
Exploring the attitudes of Pharmacy students to clinical communications training

C. Gilligan, S. Outram, R.L. Rasiah & J.M. Cooper

Abstract

Background: Communication skills and the development of positive relationships between health professionals and patients are central to quality health care. Communication skills training using role-play with actors trained as simulated patients is effective and well received by students, but its value is decreased as student numbers in each class increase.

Aims: This study, involving students enrolled in the Master of Pharmacy program at the University of Newcastle, aimed to: explore the students' attitudes towards communication skills sessions and their confidence in participating in role-play scenarios with simulated patients; assess the extent to which students perceive that the skills practised during these sessions are implemented during placement; assess whether an association exists between attitude, confidence and outcomes in terms of assessment marks relating to communication skills; and identify students' needs in relation to communication skills training.

Method: A series of questionnaires were completed by students in years one and two as they progressed through the program. Attitudes towards and confidence in learning communication skills were compared before participation in tutorial sessions, following several sessions and again after extensive clinical placement opportunities. Open-ended responses were analysed thematically.

Results: Most students reported that they valued and benefited from the communications skills sessions in terms of confidence and an awareness of communication skills. Recognition of the importance of learning communication skills increased after tutorials, and students indicated that the tutorials had helped in equipping them with skills which they used in clinical placement situations. No association could be demonstrated between students' attitudes or confidence and their results in oral exams. Large tutorial groups were reported as a key limitation to the effectiveness, and students' enjoyment of, communications skills sessions.

Conclusion: The results of this study reinforced the benefit of the sessions but also highlighted the limitations of running sessions with large numbers of students. Online interactive programs and recorded scenarios represent possible options to overcome the limitations of class size, whilst achieving the objectives of communication skills training.

Keywords: teaching methods, pharmacy, communication

University of Newcastle

Correspondence

Dr Conor Gilligan
University of Newcastle
David Maddison Building
Cnr King & Watt Sts
Newcastle 2300
Email: Conor.Gilligan@newcastle.edu.au

Background

The importance of communication skills and the development of positive relationships between health professionals and patients have gained increasing recognition in recent times as being central to quality health care (WHO 2010). As a result, communication skills training, encompassing both verbal and non-verbal interpersonal skills, has become more prominent in the education of all health professionals (Noland & Rickles 2009; Rolfe & Pearson 1994; Tamblyn et al. 2007; Teutsch 2003; Waterfield, Aspinall & Hall 2009). Good communication and interpersonal skills are associated with an improvement in patient outcomes (Lerman et al. 1993), a reduction in complaints to medical regulatory authorities (Tamblyn et al. 2007) and reduced medication errors (Noland & Rickles 2009). Several surveys have found that patients would like better communication with their doctors and other health professionals (Lansky 1998; Lerman et al. 1993). International recommendations call for health professionals to be educated to deliver evidence-based and patient-centred care as members of an inter-professional team (Robertson & Bandali 2008).

Extensive evidence supports the use of trained actors as simulated patients for educational purposes resulting in significant improvement in students' social and history-taking skills (Maguire, Clarke & Jolley 1977; Tamblyn et al. 2007; Wind et al. 2004). Simulation allows for the specific encounter which the student experiences to be designed by the educator to ensure that students experience a range of situations, and

allows for ongoing opportunities for students to practise new skills as they learn them (Monaghan et al. 1997). It also provides a controlled and safe environment for students and enables students to receive direct observation and immediate, constructive feedback, both from the observer and the patient (Monaghan et al. 1997). This type of learning has been suggested to be equally or more effective than real patient encounters in terms of transferring knowledge from the classroom to practical settings (Issenberg et al. 2002), and the vast majority of students feel that clinical patient care is learned more effectively through the use of simulated patients than through standard lectures (Fernandez et al. 2007). Further, learning how to deal with difficult patients and offering advice to patients in a simulated environment is, at least initially, more appropriate than allowing students to 'practise' on real patients and avoids any ethical complications associated with errors.

