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### Learning by Doing: Enhancing Interprofessional Students' Awareness of Informed Shared Decision-Making

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#### Abstract

**Purpose:** Based on a recently developed medical framework for informed shared decision-making (ISDM), three health and human service programs at the University of British Columbia conducted a combined two-stage project to: (1) develop an interprofessional ISDM-training workshop and (2) test its impact in field-placement clerkships for students in Pharmaceutical Sciences, Physical Therapy, and Occupational Therapy. **Method:** Sixteen senior year students from the participating disciplines were recruited to: (1) participate in a workshop to learn about ISDM, (2) observe multiple preceptor/patient encounters during their clerkships, (3) record their observations in a field notebook, and (4) participate in a follow-up workshop to debrief their experiences and offer feedback. **Results:** Overall, students observed 145 encounters and coded their ability to detect the presence or absence of eight decision-making competencies in each encounter. Across the disciplines, students were more certain of some competencies (developing partnerships, negotiating decisions) than others (patient's preferences for information, patient's role in decision-making). Irrespective of competency, students in Physical Therapy were more hesitant to commit to certainty than other students. Analysis of student uncertainties, combined with training session debriefings, provided guidelines for improving the ISDM training workshop and offered systematic instructional insights for working with students in these different disciplines. **Conclusions:** Despite their uncertainties, the majority of students reported that participation in the project provided them with a better understanding of ISDM and influenced the ways they would approach future communication with patients in their own practices to facilitate ISDM.

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#### Introduction

In the traditionally paternalistic health care system, patients have passively looked to health care providers to diagnose and manage their diseases, while health care providers have made the decisions expecting that patients would comply with their treatment plans without question.<sup>1-3</sup> However, over the last fifteen years, consumer activism has weakened this traditional patient-health care provider relationship. An increasing number of patients now want to learn more about their diseases

and treatment options and to participate in decision making processes that affect their health.<sup>4,5</sup> In addition, health care organizations, governments, and professional bodies have recognized that inadequate patient involvement in their own health care may interfere with positive health outcomes and increase health care costs.<sup>2,6-15</sup>

In response to these trends, there has been a marked increase in public availability of health and pharmaceutical information through internet sites such as

WebMD, MedBroadcast.com, and Health Canada.<sup>1</sup> Governments across North America have actively advocated for greater levels of patient participation in health care.<sup>7,11,16-18</sup> In Canada for example, the provincial government of British Columbia has recently distributed a comprehensive health guide to its residents with the explicit intent of helping patients decrease their reliance on emergency care and increase self-responsibility for their own health care and that of their families and communities.<sup>19</sup> In the United States there have been changes in public policy and laws affecting patient rights, advocating that, at a minimum, patients must give informed consent to a treatment by law.<sup>16</sup> The World Health Organization also considers patient involvement in health care to be a social, economic, and technical necessity.<sup>20,21</sup> In the professional sector, professional associations have endorsed the changing patient-health care provider relationship; and health care providers are taking on the role of patient advisors and placing greater importance on developing partnerships with patients and working collaboratively.<sup>1,22,23</sup> There has also been a greater emphasis on patient-health care provider communication skills in the professional literature and education programs for health professionals.

Various patient-health care provider models that promote increased patient involvement have been described in

the professional literatures of Pharmacy, Occupational Therapy, Physical Therapy and Medicine.<sup>1-6, 8-11, 13-18, 22-40</sup>

They are often labeled as "pharmaceutical care," "informed model," "shared model," "patient-centered care" and other models that are hybrids of these.<sup>16,24,25,33,34</sup> However, little work has been done to describe the actual interactive processes required for successful shared interactions that are also informed with good evidence.

In the mid-90s, the Division of Health Communications in the College of Health Disciplines at the University of British Columbia (UBC), Vancouver, Canada initiated a project to define a process of decision making that incorporates the concepts of informed shared decision making (ISDM). This interpersonal communication process describes doctor-patient interactions that are informed by best evidence and occur in a partnership which rests on an explicit acknowledgement of rights and duties, with expectations of benefit to both parties.<sup>32</sup> This work resulted in the establishment of a set of eight competencies which now serve as a framework for teaching, learning and practicing ISDM for medical students at UBC. Refer to Table 1 for a list of these competencies.

