▲ Item Generation and Pilot Testing of the Comprehensive Professional Behaviours Development Log

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The purpose of this project was to generate and refine criteria for professional behaviors previously identified to be important for physical therapy practice and to develop and pilot test a new instrument, which we have called the Comprehensive Professional Behaviours Development Log (CPBDL). Items were generated from our previous work, the work of Warren May and his colleagues, a competency profile for entry-level physical therapists, our regulatory code of ethics, and an evaluation of clinical performance. A group of eight people, including recent graduates, clinical instructors and professional practice leaders, and faculty members, refined the items in two iterations using the Delphi process. The CPBDL contains nine key professional behaviors with a range of nine to 23 specific behavioral criteria for individuals to reflect on and to indicate the consistency of performance from a selection of "not at all," "sometimes," and "always" response options. Pilot testing with a group of 42 students in the final year of our entry-to-practice curriculum indicated that the criteria were clear, the measure was feasible to complete in a reasonable time frame, and there were no ceiling or floor effects. We believe that others, including health care educators and practicing professionals, might be interested in adapting the CPBDL in their own settings to enhance the professional behaviors of either students in preparation for entry to practice or clinicians wishing to demonstrate continuing competency to professional regulatory bodies. J Allied Health 2006; 35:89–93.

HEALTH PROFESSIONAL EDUCATION has long focused on content knowledge and skill acquisition that is foundational and specific to each discipline. Increasingly, educators are interested in the less tangible content areas of clinical reasoning[1] and professional behaviors,[2] which have more similarities than differences among health care disciplines. Professional behavior is a broad concept that comprises many overlapping elements; May et al.[3] referred to this concept as a repertoire of behaviors required for successful practice.

This new focus on professional behaviors has occurred in many health care disciplines because of the recognition that problems on clinical placements and, subsequently, public complaints to professional regulatory bodies often relate to poor professional behaviors rather than to inadequate knowledge or skills. We agree with Randolph[4] that professional behaviors need to be developed and nurtured in both the academic and clinical education settings. In the past, there has been an implicit expectation that students develop professionalism as they progress through professional programs; however, specific educational activities had not been routinely implemented. It is now recognized that students can benefit from explicit and systematic exposure to the development of professional behaviors.[5]

Using the nominal group technique and the Delphi process,[6] we developed our concept of key professional behaviors among students, clinical instructors, and faculty members.[7] The key professional behaviors identified were accountability, communication, adherence to legal and ethical codes of practice, respect, sensitive practice, lifelong learning, evidence-based practice, client-centered practice, critical thinking, and professional image. In a second phase of this work, we developed a series of strategies to foster these professional behaviors,[8] and, not surprisingly, one of them was "explicit teaching." This report focuses on the third phase: development of an instrument to evaluate professional behaviors as students progress through our program.

A critical component of an educational focus on the development of professional behaviors is identification and use of a sound evaluation instrument.[2] Use of such an instrument provides individuals with information about their professional development and programs with information about the effectiveness of teaching and learning strategies to promote professionalism. Using a framework suggested by May et al.,[3] we developed a self-administered instrument incorporating the key professional behaviors previously identified[7] for use in the academic setting. We elected to use a self-administered format for several reasons. First, it became clear to us that not all of the behavioral criteria would be observable by either faculty members or

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peers. Second, reflection is the core to successful professional practice[9] and is critical to continuing competency.[10] We viewed students' practice in reviewing their own professional behavior development as a key aspect of our educational strategy to enhance professional behaviors. The purpose of this report is to describe the instrument development and pilot testing of our Comprehensive Professional Behaviours Development Log (CPBDL).

Methods

Instrument Development

We used the Delphi technique[6] to gain consensus among our participants about criteria that are illustrative of the key professional behaviors we had previously identified.[7,8] An advantage of this group technique is that consensus is obtained through several rounds of iterations of written responses (either through the mail or e-mail), rather than bringing a group together. We were able to aggregate the judgments of our participants, who would be difficult to assemble because of geographic variation in place of work. We were fortunate to have a project coordinator, who participated in both of our previous consensus exercises, to collate responses from each iteration.