The importance of learning communication skills has been recognised by students (Smith 1980; Walker, Haldane & Alexander 1981), many of whom want more formal courses in this area (Rosenthal & Ogden 1998). The use of simulated patients in the assessment of clinical skills has been rated as a positive learning experience by students. However, the attitudes of students towards the training itself is mixed (Rees & Garrud 2001).

The Master of Pharmacy program at the University of Newcastle is a two year, trimester-based, entry level program with 36 weeks of timetabled teaching each year. Students must have completed a Bachelor degree, including

completion of the prerequisites of Chemistry (2 semesters), Mathematics, Physiology, Biochemistry/Molecular Biology and Pharmacology at a tertiary level. Students come from a range of backgrounds and undergraduate degrees. Approximately 90 students are currently accepted into the program each year, and in 2009, this included 26 international students in year one of the program and a large proportion of students with a primary language other than English. While specific communications training is not a prerequisite for program entry, international students are required to have an English proficiency of no lower than 6.0 in International English Language Testing System (IELTS, available at IDP Education).

Communication skills training for all students studying the Master of Pharmacy is currently undertaken in small group tutorials with simulated patients. Sessions give students an opportunity to develop counselling skills and practise delivering patient-centred care. An increase in the number of students in recent years has, however, meant that group sizes have expanded, and classes of up to 25 students are participating in communications skills sessions with one simulated patient and one tutor at any time. The extent to which students utilise the skills they have practised in their practical placements is unknown. Further, the attitudes of students towards these communication skills sessions, and their confidence in participating in role-play scenarios, has not been documented, but it is expected to influence their assessment outcomes as well as their confidence in interacting with patients in real-life situations, such

as during clinical placement in both hospitals and community pharmacies.

Here, we present the results of an evaluation of the communication skills training in the Master of Pharmacy program at the University of Newcastle. The evaluation aimed to:

- Explore the students' attitudes towards communication skills sessions and confidence in participating in role-play scenarios with simulated patients;
- Assess whether an association exists between attitude, confidence and outcomes in terms of assessment marks relating to communication skills;
- Assess the extent to which students believe the skills practised during these sessions are implemented during placement; and
- Identify students' needs in relation to communication skills training and inform curriculum re-design and the design of an online learning tool to complement the current sessions.

Methods

The University of Newcastle Human Research Ethics Committee (approval H- 2009-0125) approved this study.

The study involved cross-sectional data collection from students in both year levels of the program in 2009. Surveys were distributed to year one students at intervals throughout the year: one at the beginning of their communication skills practical sessions in trimester one (survey 1.A), prior to any communication skills tutorials; one in trimester two, after participation in several sessions with simulated patients (survey 1.B); and one

at the end of trimester three after their first practical placement (survey 1.C). Each of these surveys was completed during tutorial time. Year two students were asked to complete a one-off questionnaire during a full group lecture at the end of their program (survey 2) to gather retrospective information regarding their attitudes and confidence when they began the program, their participation and enjoyment of sessions and their application of the communication skills taught.

In 2009, year one students attended one lecture and two tutorials focussed on core communication skills in trimester one, and two tutorial sessions with simulated patients in each of trimesters two and three. These sessions involved role-play with simulated patients, recording and review of role-play counselling scenarios and practise with fellow students in small groups. In year two, students rotate in trimesters two and three between attending two weeks of intensive clinical skills sessions at the university and two weeks of placement in hospitals or community pharmacies. The clinical skills sessions include a two hour session discussing key concepts and skills required for clinical communication and a full day session role-playing counselling scenarios with simulated patients. As students' therapeutic knowledge advances, communications skills sessions integrate a more therapeutic focus. All communications sessions are normal timetabled classes, but attendance is not recorded and is therefore not regarded as compulsory. However, the year two clinical skills intensive sessions are compulsory, with attendance being a requirement of course completion.