**Table 1.** Informed Shared Decision Making (ISDM) competencies for physicians

The physician is able to:

1. Develop a partnership with the patient/client
2. Establish or review the patient's/client's preferences for information (eg. amount, format)
3. Establish or review the patient's/client's preferences for role in decision making (eg. risk taking; degree of involvement of self and others), and the existence/nature/degree of decisional conflict. [Decisional conflict is a state of uncertainty about the course of action to take.]
4. Ascertain and respond to patient's/client's ideas, concerns, and expectations (eg. About disease, management options).
5. Identify choices (including ideas and information patient/client may have) and evaluate the research evidence in relation to the individual patient/client.
6. Present (or direct to) evidence taking into account #2 and #3, framing effects, etc. and help patient/client to reflect upon and assess the impact of alternative decisions vis a vis their values and lifestyle. [Framing effects are said to occur when the presentation of the same information in different formats changes the decisions that people make.]
7. Make or negotiate a decision in partnership and resolve conflict.
8. Agree upon an action plan and complete arrangements for follow-up.

The work by Towle & Godolphin's served as the impetus for other health professional programs at UBC to introduce training programs that would enhance their students' abilities to participate in shared and informed interactions with their patients.<sup>32</sup> This was based on a shared belief that use of a common language and approach by students and practitioners across health disciplines for involving patients in their care would not only facilitate interprofessional practice, but also make the patients' role in decision making easier in a health care sector where teamwork is advocated. Researchers from the Faculty of Pharmaceutical Sciences and the School of Rehabilitation Sciences (Occupational Therapy and Physical Therapy divisions within the Faculty of Medicine) collaborated to develop and evaluate an

interprofessional ISDM workshop. The objective of this paper is to discuss the effectiveness of such a workshop that is based on the physician model but extended to other health care disciplines for: (1) enhancing non-medical students' awareness of ISDM, (2) verifying the acquisition of its basic competencies, (3) testing for differences in competency uptake among students in the three disciplines, and (4) refining students' ability to detect the presence or absence of ISDM competencies when observing practitioner-patient interactions.

#### **Methodology** **Research design**

A multidisciplinary project that emphasized an integrative interprofessional and experiential learning was carried

out between September 1999 and June 2001 at UBC in Vancouver, Canada. Faculty collaborators on the project included two faculty members from Pharmaceutical Sciences, one from Physical Therapy, and one from Occupational Therapy. Senior-year students were recruited from each of the three disciplines to function as student researchers during their scheduled field placement (clerkship) experiences and to help develop an interprofessional ISDM workshop. Professional practitioners who were recognized as models of good practice by their respective educational programs were approached to serve as preceptors to the student. Those who agreed signed a consent form. The students had four responsibilities: (1) to learn the ISDM model in a workshop setting prior to their clerkships, (2) to observe three preceptor/patient encounters per week for the duration of their respective clerkship periods (four weeks for Pharmacy students, five weeks for Physical Therapy students and seven weeks for Occupational Therapy students), (3) to record observations in a notebook using a semi-structured approach, and (4) to debrief their experiences about ISDM-in-practice and provide feedback on the initial ISDM training workshop. The students documented only those interactions where patients were willing to provide written consent. Approval for the project was obtained from UBC's Behavioural Research Ethics Board.

#### **Subject selection and recruitment**

The ISDM project was advertised through e-mail and class presentations to all senior-year students in the three disciplines scheduled to complete a clerkship experience in Term 2 of their academic year. Sixteen interested students (four from Pharmaceutical Sciences, six from Physical Therapy, and six from Occupational Therapy) were recruited as student researchers. While Physical Therapy and Occupational Therapy students did not receive any additional credits for their participation in the project, the Pharmacy students were enrolled in a four credit elective course crafted specifically for this project.

#### **Intervention: student training**

The ISDM concept based on the physician model was presented to the students during an initial ISDM training workshop that was scheduled prior to their clerkship.<sup>32</sup> The workshop was designed using the framework used for teaching medical students; this consisted of a lecture and illustration of the ISDM model using three clinical cases from each of the participating disciplines. The cases depicted an initial encounter between a health care practitioner and a patient using a common scenario seen in each of three professional settings. The Pharmacy case involved a female patient encounter regarding the purchase of a non-prescription product to manage her depression. The Physical Therapy scenario involved a client with a below knee amputation due to diabetes who was about to be discharged from a rehabilitation centre. The Occupational Therapy scenario involved a young woman referred to the community mental health team for psychosocial rehabilitation

subsequent to discharge from a hospital psychiatric unit. Each case was presented to the students by having one faculty member from each of the disciplines serve as the health care practitioner who role-played the encounter with a trained standardized patient. At the end of each encounter, the faculty member and the standardized patient analyzed the encounters according to the eight ISDM competencies, discussing which competencies they felt were practiced and the challenges they had experienced. The students were then given the opportunity to identify the competencies practiced in each scenario and to make comments and suggestions on how the encounter could be improved to address any missed competencies. This aspect of the workshop was particularly important for allowing the students to recognize the competencies in their respective professional settings.

