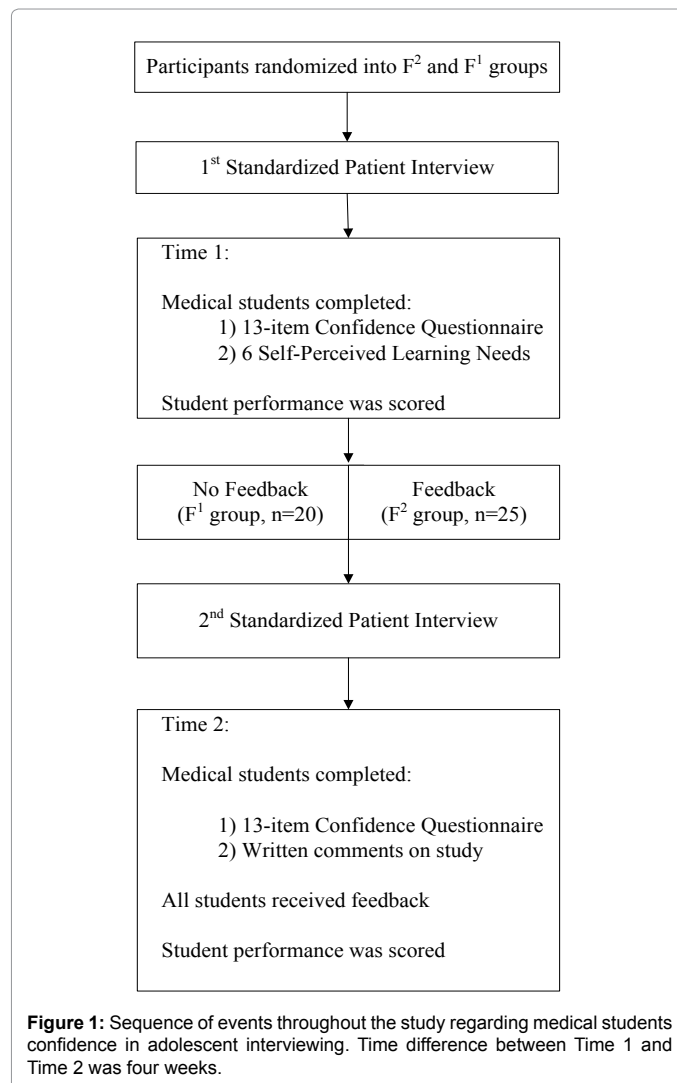
Content validity for both the 13-item confidence questionnaire and six ranked self-perceived learning needs was addressed by obtaining feedback on the clarity and content from local family physicians and pediatricians who were involved in clinical and medical education teaching. These physicians had regular contact with adolescents either through a specific adolescent clinic or in a hospital setting.

c. Structured feedback: The structured feedback tool used in this study by the SP pair was an early version of the Structured Communication Adolescent Guide (SCAG) [19]. The structured feedback tool was developed as an adaptation of the Calgary-Cambridge Observation Guide [20] and incorporated the specifics of the adolescent clinical interview.

Study design

A quasi-experimental randomized two group pre- and post-test design was employed (Figure 1).

Students were randomized into those who received feedback from the SP pair (F²) and those who did not receive feedback (F¹). Each student interviewed an adolescent female and mother standardized patient (SP) pair. Each SP pair was given one of four simulated cases



that had both a medical component (epilepsy, diabetes, attention deficit hyperactivity disorder, or asthma) and risk-taking activities (smoking, drugs, dating issues). The SP pair had been trained and scripted in the simulated case. The interview lasted approximately 40-60 minutes and involved a brief general physical examination of the adolescent patient.

After the first SP interview all students completed the 13-item confidence questionnaire and ranked the six self-perceived learning needs. Students in the F² group then received structured feedback from the SP pair (Instrument c). Students in the group F¹ did not receive feedback from the SP pair following the interview encounter.

All students conducted a second interview with an SP pair with a different case scenario four weeks later. After this interview students completed the 13-item confidence questionnaire for a second time and then all students received structured feedback from the SP pair. At the end of the study each student was given the opportunity to provide written comments to the researchers on the study and their experience.

Results

Participants

Sixty-eight medical students completing their fourth year clerkship rotation in pediatrics were invited to participate in the study. Fifty-eight students agreed to participate (85.3%). Of the 58 students, 13 had incomplete questionnaires, which could not be used for analysis, resulting in 45 students with complete questionnaires (66.2%). The demographic features (age, gender, and experience with adolescent patients) of non-participants and/or those with incomplete questionnaires did not differ significantly from the study sample population.