During each session, tutors attempt to ensure that each student has at least one opportunity to practise a role-play. Unfortunately, this was not achieved in 2009 in every case due to class sizes and time constraints.

The questionnaire items were adapted from a scale used to measure medical students' attitudes towards communication skills learning (Rees, Sheard & Davies 2002). The wording of questions was changed to ensure relevance for pharmacy students, and the questionnaire was tested with a small number of students for appropriateness of questions and language. The questionnaires collected both quantitative and qualitative data using Likert scale responses (five point scale) as well as providing opportunities for extended written comments.

Descriptive statistics were used to interpret the results of each questionnaire individually. Repeat questions in surveys 1.A and 1.B, and from survey 1.A to survey 2, were compared using t-tests of the difference in mean score.

Results

Questionnaire results

Of the 90 year one students in trimester one, 84 (93%) completed survey 1.A, 32 (of 85) enrolled in trimester two (38%) completed survey 1.B and 68 (of 81) enrolled in trimester three (84%) completed survey 1.C. Forty-three of the 69 year two students (62%) enrolled in trimester three completed survey two (the single year two questionnaire).

Overall, responses indicated that students perceived communication skills as important in pharmacy (see Table 1).

Table 1: Percentage of participants who agree or strongly agree with each common statement across questionnaires and results of *t*-tests of the mean responses.

	Survey 1.A (n=84)	Survey 1.B (n=32)	Survey 1.A to survey 2 <i>t</i> -test (<i>p</i>)	Survey 2 (n=43)	Survey 1.A to 2 <i>t</i> -test (<i>p</i>)
In order to be a good Pharmacist, I must have good communication skills	95.2	96.9	-1.605 (0.119)	97.7	-2.203 (0.033)
I can't see the point of learning communication skills	7.2	3.1	2.555 (0.016)	2.3	2.453 (0.018)
Nobody should fail in the Master of Pharmacy program for having poor communication skills	19.1	25	-2.416 (0.022)	16.3	0.840 (0.406)
Developing my communication skills is just as important as developing my knowledge of Pharmacy	73.8	93.8	-2.509 (0.018)	58.2	-0.113 (0.911)
Learning communication skills will help me respect patients	73.8	84.4	-2.436 (0.021)	58.2	1.750 (0.087)
I haven't got time to learn communication skills	6	6.3	-0.373 (0.712)	9.3	-1.874 (0.068)
Learning communication skills will help develop my team working skills	95.2	93.8	0.297 (0.768)	60.4	3.106 (0.003)
Learning communication skills is fun	41.7	78.2	-2.625 (0.013)	51.2	-1.453 (0.154)
Learning communication skills is too easy	7.2	15.6	1.555 (0.130)	18.6	-0.725 (0.472)
Learning communication skills states the obvious and then complicates it	13.1	18.8	-0.135 (0.893)	37.3	-0.942 (0.352)
I find it difficult to trust information about communication skills given to me by lecturers who are not Pharmacists	2.4	3.1	-1.095 (0.282)	N/A	N/A
I think learning communication skills is useful in the Pharmacy program	91.7	100	-3.542 (0.001)	93	-1.982 (0.054)
My therapeutic and pharmacokinetic knowledge will get me through the Pharmacy program - not my communication skills	4.8	0	1.000 (0.325)	32.6	-2.583 (0.013)
I find it difficult to take communication skills seriously as a part of the Pharmacy program	10.7	6.3	0.177 (0.861)	16.3	-1.157 (0.254)
Learning communication skills is important because my ability to communicate is a lifelong skill	90.5	96.9	-0.532 (0.599)	88.4	-0.190 (0.850)
Communication skills learning should be left to psychology students	0	0	0.750 (0.459)	2.3	0.725 (0.473)