Participant Selection

All of the participants volunteered after receiving a personal invitation. Two participants were recent graduates; one was a medical student at the time of this work, and the other worked in a private orthopedic practice. One participant was a clinical instructor working in a rehabilitation amputee program, three were site coordinators of clinical education working in large teaching hospitals, two were professional practice leaders, one was an orthopedic clinical specialist, and two were faculty members with teaching responsibilities in rehabilitation and community settings courses. Consistent with our previous work,[7,8] we perceived all participants to be open minded, to possess good communication skills, and to be cognizant of professional behavior issues.

Item Generation

Item generation for our CPBDL began in January 2003. Foundation materials included our two previous reports,[7,8] the original ability-based assessment report,[2] a more recent, unpublished resource produced by May et al.,[11] the Competency Profile for the Entry-level Physiotherapist in Canada,[12] the Clinical Performance Instrument,[13] and the Code of Ethics for Physiotherapists.[14] Our project coordinator used these materials to glean a series of behavioral criteria for each of the 10 key professional behaviors. The behaviors of sensitive practice and respect were combined because we perceived significant overlap among the behavioral criteria, resulting in a final total of nine professional behaviors in our instrument.

Item Refinement

The first iteration using the Delphi technique[6] was conducted in early May 2003. Eight participants were sent a package electronically containing an introduction, background, and description of the intended purpose of the instrument, instructions for completion, and detailed criteria for each of the nine key professional behaviors. Participants were asked to complete a response option for each item as follows: keep as is, revise (with suggestions provided), or delete. We received responses from six participants. Our team, including the project coordinator and authors of this report, met to discuss the first-round results. The team reviewed all of the participants' suggestions for revision or deletion, and consensus was reached regarding changes for the next stage. We realized that there continued to be some overlap of criteria among different key behaviors.

The second Delphi iteration was conducted in mid-June 2003. An additional introductory paragraph was added to thank participants for their involvement in the previous iteration and to summarize the changes made in this second package. A focus of this second iteration was on refining the items, in part by minimizing the overlap among the key behaviors. Participants were asked to review the package and then indicate one choice for each item from the following response options: keep as is, revise, or move, providing suggestions for the latter two options as appropriate. When the responses were received (n = 6/8), the team met to discuss suggested revisions; changes were again made based on consensus. Most of the response options were "keep as is," and we realized that another iteration was not necessary.

Instrument Refinement

After the items were refined, we revisited other aspects of the instrument. We decided to scale the items based on the question "Do I perform this behavior consistently?" with three response options of "not at all," "sometimes," and "yes, always." We believe that our scoring system (described as follows) still fits with the scaling criteria for an evaluative tool.[15] If students do not have the opportunity for a specific behavior, they are instructed to check "not at all." Each key professional behavior was contained on a separate page. Similar to the experience of others,[4] we added a section for an "action plan" at the bottom of each page to provide students with the opportunity to develop an explicit plan for professional behavior development after reflecting on their profiles.

For the purpose of program evaluation, we recommend the following scoring system. "Not at all" entries are scored 0, "sometimes" are scored 5, and "always" are scored 10. Each key professional behavior score is normalized by summing all of the item scores and then dividing by the number of items to yield a behavior score between 0 and 10.

TABLE 1. An Example of One of the Key Professional Behaviors: Lifelong Learning

Key professional behavior: lifelong learning

- Take initiative to ensure continued acquisition and application of knowledge and technology through participation in professional development activities
- Promote research and participate in research when possible
- Participate in reflective practice and incorporate required change in practice
- Participate in mentorship to aid in the development of skills and behaviors in others as well as own skills and ideas

Professional Behavioral Criteria	Do I Perform This Behavior Consistently?		
	Not at All	Sometimes	Yes, Always
1. Demonstrate positive attitude toward learning.			
2. Identify and locate appropriate resources for learning.			
3. Offer my thoughts and ideas in written and/or verbal format.			
4. Identify need for further information.			
5. Use a collaborative approach for learning.			
6. Prioritize information needs.			
7. Identify learning needs based on previous experiences.			
8. Set personal and professional goals.			
9. Monitor my progress.			
10. Analyze and subdivide large questions into components.			
11. Embrace learning as a lifelong process.			
12. Seek out professional literature.			
13. Seek out additional learning opportunities.			
14. Motivate others to participate in ongoing learning opportunities.			
15. Critique sources of information such as research articles, Web sites, conference presentations, and continuing education courses.			
16. Apply new information and reevaluate performance.			
17. Formulate and reevaluate position based on available evidence.			
18. Act as mentor to others.			
My action plan			

PILOT TESTING

One of us (LB) pilot tested the final instrument with 42 students in the second half of their final year (early 2004), before the two senior clinical placements and a final academic term. Students were asked to complete the CPBDL following the instructions on the second page and to indicate on the form if there were any areas that were unclear.