In addition to these activities, Pharmacy students participated in supplementary activities as part of their elective course. Weekly small group discussions were held between the Pharmaceutical Sciences faculty members and students to discuss the current literature on patient-centered care in pharmacy, the ISDM model, and how and where ISDM could be practiced by pharmacists. Moreover, all Pharmacy students were asked to spend an afternoon in a community pharmacy of their choice prior to the start of their clerkship placement, to observe a pharmacist in a few patient-encounters practice and to practice the recording process using the field notebook developed for the study. Only those interactions where patients agreed to provide written consent were observed and recorded.

Following the clerkship completion, a further workshop was organized to capture the student researchers' experiences, observations and feedback associated with the practice of ISDM. Subsequently, students were asked to identify components of the workshops which could be enhanced.

#### **Data collection**

A pocket size field notebook was developed to assist the students with their data collection. All students were instructed to observe and record at least three patient-preceptor encounters per week over the duration of their clerkship. Students recorded "yes," "no," or "maybe" to indicate the ISDM competencies they observed.

#### **Analysis**

Two data sets were available for analysis: field notebooks and debriefing of the students' experiences during the follow-up workshop. Quantitative information was extracted from students' field notebooks to determine three things: (1) how frequently each competency was observed by the students during their clerkship experience, (2) which competencies evoked the greatest *uncertainty* among students, and (3) whether there were statistical differences among the three disciplines on either measure. Simple frequency tallies

first summarized how often students observed each competency as well as how often a competency was relegated to a "maybe" declaration, or was left blank altogether. Subsequently, these four categories (yes, no, maybe, blank) were collapsed into a two-value dichotomy of certainty (Certain=yes or no; Uncertain=maybe or blank). Chi-square tests of independence were carried out to assess differences between disciplinary groups with respect to rates of certainty and uncertainty of a competency's occurrence. Additional comparisons (not reported in detail) confirmed that differences among the various practitioners who modeled the encounters were small and insignificant when compared to differences between the disciplines. For instructional insights and diagnoses, there is often more to be learned from students' misunderstandings and uncertainties than from competencies about which they were relatively certain. A subsequent factor analysis examined their patterns of uncertainty in order to detect overall "themes" where they were unable or unwilling to confirm whether they had detected a competency transaction.

Qualitative information obtained from the follow-up workshop with the students were captured on flip-charts, entered into spreadsheet format and examined for common themes, including challenges/barriers which made the ISDM competencies difficult for their preceptors to demonstrate during the encounters.

### Results

A total of 145 practitioner-patient encounters were transacted by 13 practitioners, observed by 16 students and documented for eight ISDM competencies across the three disciplines during students' respective clerkship experiences; Pharmacy students observed 68 of these encounters, Physical Therapy students observed 41

encounters and Occupational Therapy students observed 36 encounters. Transactions in each of the three disciplines were different: for Pharmacy students, these encounters often involved requests for new and refill prescriptions, requests for non-prescription products, and discussions with patients requiring disease management consultations. Occupational Therapy students observed encounters ranging from discussions about purchasing wheelchairs to assessing the use of stress management strategies and evaluating various intervention outcomes. Physical Therapy students observed encounters involving assessment, treatment, and discharge planning situations. Thus, the observation of each encounter was deeply "embedded" (1) in the practitioner-patient interaction, (2) in the clinical issue, and (3) in the discipline. Although the encounters are "nested" in nature, the 145 encounters were treated as independent events and constituted the units of analysis throughout. For each encounter, each student reported his or her detection/non-detection of all 8 competencies.

The study's overall results are summarized in Tables 2 through 5. Table 2 summarizes student responses in detecting whether a competency had been demonstrated when summed across all eight competencies and at each of four levels of certainty: both overall certainty (represented by "yes" or "no") and uncertainty (represented by "maybe" or "blank"). Table 3 summarizes the percentage of encounters for which students believed with certainty that an ISDM competency did occur ("yes"). Table 4 summarizes the percentage of encounters for which students were uncertain whether or not a particular competency had been demonstrated (represented by a "maybe" entry or a "blank"). Table 5 encapsulates the students' views about barriers in practice that could interfere with the uptake of ISDM.

**Table 2** Students' levels of overall certainty and uncertainty as to whether a competency had occurred, reported as percentage (and frequency) combined across all eight ISDM competencies.

Rating	Encounters across all three disciplines n=145 (x8)	Pharmacy encounters n=68 (x8)	Physical Therapy Encounters n=41 (x8)	Occupational Therapy Encounters n=36 (x8)	Chi-Square	P-value
Certain, "Yes"	66.2% (768)	70.8% <sup>a</sup> (385)	55.5% <sup>a, b</sup> (182)	69.8% <sup>b</sup> (201)	23.57	<0.001
Certain, "No"	4.5% (52)	2.2% <sup>c</sup> (12)	9.2% <sup>c</sup> (30)	3.5% (10)	23.93	<0.001
Uncertain, "Maybe"	13.5% (157)	13.6% (74)	9.5% <sup>d</sup> (31)	18.1% <sup>d</sup> (52)	9.71	0.005
Uncertain, "Blank"	15.8% (183)	13.4% <sup>f</sup> (73)	25.9% <sup>e, f</sup> (85)	8.7% <sup>e</sup> (25)	38.56	<0.001

Chi-square tests were carried out for each row separately.