The proportion of respondents who agreed or strongly agreed with each common statement was compared between the surveys 1.A and 1.B and between the survey 1.A and survey 2. Agreement that 'to be a good Pharmacist, I must have good communication skills' increased at each stage, with the difference between the 1.A and 2 responses reaching significance ($t=-2.203, p=0.033$). The proportion who could not 'see the point of learning about communication skills' decreased at each stage, with significantly fewer students holding this view from survey 1.A to survey 1.B ($t=2.555, p=0.016$) and from survey 1.A to survey 2 ($t=2.453, p=0.018$). A significant increase occurred from survey 1.A to 1.B in the proportion of students who agreed that 'developing skills in communication is just as important as developing knowledge of Pharmacy' (73.8% to 93.8%, $t=-2.509, p=0.018$). An increase also occurred during this time-frame in students who felt that learning communication skills was fun (41.7% to 78.2%, $t=-2.625, p=0.013$) and would help them to respect patients (73.8% to 84.4%, $t=-2.436, p=0.021$). By survey 1.B, 100% of respondents viewed learning communication skills as useful ($t=-3.542, p=0.001$) compared to survey 1.A. While proportional responses differed, the only items for which these differences reached significance between the year one and year two surveys were: 'learning communication will help develop my team working skills' ($t=3.106, p=0.003$) and the statement that therapeutic knowledge will 'get me through the Pharmacy program – not my communication skills' ($t=-2.583, p=0.013$).

Associations with assessment outcomes

Assessment of communication skills is integrated with that of therapeutic knowledge in oral exams, some of which include counselling role-plays with an examiner or simulated patient. There was no association between overall results for year one oral exams involving some assessment of communication skills and completion of the questionnaire or responses to questionnaire items. In year two, the perception of learning communications as fun was slightly negatively correlated with results in therapeutics ($r=-0.407, p=0.021$) and counselling ($r=-0.387, p=0.029$) in trimester two, and counselling ($r=-0.412, p=0.019$) in trimester three. Results for the trimester three therapeutics oral exam were correlated with a belief that the real-life situation is different from the communications tutorials ($r=0.385, p=0.030$), students disagreeing that their attitude towards communication skills changed after placement ($r=-0.399, p=0.024$), and disagreeing that their perception of their own communications skills changed after placement experience ($r=-0.369, p=0.038$). These items also had slight correlations (not significant) with trimester three counselling, and trimester two counselling and therapeutics oral exam results. It should be noted that we refer here to overall results of oral exams as opposed to results relating specifically to communication skills. It is possible that if communication results were examined in isolation, these results may differ.

Perceived application of communication skills

The use of learned communication skills on placement was indicated by 74% of responders (n=50) in the year one survey 1.C (mean 3.7) and 74% of responders (n=43) in the year two survey (mean 3.8). These results do not reflect actual application of objectively measured skills, but rather the students' own perception of the application of skills which is likely to reflect their confidence and self-perceived competence. After their first placement experience, most students were neutral regarding the experience resembling the tutorial situation, with 43% selecting the neutral option and 34% indicating that the experience did in fact resemble tutorials (mean 2.9). A small majority (54%) of responders felt that they were more confident on their placement due to the opportunity to observe and practise during communication tutorials (mean 3.4) and 57% felt, after their placement, that they needed to make more effort to practise and improve during the tutorials (mean 3.6). Year two students also indicated that they were more confident dealing with patients on placement due to the opportunity to observe and practise during tutorials (mean 3.6). Sixty percent of year two students indicated that they would have liked more opportunities to participate in role-play (mean 3.5).

Qualitative Responses - students' needs

Students' written responses revealed consistent themes in the attitudes towards learning communication skills and the sessions. Students expressed an improved confidence and relaxed feeling about communication and

counselling after participating in and observing role-plays. Observing others and receiving feedback allows students to understand 'various pros and cons and to learn something in every session'. In expressing the importance of learning about communication skills, one student commented:

"In one sense it is even more important than therapeutics! If we cannot explain concepts to patients, we cannot use what we know and we may not really understand therapeutics if we cannot explain it to lay people."

