

# Communicating the benefits and risk of medicines to patients: The pharmacy student's point of view

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## Background

Understanding the benefit-risk (BR) profile of a medicine is a key aspect of ensuring that the appropriate medicine is being prescribed to the right patient. The FDA and European Medicines Agency have made BR assessment and communication to patients a priority in their long-term strategies.<sup>1, 2</sup>

To better understand whether pharmacy students are being prepared for these challenges, we have undertaken a survey of 5th and 6th year students and faculty at 5 pharmacy schools. Participants completed an online pilot survey designed to assess how students are being taught to evaluate the BR profiles of medicines, how BR is being assessed by student pharmacists and how this information is being communicated to their patients during internships. These surveys are the first to develop a baseline of how this important topic is being taught in pharmacy schools and to assess how students are translating these teachings into real-world applications.

Results of this pilot study will seek to identify commonly used BR communication strategies and best teaching practices, and to form the basis for a more comprehensive survey of BR to inform more robust teaching strategies including new courses in the field of BR.

## Aims and Objectives

Representative pharmacy schools in the United States and the United Kingdom were surveyed to determine:

- In which courses faculty believe that BR assessments are taught and in which courses student felt they were actually taught BR assessment techniques
- What techniques are used to teach BR assessment and communication
- What resources are recommended and used for BR assessments
- How students relay BR information to their patients
- Areas in which faculty believe they excel or require improvement in teaching BR assessments

## Methods

- Primary faculty contacts from UK- and US-based pharmacy schools were asked to complete a survey of curriculum used to train in BR assessment/communication. A companion student-based survey was sent to penultimate and final-year pharmacy students enrolled at the same institutions.
- The surveys were developed through consultations between the author and his advisors at Temple University and with input from Cardiff University faculty. These were reviewed by several practicing pharmacists including a recent graduate.
- The survey was then constructed using SurveyMonkey®. An introductory letter prepared by the author was distributed via email by the primary faculty contact at each school and contained a link to the SurveyMonkey site.
- Demographic characteristics of the respondents were collected. Because none of these data could disclose personal information, it was determined by Temple University that no review by the Institutional Review Board would be required for this study nor would informed consent be required for students to participate.

## Methods cont

Both surveys requested details regarding:

- In which courses are students taught how to assess the benefit-risk balance of a medicine and in which courses are they taught how to communicate the benefit-risk profile a medicine to patients?
- What source(s) do students use to find benefit-risk information that informs their patient counseling strategy?
- By what means do students most frequently access drug information sources?

In addition, the Faculty survey requested details regarding:

- What teaching strategies do you believe to be the most effective when educating students in how to communicate the benefits and risks associated with a specific therapy?
- In what aspects do you think your program excels in educating students with respect to giving them the ability to assess and convey benefit-risk information?
- Where do you think improvements can be made to your program to better equip pharmacy students to educate patients on the benefits and risk of therapies?

The Student survey requested details regarding:

- When providing patients with medication information, what do you most often use/do to facilitate the conversation?

## Results

### Faculty Survey

Six faculty members from 5 institutions responded to the survey; 2 were faculty staff and 4 were Academic Chairs or higher rank. One had less than 5 years teaching experience; one had between 11 and 15 years and 4 had more than 15 years. The following institutions participated: University of Southern California (USA); Queen's University Belfast (UK); University of Manchester (UK); University of Portsmouth (UK); University of Strathclyde (UK).

Faculty were asked to select up to three teaching strategies they believed to be the most effective when educating students in how to communicate the benefits and risks associated with a specific therapy (Table 1). A variety of teaching approaches are used by the responding universities.

Table 1. Most effective strategies to teach students to communicate the benefits and risks of medicines

Strategy	Considered most effective, % Faculty (n = 6)
Role playing	83%
Team-based learning	67%
Professional practice laboratory experience	67%
Lectures	50%
Use of standardized assessment approaches*	33%

\*Eg, root-cause analyses, structured benefit-risk assessment/documentation templates.

## Results cont

Faculty believed their institutions had the following strengths with regard to teaching BR assessments:

- Students can access information online on campus
- Case discussion groups provide opportunity for BR teaching
- Good use of simulation and drafting written therapeutic frameworks
- Use of critical appraisal exercises
- Clinical teaching and pharmacy practice teaching
- Advanced pharmacy practice experience developed in pharmaceutical care classes and hospital-based tutorials
- Students are expected to review and judge appropriateness of prescribed drug-regimens for patients, and recommend changes if deemed necessary

Faculty believed their institutions could improve by:

- Promoting more information that is available on the topic
- Increasing interactive nature of role play exercises (2 schools)
- Providing students more explicit curricula on the topic
- Providing more practical exposure to patients and healthcare professionals

### Student Survey

One hundred students completed some component of the survey. Of the 66 who provided geographic information, 44% were from the US and 56% from the UK; 79 provided data on school year: 62% were in their penultimate professional year (3rd professional year) and 38% were in last professional year (4th professional year).

Students were asked what method they most often used or did to facilitate the conversation when providing patients with medication information (Table 2).