Note that a,b, etc identify significant chi-square tests for pairwise comparisons of disciplinary groups ( $p < .05$ )

a, b Pharmacy and occupational therapy students report significantly higher overall levels of certainty "yes" than physical therapy students.

c Physical therapy students report significantly higher overall levels of "no" than pharmacy students.

d Occupational therapy students report significantly higher overall levels of "maybe" than do physical therapy students.

e,f Physical Therapy students leave significantly more blank answers than either occupational therapy or pharmacy students.

**Table 3.** Percentage (and count) of ISDM encounters in which students from different disciplines believed with certainty (“yes”) an ISDM competency did occur. Competencies are ordered in descending order of certainty as observed across all three disciplines.

Competency	Encounters across all three disciplines n=145	Pharmacy Encounters n=68	Physical Therapy Encounters n=41	Occupational Therapy Encounters n=36	Chi-square	P-value
Develop Partnership	91% (132)	94% (64)	83% (34)	94% (34)	4.61	NS
Ascertain and Respond to Patient Ideas, Concerns and Expectations	81% (118)	88% <sup>a</sup> (60)	66% <sup>a</sup> (27)	86% <sup>a</sup> (31)	9.16	0.010
Agree on an Action Plan	78% (113)	74% (50)	76% (31)	89% (32)	3.41	NS
Negotiate a Decision	74% (107)	84% <sup>b</sup> (57)	66% <sup>b</sup> (27)	64% <sup>b</sup> (23)	6.70	0.035 <sup>b</sup>
Present Evidence/Assess Alternatives	66% (96)	71% (48)	54% (22)	72% (26)	4.05	NS
Identify Choices/Evaluate Evidence	64% (93)	71% (48)	59% (24)	53% (19)	3.63	NS
Establish Preferences for Patient Role in Decision Making	41% (59)	49% <sup>c</sup> (33)	22% <sup>c</sup> (9)	47% <sup>c</sup> (17)	8.33	0.015
Establish Patient Preferences for Information	35% (50)	37% (25)	20% <sup>d</sup> (8)	47% <sup>d</sup> (17)	6.81	0.033 <sup>d</sup>

Chi-square tests were carried out for each row separately.

Note that <sup>a,b</sup>, etc identify significant chi-square tests for pairwise comparisons of disciplinary groups ( $p < .05$ )

<sup>a</sup> Pharmacy students and Occupational Therapy students reported more instances of Ascertaining and Responding to Patient Ideas, Concerns etc. than Physical Therapy students.

<sup>b</sup> Pharmacy students reported significantly more instances of Negotiating a Decision than either of the other two groups.

<sup>c</sup> Pharmacy students and Occupational Therapy students reported more instances of Establishing Patient Role in Decision Making than Physical Therapy students

<sup>d</sup> Occupational Therapy students reported more frequent Establishing of Patient Preferences for Information than Physical Therapy students.

Table 2 summarizes students' field notebook entries, summed across all eight ISDM competencies. All student entries were coded into one of four categories: “yes”, “no” or “maybe” (as instructed in the workshop), and “blank” where they left a competency unreported. Categories about which students were comparatively certain (represented as “yes” or “no”) form the table's top two rows, while the last two rows summarize information about which they were less certain (represented as “maybe” or “blank”). Overall, students' records indicated that they believed about two-thirds of the ISDM competencies to have been transacted during the preceptor/patient encounter (66.2%). Similarly, the students reported that they believed that no ISDM competency was transacted in about four percent (4.5%) of the encounters. Thus, students felt relatively certain (“yes” or “no”) for about 71% of the overall transactions. As illustrated in Table 3, for the competencies students had observed with certainty, there were comparatively few differences across disciplines.

More problematic (and perhaps more informative for instructional diagnosis) are the two categories of “uncertain”, where students coded either “maybe” or left the competency “blank” when they felt unprepared to make any judgment call about its occurrence. The students coded approximately 30% of the overall practitioner-patient encounters as “maybe” or simply left the relevant space blank, leading to speculation that for more than a quarter of these competencies, the training workshop failed to raise their identification, clarity and interpretation to a sufficient level of awareness and comprehension for students to hazard an informed judgment call. Students differed in their expressions of uncertainty depending on their discipline: the “maybe” category was used significantly more often by Occupational Therapy students than by Physical Therapy students, while leaving blank items was more common among both Pharmacy and Physical Therapy students than Occupational Therapy students.