Results

INSTRUMENT DEVELOPMENT

An example of one of the key professional behaviors (lifelong learning) appears in Table 1. The other eight professional behaviors are formatted similarly. The entire instrument is available from the School of Physical Therapy Web site (http://www.uwo.ca/fhs/pt/PDFs/CPBDL.pdf).

PILOT TESTING

No student identified an area that was unclear. Students were able to complete the item scoring within 50 min and develop an action plan in one to two hours. When we reviewed the distribution of item scores, we noted variation across most of the key behaviors, indicating lack of both a ceiling and floor effect among students in the final portion of the curriculum. Still, there were a number of items that were marked "yes, always" from all 42 students; one item in adherence to legal and ethical codes, two relating to client-centered practice, and five in empathy/sensitive practice and respect. Occasionally, students indicated "not at all" (one item in lifelong learning and three in professional

image). More than half the class reported "sometimes" for five items in accountability, five items in evidence-based practice, seven items in critical thinking, six items in lifelong learning, and seven items in professional image.

Discussion

Use of the Delphi process to refine the behavioral criteria for each of the nine key professional behaviors supports the content validity of the CPBDL. Our pilot test indicated that the items are clear, that they are feasible for students to complete in a reasonable time frame, and that there is no overall ceiling effect when completed by students nearing the end of our professional program. Students reported performing some professional behaviors consistently. Not surprisingly, higher-level behavioral criteria were less likely to be reported by the students who might not yet have had specific opportunities. Finally, the large proportion of items identified as being performed "sometimes" indicates that there is room for improvement of many professional behaviors in many of our students. We believe that the CPBDL provides an explicit description of an array of professional behaviors that are useful to students in terms of both raising awareness and clearly specifying expectations of this critical aspect of their development as health care professionals. Unlike others, who have focused on either evaluation of professional behaviors in a clinical setting[16] or evaluation for the purpose of early detection and remediation,[4] we believe that we have developed a comprehensive instrument that will serve students during and after they leave our program.

As educators, group information from the CPBDL is useful as a form of program evaluation. We have now implemented the CPBDL at three points with our incoming class of 2004. We selected three courses that most explicitly match the contents of the CPBDL. Students complete the instrument at the end of a professionalism course in the first term of the program, after a critical appraisal and evidence-based practice course in the second term, and then in the final academic term after having completed their senior clinical placements. Educators teaching in these courses were aware of the content of the CPBDL. This strategy is consistent with our focus on explicit and systematic "teaching" of professional behaviors; the "teaching to the test" phenomenon is therefore both unavoidable and desirable. We selected the timing for the following reasons: (1) the first administration is intended to raise awareness of the multiple aspects of professionalism, (2) the timing in the critical appraisal course was before the first junior clinical placement (to highlight the importance once again), and (3) we wanted an indication of the extent of development of these professional behaviors, through student self-evaluation, on exit from both our academic and clinical education programs.

At this stage of instrument development, we focused on content validation through a consensus process among recent graduates, clinical instructors, and faculty members. More rigorous construct validation methods are needed to more fully understand the validity of the CPBDL. In our comprehensive program evaluation, we will have the opportunity to investigate convergent validity of the CPBDL by correlating specific behavior scores with the California Critical Thinking Disposition Inventory,[17] an attitudinal survey of use of research in practice,[18] and item scores from the Clinical Performance Instrument.[13]

Although we elected for a self-administered format, we concur that students' self-assessments of their professional behaviors might not be accurate.[5] Accuracy is proposed to be greater under conditions of faculty expecting students to gather and interpret data on their performances and when they require students to reconcile their evaluations with credible external sources.[19,20] We believe that the CPBDL might be better used in a guided reflection format,[21] in which clinical instructors and faculty critically appraise students' evaluations and then ask probing questions during a period of reflection.