13-Item confidence questionnaire in adolescent interviewing

The mean confidence scores for each of the 13 confidence questions at both Time 1 and Time 2, for each group of students is shown in Figure 2 (Time 1) and 3 (Time 2). The data shows that after feedback the students demonstrated a higher mean confidence score in the 13 items except Question 8 'Preventative Health Care' (injuries, sexually transmitted illness) (Figure 3).

Graphical representation of the data revealed non-normal distribution, therefore the Mann-Whitney U test was used to compare confidence scores at Time 1 (before the SP interview) and Time 2 (four weeks later). At baseline, the feedback group (F²) had higher confidence

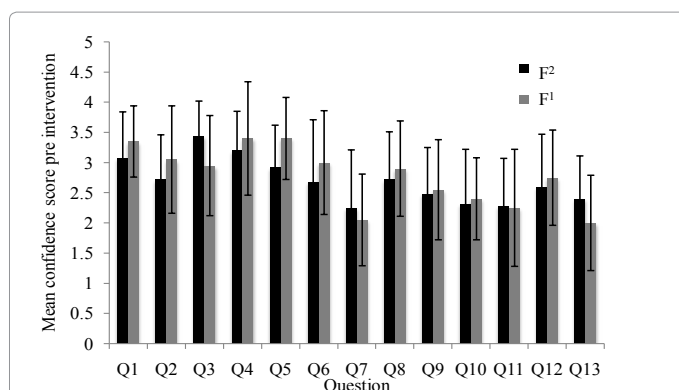


Figure 2: Mean confidence scores and standard deviations for each question on the 13-item confidence questionnaire at Time 1, after the first standardized patient interview. The F² group of students received feedback after completing the 13-item confidence questionnaire and the F¹ group did not.

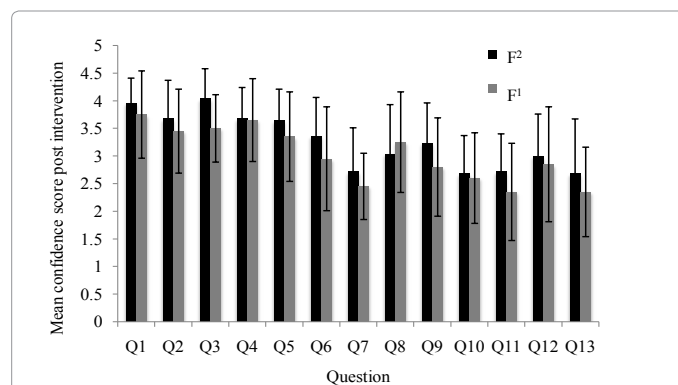


Figure 3: Mean confidence scores and standard deviation by question on the 13-item confidence questionnaire at Time 2 (four weeks after first standardized patient interview). At this time, the F² group had experienced two adolescent interviews and one round of feedback whereas the F¹ group had undergone two adolescent interviews and received no feedback.

with Question 3 'Physical Exam' than the no feedback group (F¹) ($p=0.028$). All other baseline comparisons were non-significant.

At Time 2, the feedback group (F²) group had a significantly higher confidence score on Question 3 'Physical Exam' than did the no feedback group (F¹). The feedback group (F²) group also had a significantly higher confidence score on Question 6 'Sexual Issues' than the F¹ group (Table 1).

Self-perceived learning needs

Among the original study sample of 68 medical students, 51 students ranked six self-perceived learning needs (75%). The 17 non-participants did not differ significantly in demographic features compared to the participants. The number of students that assigned a given rank value to each learning need is shown in (Table 2). 'Sexuality Questioning' (contraception, sex) and 'Preventative Health Care' (injuries, sexually transmitted infections) were the lowest ranked areas of the adolescent interview, thus reported by the students as requiring the greatest amount of further training.

Discussion

We studied the effect of feedback from a standardized patient (SP) adolescent and mother pair on students' confidence in their adolescent interviewing skills, compared with students who received no feedback. We also explored students' self-perceived learning needs related to components of an adolescent interview.

The study results demonstrated that medical students who received structured feedback on their adolescent interviewing skills from standardized patients showed a trend towards greater confidence in their adolescent interviewing skills when compared to students who received no structured feedback. This was statistically significant in the area of 'Physical Exam'. The initial high confidence score for 'Physical Exam' that improved after SP feedback might be explained by the fact that opportunities to practice physical exam skills are more ubiquitous throughout the years of medical training and that feedback from an SP adolescent can reinforce this confidence. Students have more exposure to general physical exam skills compared to adolescent specific interviewing and communication skills. This is supported by the fact that the 'Physical Exam' was ranked as requiring the least amount of training.