**Table 4.** Percentage (and count) of patient encounters where students were *uncertain whether or not* the respective ISDM competency was attained (represented as a "maybe" or a "blank" entry). Competencies are ordered in descending order of Uncertainty, as observed across all three disciplines.

Competency	Encounters across all three disciplines n=145	Pharmacy Encounters n=68	Physical Therapy Encounters n=41	Occupational Therapy Encounters n=36	Chi-square	P-value
Establish Patient Preferences for Information	64% (92)	62% (42)	78% <sup>a</sup> (32)	50% <sup>a</sup> (18)	6.66	0.036
Establish Patient Preferences for Role in Decision Making	57% (82)	50% <sup>b</sup> (34)	73% <sup>b</sup> (30)	50% <sup>b</sup> (18)	6.43	0.040
Identify Choices/Evaluate Evidence`	29% (42)	28% (19)	24% (10)	36% (13)	1.35	NS
Present Evidence	28% (41)	27% (18)	34% (14)	25% (9)	1.00	NS
Negotiate a Decision	19% (28)	12% (8)	24% (10)	28% (10)	4.82	NS
Agree on an Action Plan	17% (24)	25% <sup>c</sup> (17)	7% <sup>c</sup> (3)	11% (4)	6.82	0.033
Ascertain and Respond to Patient Ideas, Concerns, & Expectations	12% (18)	7% <sup>d</sup> (5)	24% <sup>d</sup> (10)	8% (3)	7.56	0.023
Develop Partnership	9% (13)	6% (4)	17.1% (7)	5.6% (2)	4.61	NS

Chi-square tests were carried out for each row separately.

Note that <sup>a,b</sup>, etc identify significant chi-square tests for pairwise comparisons of disciplinary groups ( $p < .05$ )

<sup>a</sup> Physical Therapy students were significantly more uncertain about Preference for Information than Occupational Therapy students.

<sup>b</sup> Physical Therapy students were significantly more uncertain about Patient Role in Decision Making than Pharmacy students or Occupational Therapy Students.

<sup>c</sup> Pharmacy students were significantly more uncertain about Agreement on an Action Plan than Physical Therapy students.

<sup>d</sup> Physical Therapy students were significantly more uncertain about Patient Ideas, Concerns and Expectations than Pharmacy students.

Table 4 details decreasing percentages of encounters where students in the three disciplines were *uncertain* whether a competency had been observed (documented by "maybe" or "blank" entries), for each of the eight competencies. The left column summarizes overall student difficulties and shows that two competencies were problematic in more than 50% of the encounters: ascertaining whether Patients Preferences for Information and Patient Preferences for Role in Decision Making had occurred. Examination of the different disciplines' *uncertainties*, these same uncertainties were evident within each of the disciplines.

Again, comparing among disciplines, about half of the eight ISDM competencies were viewed with significantly greater uncertainty ( $p < .05$ ) by students in some disciplines than others. The greatest differences among the disciplines existed between the Physical Therapy and Pharmacy students. Pharmacy students were significantly more uncertain regarding the Action Plan competency than Physical Therapy students; and Physical Therapy students were significantly more uncertain than Pharmacy students regarding the Patients' Preferences for Role in Decision Making and the Ascertain and Responding to Patients' Ideas,

Concerns and Expectations competencies. When comparing Physical Therapy and Occupational Therapy students, the Physical Therapy students were significantly more uncertain whether the Patients' Preferences for Information competency had been established.

In addition to assessing the eight competencies one-by-one in a sequential examination of student uncertainty and differentiation by discipline (Table 4), a more comprehensive perspective can be gained by looking at their competency uncertainties collectively via factor analysis of their dichotomized responses. Three such uncertainty themes (factors) were evident and accounted for about 59% of the common factor variance – a measure of how well the three themes represent the totality of information embedded among student reporting patterns on all eight competencies. These three uncertainty themes were (1) Engaging patients with: (a) their health condition evidence, (b) identifying choices and research evidence which (c) enables a decision to be negotiated and made (23% of the common factor variance); (2) Establishing patient preferences for: (a) information and (b) role in decision-making and existence

of any conflicts, leading to (c) developing a partnership with the patient (19%); and (3) Agreeing on: (a) an action plan and arrangements for follow-up which (b) ascertains and responds to patient ideas, concerns and expectations (16%). Importantly, students from all three disciplines reported similar uncertainty patterns for the first and third themes and differed only in the second theme (patient preferences for information and role in decision-making leading to partnership development) where Physical Therapy students were considerably (.72σ) and significantly (F=9.27, p<.001) less able to identify whether such negotiations had been transacted

between preceptor and patient. A two-way ANOVA confirmed that the significant effects were due to interprofessional differences (F=7.61, p<.001) rather than to inter-preceptor variations (F=2.61, p<.077).