Some students noted that role-plays were very different from real practice but that the role-plays did help to improve their confidence for 'the real thing':

"The real situation (placement) is different compared to tutorials ... great to learn in trimester and put into practise while being on prac."

"I felt that on placement I was 10 times better than in front of a class - I was communicating with one person, NOT being watched over and scrutinized by 20 classmates."

"...beneficial, to not only Pharmacy but my overall confidence and ability to perform my job efficiently and successfully."

The students' comments reflected the challenges faced with large student numbers and the resource-intensive nature of these types of sessions. When asked how the sessions could be improved, students repeatedly stated that they would like 'more attempts at counselling – especially in small groups'. The large class sizes increased anxiety and the feeling that students were being 'fake' in role plays. Also,

large groups meant that there 'was too much time spent watching (which is helpful) when the main point is improving our own skills'. There was some sense that the class size limited the benefit of the sessions.

"...make me nervous and I can't concentrate when doing it in a large group whereas on placement I do not get nervous and am better able to counsel."

"Counselling on placement was far easier than trying to counsel in front of a class. One-on-one or small groups better."

"I felt uncomfortable in communication skills in role-playing formats and thought I would have difficulty in real-life also, however once in a real setting I felt much more comfortable communicating than I ever did in a tutorial."

Students also articulated the benefits of the sessions and the specific approach used.

"I observed different pharmacists counselling on placement and saw how they changed for different patients... I wouldn't have been aware of this without the tuts."

"I liked that we had actors that didn't know our pharmaceutical knowledge. If they can understand us, then I would imagine that so would the general public."

"...fun yet challenging... really good interactive learning experiences."

"Tutors give very useful advice..."

"Comments received are very useful and watching others allows us to learn from mistakes."

Students did find role-plays difficult when they had limited therapeutic knowledge.

"Having knowledge of the medication makes it easier to counsel."

"...more information on the order of issues to address... students who work in Pharmacies already know what to ask..."

Discussion

Increasingly, pharmacy schools in Australia are incorporating communication skills into their curricula. This study provides evidence for the effectiveness of communication skills education in helping students understand the importance of these skills in their profession, helping them to respect patients and helping them to work in professional teams. In general, the students valued and benefited from the communications skills sessions in terms of confidence and an awareness of communication skills. The evaluation reinforced the benefit of the sessions but also highlighted the limitations of running them with large numbers of students. The results were consistent with the literature and reports relating to communications programs internationally.

In a pharmaceutical communication course in the United States, students have indicated that large class sizes impair their ability to learn effectively through the use of simulated patients (Monaghan et al. 1997). In that evaluation, even though the

communication skills training met its own objectives, it was rated as non-beneficial by students due to the size of the class, which limited the opportunity to learn and increased communication apprehension and anxiety (Monaghan et al. 1997). Sufficient person-to-person interaction is necessary for the development of adequate communication skills, and therefore communication courses should be designed with this in mind.

While there was no apparent correlation between attitudes to or attendance at communications skills tutorials and assessment results in year one, and only limited correlations in year two, this result may be limited by a number of factors. It is likely that the students who were already confident and competent with communication, many of whom already do casual work in pharmacies, score well in therapeutics and counselling assessments. This is supported in the data in that the students who scored well in the oral exam were less likely to believe that their communication skills changed after their placement, and more likely to see the 'real thing' as different to tutorials. This suggests that these students already acknowledged the importance of communication and possibly began with good confidence levels. This observation could lead to the development of appropriately designed competency based assessments of communication skills at intervals throughout the program. While an initial assessment of competency would increase the academic workload, it would enable academics to target basic skills training towards the poorer students, allowing the more competent students to practise their skills at a more advanced level. It is expected that while

an individuals' confidence cannot be objectively measured, this would be reflected in communication competency, and thus less confident students would be identified for additional training as well as those with less developed skills. This is particularly relevant given the number of international students in this and other Australian Pharmacy Programs, and the range of English communication skills among this group. As the Master of Pharmacy program leads directly into clinical work, it is important that all graduates have achieved an appropriate level of competency in communication skills.