Table 2. Students' methods for facilitating benefit-risk communication

Method	Most often used, % Students (n = 93)
Ask patients if they have questions about their medications	87%
Answer patients' specific requests for medication information	75%
Ask patients to move to a private counselling section of the pharmacy	46%
Offer patient package inserts, labelling or printouts	45%
Offer patient education material supplied by the manufacturer	38%
Describe how patients should comply with the implementation of a product-specific risk mitigation programs	32%
Document the BR conversation in the patient profile	8%

### Comparisons Between Faculty and Student Responses

Faculty and students were asked in which courses did they teach (faculty) or were they taught (students) how to assess and communicate the benefit-risk balance/profile of a medicine to patients (Table 3).

Faculty and students were also polled as to

- Source(s) they recommend (faculty) or use (students) to find benefit-risk information that informs patient counseling strategy (Table 4).
- What means they (faculty) believe that students most frequently used to access drug information sources and students were asked the means that they typically use (Figure 1A,B).

## Results cont

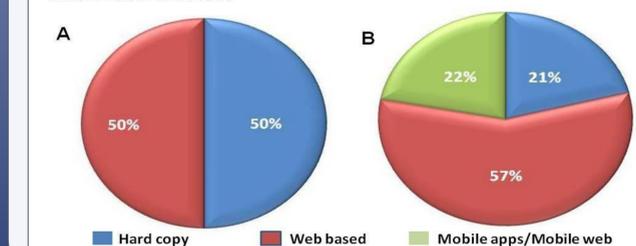
Table 3. Courses that teach the assessment and communication of benefit-risk

Course	Assess B-R Balance		Communicate B-R Profile	
	Faculty (n=6)	Students (n=94)	Faculty (n=6)	Students (n=94)
Pharmacy and Therapeutics Lab	83%	92%	50%	49%
Advanced Pharmacy Practice Experience	67%	39%	67%	40%
Pharmacy Practice Lab	50%	49%	83%	39%
Simulated counseling experiences	50%	33%	67%	52%
Introductory Pharmacy Practice Experience	50%	41%	67%	45%
Required communications class	33%	39%	50%	33%
Simulated counseling experiences and communications class	33%	29%	50%	47%
I was not formally educated on counseling patients in this topic	17%	15%	0%	15%
Elective communications class	0%	9%	0%	14%

Table 4. Faculty-recommended sources and student-used sources for benefit-risk information

Information source	Recommended by Faculty (n=6)	Used by Students (n=99)
<b>US Sources</b>		
Electronic Medicines Compendium	67%	23%
Martindale	67%	22%
American Hospital Formulary Service (AHFS) Drug Information	17%	3%
Lexi comp	17%	36%
Micromedex	17%	37%
MedWatch	17%	5%
US Food and Drug Administration	17%	9%
Epocrates	0%	22%
Injectables drug guide	0%	2%
Specific system at your place of employment	0%	2%
USP Dispensing Information (USP DI)	0%	1%
Natural Medications Comprehensive Database	0%	1%
Natural Standard database	0%	1%
Physicians Desk Reference	0%	1%
Red Book	0%	0%
<b>UK Sources</b>		
British National Formulary	83%	56%
MIMS	33%	6%
UK medicines information	33%	10%
Herbal Medicines	17%	5%
Clarks Analysis of Drugs and Poisons	0%	4%
Health & Social Care Information Centre (HSIC)	0%	0%

Figure 1. (A) Faculty beliefs regarding student access to information sources and (B) actual student access to information sources.



## Discussion

- A variety of approaches are used to teach BR assessment and communication, the most common being role-playing exercises.
- Faculty members believe more hands-on experiences such as simulated counseling experiences and more exposure to healthcare professionals and patients can improve student BR communication and assessment.
- Students most often ask patients if they have questions as a means of ensuring that patients understand the BR profile of their therapy.
- The students and faculty agreed as to which courses teach BR assessment and communication. BR is being taught in more than one course or laboratory. This is encouraging, as growing emphasis will be put on these methods and a curriculum should reflect this multi-pronged emphasis.
- There was less consistency with regard to how students obtain or are taught to obtain BR information. This could be problematic due to emphasis being put by faculty on obtaining information through hard copy sources, when in actuality, students revealed a much higher interest obtaining information from web-based and mobile applications. The difference suggests the need for faculty to adjust to more current technologies and to investigate and focus on applications and web-based sources with the most credibility.
- These surveys provide a baseline analysis that can guide pharmacy academia in how to better prepare students in assessing the BR profile of a medicine for a particular patient's condition. It is the first targeted survey to assess these strategies and to compare differences in how pharmacy school students and faculty perceive their training in BR communication.
- We believe that these results will form the basis for a more widespread survey and the these and future results can be used to guide a more consistent approach to BR assessment and communication training.

## Recommendations for future study

- Repeat this study in a larger cohort of schools and students to obtain sufficient responses to compare results by school and country.
- Determine which web-based resources and mobile applications students most frequently use to obtain BR profile information, and determine the credibility of these sources.
- Investigate which methodologies are emphasized most frequently during simulated counseling experiences and Pharmacy Practice Labs, which schools more effectively prepare their students for BR profile assessment and communication, and how these methods can be used in schools that are not as well versed in these areas.

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