We believe that the CPBDL will also be useful in postgraduate professional development by providing an explicit framework for practicing clinicians to reflect on and improve their continuing development of professionalism. The lack of a ceiling effect supports our contention that this tool might be useful to those in practice as well as students in entry-to-practice programs.

In conclusion, we have developed a comprehensive instrument to evaluate professional behaviors through a self-administered format. This instrument has preliminary evidence of content validity, and we have plans to further test construct validity. We believe that the professional behaviors in the CPBDL are not unique to physical therapy; many of the behavioral criteria are relevant to or easily adapted by any professional, including but not limited to those in health care practice such as occupational therapy, speech-language pathology, and nursing. We also believe that the instrument will be useful to current health care practitioners as a method to demonstrate continuing competency to regulatory bodies.

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References

1. Higgs J, Jones M: *Clinical Reasoning in the Health Professions*, 2nd ed. Oxford: Butterworth Heinemann; 2000.
2. Arnold L: Assessing professional behavior: yesterday, today, and tomorrow. *Acad Med* 2002; 77:502–515.
3. May WW, Morgan BJ, Lemke JC, et al: Model for ability-based assessment in physical therapy education. *J Phys Ther Educ* 1995; 9: 3–6.
4. Randolph DS: Evaluating the professional behaviors of entry-level occupational therapy students. *J Allied Health* 2003; 32:116–121.
5. Ginsburg S, Regehr G, Hatala R, et al: Context, conflict, and resolution: a new conceptual framework for evaluating professionalism. *Acad Med* 2000; 75(10 Suppl):S6–S11.

6. Delbecq AL, Van de Ven AH, Gustafson DH: *Group Techniques for Program Planning: A Guide to Nominal Group and Delphi Processes*. Middleton, CT: Green Briar Press; 1986.
7. MacDonald CA, Houghton P, Cox PD, et al: Consensus on physical therapy behaviours. *Physiother Canada* 2001; 53:212–218,222.
8. MacDonald CA, Cox PD, Bartlett DJ, et al: Consensus on methods to foster professional behaviors. *Phys Ther Educ* 2002; 16:27–36.
9. Schon, DA: *The Reflective Practitioner*. New York: Basic Books; 1983.
10. Jette DU, Portney LG: Construct validation of a model for professional behavior in physical therapy students. *Phys Ther* 2003; 83: 432–443.
11. May WW, Straker G, Foord-May L: *Opportunity Favors the Prepared*. Stoneham, MA: self-published; 2002.
12. Canadian Alliance of Physiotherapy Regulators, Canadian Physiotherapy Association, and Canadian University Physical Therapy Academic Council: *Competency Profile for the Entry-level Physiotherapist in Canada*. Toronto: Canadian Alliance of Physiotherapy Regulators, Canadian Physiotherapy Association, and the Canadian University Physical Therapy Academic Council; 1998.
13. American Physical Therapy Association: *Physical Therapist Clinical Performance Instrument*. Alexandria, VA: American Physical Therapy Association; 1997.
14. College of Physiotherapists of Ontario: *Code of Ethics for Physiotherapists*. Toronto: College of Physiotherapists of Ontario; 1996.
15. Streiner DL, Norman GR: *Health Measurement Scales: A Practical Guide to Their Development and Use*, 2nd ed. Oxford: Oxford University Press; 1995.
16. Koenig K, Johnson C, Morano CK, et al: Development and validation of a professional behavior assessment. *J Allied Health* 2003;32:86–91.
17. Facione PA, Facione NC, Giancarlo CAF: *The California Critical Thinking Disposition Inventory*. Millbrae, CA: California Academic Press; 1996.
18. Connolly BH, Lupinnaci NS, Bush AJ: Changes in attitudes and perceptions about research in physical therapy among professional physical therapist students and new graduates. *Phys Ther* 2001; 81:1127–1134.
19. Gordon MJ: A review of the validity and accuracy of self-assessment in health professions training. *Acad Med* 1991; 66:762–769.
20. Gordon MJ: Self-assessment programs and their implications for health professions training. *Acad Med* 1992; 67: 672–679.
21. Donaghy ME, Morss K: Guided reflection: a framework to facilitate and assess reflective practice within the discipline of physical therapy. *Physiother Theory Pract* 2000; 16:3–14.