The later questionnaires were only completed by a relatively small proportion of the students who attended the tutorial sessions. The more positive view of learning communication skills in survey 1.B may be the result of having experienced and enjoyed tutorials in trimester one and two but may also be influenced by the rate of attendance. Those students who attended the sessions, and therefore completed the questionnaire, are likely to be those who enjoy and value the sessions more than those who choose not to attend. Evidence exists for the enhancement of student learning outcomes through the use of entertaining and fun learning strategies (Stupans, Scutter & Pearce 2010). Response rates were lower in later surveys, and in particular in survey 1.B. This is likely to be associated with the non-compulsory nature of attendance and possible timing in relation to exams or other assessment deadlines. Thus, this data is likely to be skewed and results should be interpreted with caution.

The students gave positive comments and feedback about the sessions and identified the limitations of face-to-face sessions with limited resources. Several

comments indicated that the measure of the communications sessions as fun would be improved through the use of smaller group sizes to decrease idle observation time and repetition. It is also possible that this data was gathered from students who perceived that they needed to improve their communication skills and therefore would benefit from more opportunity for practice. The timing and structure of sessions meant that, at times, communications skills tutorials occurred before students had an opportunity to fully understand the relevant clinical issues. This was purely a logistical issue and could be overcome with better planning and coordination between the various academic staff teaching the courses and the staff responsible for timetabling.

The questionnaire results and students' comments have led to a series of modifications to the curriculum and recommendations for further development and change. Ideally, communications skills tutorial sessions would occur frequently – perhaps weekly or bi-weekly, linked with topics covered in therapeutics courses, and with groups of no more than ten to twelve students. In reality, however, the logistics of running multiple sessions with small groups of students and the added cost of simulated patients is a barrier to this. While some adaptations are being made to address the issues raised by students, there is a need for alternative approaches to addressing communication skills in the curriculum.

Some efforts are already being made, with online and virtual resources being developed for teaching purposes. The use of digital media with pharmacy students in the United Kingdom and Australia has been well received (Bearman 2003; Waterfield, Aspinall & Hall 2009).

Recent technological advances have led to the development of several programs using digital patients and virtual role-play in clinical communication education. However, the limitation of these types of computer-generated scenarios is the lack of realistic scenarios and authentic characters. An attempt to overcome this has been made by nursing academics at Newcastle and Central Queensland universities, using commercially prepared latex masks for academics to role-play 'real-life' unpredictable characters. Because the characters are academics with a wealth of knowledge and experience, students are challenged, and their performance critiqued in a way that is both non-threatening and educational. This approach has been well received and positively evaluated by students (Happell 2009).

Each of these approaches using people is, however, resource intensive. Alternative solutions are needed to achieve effective, high quality communication skills training with large numbers of students. Online interactive programs using a combination of techniques and including recorded scenarios using actors or other alternatives represent possible options for the future.

While the value of communication skills is acknowledged, many challenges exist for the effective implementation of this component into curricula.