Table 5 summarizes the barriers to practicing ISDM identified by students from all three disciplines during the follow-up workshop. Overall, the barriers voiced by all disciplines were grouped under four common themes: systems barriers; environmental barriers; patient characteristics; and practitioner characteristics.

**Table 5.** ISDM barriers identified by students in all three disciplines during follow-up workshops

<b>Systems</b>	<b>Environmental</b>	<b>Patient characteristics</b>	<b>Practitioner characteristics</b>
<ul style="list-style-type: none"> <li>• Lack of provincial drug programs</li> <li>• Absence of treatment protocols</li> <li>• Inadequate reimbursement models for pharmacists (i.e., product focused)</li> <li>• Reimbursement and protocols established by third party payers</li> <li>• Lack of sound evidence for some treatment protocols</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of private space to interact with patients (i.e. designated counseling area)</li> <li>• Practice setting limitations (i.e., Institutions – fast discharges, focus is to address primary problem, treatment protocols, acutely ill patients)</li> <li>• Equipment shortages</li> </ul>	<ul style="list-style-type: none"> <li>• Decreased motivation or interest for ISDM, only in for quick “tune-up”</li> <li>• Decreased levels of attentiveness/cognition</li> <li>• Fatigue, multiple diagnoses, or acutely ill</li> <li>• Fear to contradict, therefore upset practitioner</li> <li>• Time constraints</li> <li>• Not expressing their preferences, but relying on the opinion of the practitioner</li> </ul>	<ul style="list-style-type: none"> <li>• Language barriers</li> <li>• Failure to ask patients to clarify their preferences</li> <li>• Making assumptions and getting past them</li> <li>• Lack of skills or time to evaluate evidence for treatments being considered</li> <li>• Time constraints</li> </ul>

**Discussion**

An overwhelming number of students reported that their participation in the project had provided them with a better understanding of the ISDM concept and had influenced the ways in which they would approach future communication with patients in their own practices to facilitate ISDM with their patients. However, the large uncertainty factor associated with ascertaining two of the eight competencies (Table 4) suggest that some modification to the ISDM training program must be considered.

Two competencies particularly difficult for students to ascertain were Patient Preferences for Information and Patient Preferences for Role in Decision Making (Table 4). Students' documentation indicated that they were reluctant to make decisions about these two competencies in more than half of the practitioner/patient encounters. Such large uncertainties suggest insufficient student training.

Student discussions during the follow-up workshop provided interesting insights about why they may have struggled with certain competencies. Several students commented that they lacked sufficient experience with ISDM to judge confidently the presence or absence of certain competencies. Particularly problematic were Patient Preferences for Information and Patient

Preferences for Role in Decision Making where practitioner/patient encounters involved follow-up visits (where initial care had already been initiated) or visits with patients who were known to their preceptors through previous unrelated interactions. In such situations, preceptors did not explicitly elicit preferences for information or decision making from their patients, but rather assumed the patients' preferences based on previous interactions (not visible to the students observing the encounters); patients played along by taking on a passive role with respect to these decisions. Following these encounters, the preceptors often rationalized their actions to the students by stating they did not feel it necessary to ask patients about their preferences, because they already knew their patients' preferences through previous encounters. This led to an interesting debate between the students and research team, with the students proposing that it may not be necessary to practice all eight of the competencies in certain patient encounters where patients are known to practitioners through previous interactions. Such patient interrogations may be redundant since practitioners would already know such information.

The research team conducted a literature search to determine whether strategies for obtaining patients' preferences had been reported previously. The main contexts for the search looked at patient preference as

shared decision making, client- or patient-centered care, and informed consent. Patients' preferences per se had been explored in the medical literature, and clearly supported the importance of eliciting patients' preferences with each interaction. The research suggested that many patients have strong treatment preferences that are not always predictable, and that doctors often fail to understand them.<sup>18,20,29</sup> Britten *et al.* demonstrated that many assumptions made by doctors, although seemingly reasonable, are inconsistent with patient preferences in particular circumstances.<sup>37</sup> They identified 28 misunderstandings in the 35 consultations that they observed, and many of the misunderstandings were based on inaccurate assumptions. Doctors either thought they already knew the patients' preferences and therefore did not need to inquire about them or thought that such knowledge was unimportant. For example, many of the doctors seemed unaware of some of their patients' aversion to taking medications. Patients did not articulate this aversion and the doctors erroneously assumed that patients wanted prescriptions. On the contrary, in situations where the doctors asked patients directly what they thought about taking medicines, misunderstandings were avoided.<sup>31</sup>