The confidence score for 'Sexual Issues' (Question 6) was also

Question	Median		Mann Whitney U Value	Critical z Value	Significance (p)
	F ¹	F ²			
1. Medical History Taking	21.05	24.56	211.00	-1.07	0.124
2. Independent history taking from parent and adolescent (including process of separation)	21.30	24.36	216.00	-0.85	0.202
3. Physical Exam (how to undress the adolescent patient with dignity)	17.28	27.58	135.50	-2.97	0.001*
4. Psychosocial History (schooling, friends, recreation)	22.78	23.18	245.50	-0.12	0.466
5. Lifestyle Issues (smoking, alcohol, drugs)	20.53	24.98	200.50	-1.25	0.117
6. Sexual Issues (sex, contraception)	19.08	26.14	171.50	-1.93	0.023*
7. Abuse (sexual abuse, prevention of abuse)	20.33	25.14	196.50	-1.41	0.088
8. Preventative Health Care (injuries, sexually transmitted illness)	24.53	21.78	219.50	-0.74	0.239
9. The difficult adolescent (diabetes-poor management)	19.65	25.68	183.00	-1.64	0.056
10. Bulimia/Anorexia Issues	22.75	23.20	245.00	-0.12	0.468
11. Approach to Long Term Problems (Cystic fibrosis, death)	19.65	25.68	183.00	-1.66	0.052
12. Adolescent mood disorders (depression and suicide)	22.43	23.46	238.50	-0.28	0.382
13. Where to get further help information for adolescent/parent	20.15	25.28	193.00	-1.37	0.088

Table 1: The Mann-Whitney test results comparing medical students confidence scores regarding adolescent interviewing. Results are from Time 2, after second standardized patient interview between students that received feedback (F², n=25) and students that received no feedback (F¹, n=20) groups. Feedback was given from standardized adolescent and mother.

Learning Need	Rank Values and Number of Students Assigning Values			
	Weakest 1 and 2	3	4	Strongest 5 and 6
Sexuality questioning (contraception, sex)	31	9	7	4
Physical examination	10	4	6	31
Separation of adolescent and parent	20	11	7	13
Life style Issues (smoking, alcohol, drugs)	9	8	15	19
Psychosocial questioning (school issues, family, recreation)	3	12	9	27
Preventative health care (injuries, sexually transmitted infections)	26	13	5	7

Note: A score of 1 and 2 indicates the students' self-perceived weakest areas. A score of 5 and 6 was given to the strongest domain, thus perceived as requiring the least amount of further training.

Table 2: Ranking scores of self-perceived further learning needs by medical students in the study (n=51). Each value indicates the number of students that assigned each rank value to the learning need. 'Sexuality Questioning' and 'Preventative Health Care' were self-perceived as requiring the greatest amount of further training.

significantly higher at Time 2 in the feedback group (F²) compared to the no feedback group (F¹). Interestingly, 'Sexuality Questioning' was ranked as requiring the greatest amount of further training. This result suggests that a one-time exposure to feedback on interviewing performance may have been helpful in increasing student confidence in the area of sexuality questioning, including contraception.

Discussion of sensitive issues, such as sexuality questioning, can be a difficult component of the adolescent interview. In addition to 'Sexuality Questioning' (contraception, sex), 'Preventative Health care' (injuries, sexually transmitted infections) was also ranked as requiring the greatest amount of further training. Adolescent patient education regarding sexual issues is a responsibility of the physician and an important dialogue in maintaining healthy adolescent sexuality [21]. Therefore, a student's confidence in their ability to establish confidentiality with the adolescent patient, as well as to separate the patient and parent are important first steps in the interview to encourage discussion of sensitive issues. The present study's results imply a gap in training for adolescent interviewing during the years of undergraduate medical education, particularly in sexuality issues. This information can be helpful in adapting the undergraduate curriculum to better accommodate further training in these domains so that medical students and subsequently residents feel adequately prepared in adolescent interviewing.

Interestingly, Question 8 'Preventative Health Care' (injuries, sexually transmitted infections) was the only item from the 13-item confidence questionnaire that the F² group reported lower levels of confidence than then F¹ group at Time 2 (Figure 3). It is possible that

after receiving feedback from the SP pair, the F² group became aware of how difficult a topic 'Preventative Health Care' is in the adolescent interview, thus decreasing their confidence in the area. The F¹ group who had yet to receive feedback may have been unaware of their challenges, leading to higher reported confidence on this question than the F² group.