References

- Bearman M (2003) Is Virtual the Same as Real? Medical Students' Experiences of a Virtual Patient. *Academic Medicine* 78, 5: 538-45.
- Fernandez R, Parker D, Kalus JS, Miller D, Compton S (2007) Using a Human Patient Simulation Mannequin To Teach Interdisciplinary Tteam Skills To Pharmacy Students. *American Journal of Pharmaceutical Education* 71: 1-7.
- Happell B (2009) Innovative Approach to Nursing Education. *Australian Nursing Journal* 17: 39.
- IDP Education. International English Language Testing System, IDP Education <http://www.idp.com/welcome-to-idp.aspx>. (Last accessed: December 2010)
- Issenberg SB, Mcgaghie WC, Gordon DL, Symes S, Petrusa ER, Hart IR, Harden RM (2002) Effectiveness of a Cardiology Review Course for Internal Medicine Residents Using Simulation Technology and Deliberate Practice. *Teaching and Learning in Medicine*, 14: 223-228.
- Lansky D (1998) Measuring What Matters To the Public. *Health Affairs* 17: 40-41.
- Lerman C, Daly M, Walsh WP, Resch N, Seay J, Barsevick A, Birenbaum L, Heggan T, Martin G (1993) Communication between Patients with Breast Cancer and Health Care Providers: Determinants and Implications. *Cancer* 72: 2612-2620.
- Maguire GP, Clarke D, Jolley B (1977) An Experimental Comparison of Three Courses in History-Taking Skills for Medical Students. *Medical Education* 11: 175-182.
- Monaghan MS, Gardner SF, Hastings JK, Reinhardt GL, Knoll R, Vanderbush RE, Cantrell M (1997) Student Attitudes toward the Use of Standardized Patients in a Communication Course. *American Journal of Pharmaceutical Education* 61: 131-136.
- Noland CM, Rickles NM (2009) Reflection and Analysis of How Pharmacy Students Learn to Communicate about Medication Errors. *Health Communication* 24: 351-360.
- Rees C, Garrud P (2001) Identifying Undergraduate Medical Students' Attitudes towards Communication Skills Learning: A Pilot Study. *Medical Teacher* 23: 400-406.
- Rees C, Sheard C, Davies S (2002) The Development of a Scale to Measure Medical Students' Attitudes towards Communication Skills Learning: The Communication Skills Attitude Scale (CSAS). *Medical Education* 36: 141-147.
- Robertson J, Bandali K (2008) Bridging the Gap: Enhancing Interprofessional Education Using Simulation. *Journal of Interprofessional Care* 22: 499-508.
- Rolfe IE, Pearson SA (1994) Communication Skills of Interns in New South Wales. *Medical Journal of Australia* 161: 667-670.
- Rosenthal J, Ogden J (1998) Changes in Medical Education: The Beliefs of Medical Students. *Medical Education* 32: 127-132.
- Smith DJ (1980) Knowledge + Skills - Apprehension = Effective Communication. *Canadian Pharmaceutical Journal* 113: 255-258.

- Stupans I, Scutter S, Pearce K (2010) Facilitating Student Learning: Engagement in Novel Learning Opportunities. *Innovative Higher Education* 35: 359-366.
- Tamblyn R, Abrahamowicz M, Dauphinee D, Wenghofer E, Jacques A, Klass D, Smee S, Blackmore D, Winslade N, Girard N, Du Berger R, Bartman I, Buckeridge DL, Hanley JA (2007) Physician Scores on a National Clinical Skills Examination as Predictors of Complaints to Medical Regulatory Authorities. *Journal of the American Medical Association* 298: 993-1001.
- Teutsch C (2003) Patient-doctor Communication. *Medical Clinics of North America* 87: 1115-1145.
- Walker LG, Haldane JD, Alexander DA (1981) A Medical Curriculum: Evaluation by Final-year Students. *Medical Education* 15: 377-382.
- Waterfield J, Aspinall V, Hall S (2009) The Use of Digital Video Media in the Teaching of Communication Skills. *Pharmacy Journal* 282: 135-136.
- Wind LA, Van Dalen J, Muijtjens AM, Rethans JJ (2004) Assessing Simulated Patients in an Educational Setting: The MaSP (Maastricht Assessment of Simulated Patients). *Medical Education* 38: 39-44.
- World Health Organization (WHO) (2010) Exploring the Attitudes of Pharmacy Student: Framework for Action on Interprofessional Education and Collaborative Practice. *Health Professions Networks Nursing and Midwifery Office, Human Resources for Health*. Geneva, World Health Organization.