Similarly, Baker *et al.* and Jette *et al.* studied patient participation in goal setting with Physical Therapists and found that most patients did in fact wish to be involved in setting their own rehabilitation goals.<sup>29,30</sup> The literature also suggests that given the power imbalance between the practitioner and the patient, the onus should be on the doctors to elicit patients' ideas and expectations and encourage involvement.<sup>31</sup> Patients are frequently passive during medical encounters and tend to wait for verbal cues from their doctors before expressing themselves. When patients are provided with basic information that can help them clarify their choices and understand which decisions would benefit from their input, many are willing to be involved in decision-making tasks.<sup>10,34,38</sup> Thus, incorporating these insights into future ISDM training programs may help students from other health disciplines avoid assumptions about their patients' preferences.

During the follow-up workshop, students proposed several modifications to the current ISDM training program. First, they proposed that future workshops should incorporate a variety of practitioner-patient scenarios to allow students the opportunity to compare and contrast the practice of ISDM under different circumstances. They suggested that the scenarios should be designed to depict initial and repeat encounters between the practitioner and the same patient for related and unrelated issues. For example, Pharmacy students recommended developing two additional scenarios. One scenario could involve a patient coming into the community pharmacy to get a new prescription filled (illustrating an initial encounter), followed by the patient returning to the pharmacy a few weeks later for a comprehensive disease management consultation with the same pharmacist on a different or

same issue. Another scenario could be designed to reflect ISDM practice involving a hospital pharmacist-patient encounter. Second, they suggested that the scenarios be designed to demonstrate both "good" and "bad" ISDM encounters, to allow the students to compare scenarios in which different competencies are demonstrated. Additionally, they recommended that the format of the workshop be modified to allow all students the opportunity to role-play with the standardized patients, rather than just learn by observing faculty members in that role.

One other possible modification to the program considered by the project team was to provide students with more stringent instructions on how to complete the field notebook. The documentation process in the current field notebook allowed the students to be indecisive by selecting the "maybe" option without having to offer a rationale. In the future, to better understand students' decisions, changes to the data collection tool should be considered. For example, replacing the "maybe" category with a more precise option such as "I am unable to determine" in addition to "yes" and "no," along with directions to describe why they were unable to determine would provide valuable insights to the project team. Another useful modification to the data collection tool would be to instruct students to avoid leaving any assessment blank. Furthermore, analysis of students' records indicated that the "maybe" category was used significantly more often by Occupational Therapy students than by Physical Therapy, while the practice of leaving items blank differed significantly among all three groups. However, the project team was not able to explain why such differences between the disciplines should exist.

During the follow-up workshop, students identified many challenges and barriers to the practice of ISDM. Students reported several health systems and environmental and patient characteristics that contributed negatively to the practice of ISDM. Under such circumstances, many practitioners may be inclined to limit the practice of ISDM to patients they deem to have the greatest need or to omit competencies that appear to be time consuming, such as identifying patients' preferences and providing full and unbiased information. One such barrier included current health care policies and protocols in British Columbia. Students expressed that the current health systems did not provide adequate incentives for ISDM practice, but often required practitioners to balance issues of individual versus collective benefit. For example in pharmacy, a restricted Provincial drug program and a reimbursement model that is limited to the dispensing of a drug product but excludes patient consultation does not support ISDM. In Occupational Therapy settings, ISDM is limited by system barriers such as third party payers who provide vocational rehabilitation services but do not allow much decision making by their clients. With respect to institutional settings, students suggested that their very nature reduces patients' involvement in decision-making;

particularly the structures of correctional institutions, inpatient psychiatric units, emergency, and acute care wards. In addition, institutions' use of clinical protocols and their concern with liability and safety provide few opportunities for ISDM.

Students also identified certain patient specific characteristics, observed during their clerkship experiences that they thought would hinder the practice of ISDM. Occupational Therapy students found it challenging to communicate with clients who had insufficient, or in certain instances, no ability to speak English. This problem was further complicated when interpreters were limited or unable to present options in an unbiased manner. In the linguistically diverse British Columbia landscape, students agreed that this would be a significant barrier to engaging in ISDM.

Pharmacy students noted that patients coming into the community pharmacy for a disease management consult, to have a specific health question answered, or to discuss an undesirable medication effect, were more likely to engage in ISDM. In contrast, patients coming in with small children or to obtain medication for acute problems such as pain, cold symptoms or pneumonia, were more reluctant to engage in ISDM. To address this issue, students recommended that the project team consider an ISDM model that was more flexible and dynamic; for example, a model that allows initiation of some ISDM competencies during the initial interaction, with others developed over time during subsequent interactions.