Questions such as 'Lifestyle Issues' (smoking, alcohol, drugs) showed a trend towards increased confidence levels in the F² group (Figure 3). Although the difference in confidence scores was not statistically significant, it does not diminish the importance of both practicing discussing these topics and the benefit of receiving feedback on performance. Alcohol-related questioning is important for detecting alcohol use in the adolescent patient as this is often the initial risk taking activity that leads to other risky behaviours [22]. Interestingly, the literature reports that few adolescents (54%) were asked about drinking when they saw a doctor [23] and even fewer young adults (14%) were asked about their drinking [24]. It is important for both physicians and parents to note that discussing risky/dangerous behaviours does not put the adolescent at increased risk for participating in such behaviour [25]. However, by the physician broaching the topic, adolescents may receive current and preventative health care information.

It is important for physicians and medical students to recognize the positive impact of discussing sensitive issues with their adolescent patients. This offers an opportunity to provide advice and preventative health care. Discussion of sensitive issues may also strengthen the patient-physician relationship. One study described that adolescent patients reported more involvement in their care as well as a greater

understanding from their physician when topics such as drugs, sex, and mental health were discussed [26].

Adolescent interview communication skills have been successfully taught at the resident level with the use of SPs [27] thus increasing residents' confidence. One study found that pediatric residents who underwent both a lecture and SP interview regarding suicide risk assessment had significantly higher confidence levels and knowledge levels after the study compared to students who had only the lecture [28]. Considering the success of SP's in teaching medical residents, SP's also have a role in teaching communication skills to undergraduate medical students. During the current study, data was also collected on the participants' clinical performance at both Time 1 and Time 2. The researchers had access (with participant permission) to the student's mandatory year-end Objective Structured Clinical Exam (OSCE) scores. Two of this paper's authors (KB and KM) have previously reported the performance related results [29]. The results showed that at Time 1 both groups of students performed equally. However, at Time 2, the F² group, which had previously been exposed to structured feedback, performed significantly higher than the F¹ group [29]. Overall, structured feedback from an SP pair following an adolescent interview led to statistically significant improvements in students' adolescent clinical interviewing skills compared to students that did not receive feedback [29]. The authors also found that the participating students, all of whom received feedback either once (F¹) or twice (F²) had significantly higher scores on the adolescent psychosocial inquiry on the year end OSCE which took place months after the student's participation in the study compared to non-participating classmates. These results demonstrated that after one or two SP interviews with feedback, student performance showed a sustained improvement [29]. The use of SP's and simulated cases have also been shown to increase medical students confidence and performance in other areas of medicine such as obstetrics [30] and gynecology [31].

This study found the use of SPs to be an excellent teaching and learning tool for improving student's confidence and performance with the adolescent interview. A systematic review of the literature surrounding the use of SPs in medical education found that feedback provided by the SP is valuable because it is from the patient's perspective [32]. Importantly, students in our study commented that this was an effective and enjoyable learning experience. Select comments from student participants are shown below:

"We never get to get feedback from patients which is *so* helpful and also to be able to practice in a controlled environment such as these is really useful"

"Excellent experience-simulated adolescent contact with feedback should be part of [the] curriculum."

A limitation of this study was the small sample size of medical students. However following our study, a structured approach to adolescent interviewing has been introduced throughout the four years of the MD program, at our own institution, and over subsequent years, at five other medical schools across Canada. We have recently shown that residents who were exposed to structured adolescent interviews and feedback during their undergraduate medical training have significantly higher communication skills with adolescent interviewing than residents who have received no structured feedback during their medical training [33].

Conclusion

In the context of adolescent interviewing, a student's level of

confidence may importantly affect his/her learning effectiveness and performance. Medical students' confidence in adolescent interviewing significantly increased in 'Sexuality Questioning' and 'Physical Exam' after a single standardized patient interview followed by structured feedback with an adolescent and mother standardized patient pair. This research lends support to involving standardized patient practice and structured feedback to train medical students in adolescent interviewing skills. We have also shown that when students self-report they require further training in an area of the adolescent interview (i.e. Sexuality Questioning), receiving feedback from an SP adolescent can increase their confidence.

This research will benefit medical schools looking for unique ways of teaching adolescent clinical interview skills.

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