The literature on ISDM and patient-centered care has identified similar barriers to those shared by the students.<sup>24,36</sup> Gotler *et al.* suggested that patients with acute illnesses may have different needs than patients who are ambulatory and/or experiencing chronic diseases.<sup>39</sup> Moreover, patients who are acutely ill may value a physician style that emphasizes technical proficiency, while chronically ill patients may desire a more participatory clinical relationship. Thus, practitioners may want to select patient populations and settings where ISDM may be most efficiently practiced; making efficient use of the scarce commodities of time and human resources. The students also suggested that the project team consider a model that was more flexible and dynamic to accommodate different patient situations. For example, a first-time encounter with an acutely ill patient may lend itself to certain competencies better than a first time encounter with a chronically ill patient. Incorporating the current students' experiences along with the findings from the ISDM literature into future ISDM training workshops may facilitate a healthy discussion and better student preparation for dealing with complex patient encounters prior to starting their clerkships.

Another challenge to practicing ISDM, as experienced by the students, was the lack of evidence to support some

of the treatment modalities routinely practiced. Many health care professionals either do not have evidence-based information immediately available because they find it too time consuming to keep themselves current or lack the training to critically evaluate the literature available. Such situations make it challenging for practitioners to present evidence-based options to patients.

Although not an objective of the study, a striking observation was made when the students' notations in the field notebook were examined across all three disciplines. For example, for encounters where the presence or absence of a competency was observed with "certainty" ("yes" or "no"), Table 2, the entries from Pharmacy students more closely paralleled the entries from Occupational Therapy students than either one of these disciplines did with Physical Therapy students. Similarly, examining the students' patterns of uncertainty ("maybe" or "blank" in Table 4), the physical therapy students had significantly more difficulty identifying whether Patient Preferences for Information and Patient Preferences for Role in Decision Making had been transacted between their preceptor and patient. Since this study employed no external and independent observer of preceptor/patient encounters across the three disciplines, it is impossible to know whether the differences observed by the Physical Therapy students resulted from preceptors who did not model the ISDM competencies clearly enough or from students who were less able to detect them. However, if one were to speculate, it is possible that the similarities between Pharmacy and Occupational Therapy students' experiences arise from their respective models of practice. Occupational Therapy follows a client-centered philosophy that is exemplified in practice through the Occupational Performance Process Model.<sup>26</sup> This model solicits clients' input at each stage, from problem identification to the evaluation of Occupational Therapy intervention. Thus, the clients' preferences for information, their role in decision-making, and contribution of ideas and expectations fits within the model and shares some similarities with the pharmaceutical care model, which posits a covenantal relationship between practitioner and patient. In contrast, Physical Therapy has historically followed more closely a biomedical model of practice that offers fewer opportunities for patient input.<sup>26</sup> It would be interesting in future studies to explore the reasons for the similarities between Occupational Therapy and Pharmacy students, and the differences between Physical Therapy and Occupational Therapy students.

As always, there are limitations in our study. First, although the recruited preceptors represented "best practice," this term was loosely defined and did not consider the practice of ISDM. While many practitioners support the use of ISDM, the literature indicates that few practitioners use ISDM in their practices due to various challenges discussed above. Thus, the students'

observations could not be validated against any known standard.<sup>38</sup> Second, the students themselves were in the acquisition phase of their learning and therefore were less confident in their own ability to identify competencies that were not explicitly presented by their preceptor. Thus, the current findings should be used cautiously to make inferences about the extent to which ISDM was practiced at the participating sites. Third, the research protocol posed some problems with respect to patient recruitment and data analysis. Students found that patients were often reluctant to provide a written consent unless they already had an existing relationship with their practitioner. This limited the number of encounters students were able to observe. Students also expressed that many of the interactions they observed served as valuable learning opportunities that went beyond ISDM, often making it difficult for students to stay focused on the ISDM competencies. This may have affected the data collection process. Fourth, students would have liked guidance about how much discussion is required between the patient and practitioner to judge that a competency has been achieved. This is a more difficult issue to resolve, to provide such guidance, we need a

thorough understanding of how clinicians and patients make routine decisions before we can determine how much discussion is reasonable; an objective which was beyond the scope of this study. However, perhaps limiting students' observations across a limited spectrum of practices may have helped minimize this problem.<sup>38</sup>

### Conclusion

Without exception, the students found the ISDM training workshop, along with the observation phase during the students' clerkship period, a very valuable experience that increased their understanding of ISDM. Although the students viewed the competencies as relevant, they made suggestions for a model that was more flexible and dynamic. Finally, the instructional imperatives require that ISDM competencies be clearly foregrounded by instructors during training and early demonstration, then gradually faded and de-scaffolded as students gain expertise. The next step of the project is to modify the ISDM training program based on feedback received from the students and to offer the program to both students and interested preceptors.

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