

Hospital Pharmacists' Use of Physical Assessment: Attitudes and Frequency

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INTRODUCTION

Physical assessment is the act of appraising the bodily function and conditions of an individual.¹ Four techniques are employed: inspection, palpation, percussion, and auscultation. As early as 1977, Longe and Calvert published a series of "How To" articles for pharmacists and discussed the importance of developing expertise in physical assessment.¹

With the commitment of pharmacists to pharmaceutical care and the resulting expanded practice opportunities, the need for training in physical assessment is becoming more evident. Pharmaceutical care requires the pharmacist to take responsibility for the medication management of their patients and to document the outcomes of the services they provide.² This direct responsibility for pharmaceutical outcomes empowers pharmacists.¹ The provision of pharmaceutical care includes designing, implementing, and monitoring a therapeutic plan to produce specific outcomes for a patient.³ Physical assessment is a skill necessary to help patients achieve their desired outcomes.⁴ The benefits of the use of physical assessment include: improved communication skills with patients and other health care providers; more meaningful evaluation of drug therapies; and improved role perception by patients and other health care providers.⁵ The formal education and clinical experience of pharmacists supply many of the skills needed by primary care providers, yet physical assessment training is limited. Therefore, pharmacists are not fully capable of evaluating patients.²

Physical assessment data are often influenced by interpretation and it is believed that there are instances where a pharmacist would benefit from direct observation and assessment in monitoring the effects of drugs.⁶ However, there is little information in Canada regarding which specific skills are most crucial to patient monitoring and how often these skills are used by pharmacists.⁶ Adamcik and Stimmel surveyed American College of Clinical Pharmacy (ACCP) members regarding their use of physical assessment. Most of the 277 respondents (73%) had physical assessment training but did not regularly use it to monitor patients (67%) citing "inappropriateness" (51%), lack of training (28%), and lack of time (26%) as the main reasons.⁶

This project was undertaken to determine the attitudes of Toronto area hospital pharmacists toward physical assessment and the frequency of its use by these pharmacists to monitor patient response to therapy.

METHODS

A 4-page questionnaire based on the survey by Adamcik and Stimmel was developed. Two hundred surveys (each with an information sheet and a cover letter) were distributed in January 1996 to eight hospitals in the Toronto area. A representative pharmacist at each site was contacted to see if there were any problems comprehending the survey and e-mail was monitored for questions. Toronto area teaching hospitals were chosen for the survey due to cost considerations of survey administration, the increased likelihood of practitioners having had post-graduate training in physical assessment, and increased familiarity with student projects. Data are presented as the mean \pm standard deviation.

RESULTS

Of the 200 surveys sent, 101 were returned. One question was forwarded to the author with regard to clarifying items on the questionnaire. Demographic details regarding the respondents and their practice sites are provided in Tables I and II. Data regarding the specific areas of clinical training in which respondents have participated are presented in Table III. The average number of areas of clinical training/respondent was 3.4 ± 2.6 .

Most pharmacists (79%) spent no more than half of their time processing prescriptions and dispensing. One

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third of respondents indicated that they spent 31 to 50% of their time caring directly for patients (Table IV). The patient care activity carried out regularly (at least once a week) by the most respondents (91%) was dose selection (Table V).

In order to assess the importance of different sources of patient data, pharmacists were asked to grade data sources on a 5-point scale (1=most important, 5=least important). Respondents found a patient interview most important (1.4) and sources such as X-ray and ECG, the least important (2.1) (Table VI).

Approximately 23% of respondents had physical assessment training. Only 9% of respondents use a physical assessment regularly and 8% of respondents indicated that they had physician support for their use of physical

assessment. The most common physical assessment tools employed were the sphygmomanometer and stethoscope. Over half of respondents expressed a desire for more physical assessment training (Table VII).

The most frequently cited reason for not using physical assessment regularly was lack of training (Table VIII). Many pharmacists had several reasons why they did not use physical assessment.

The final questions asked which physical assessment skills were utilized in patient monitoring were, how competent respondents felt regarding a particular physical assessment activity, and if they desired more training in

Table I. Demographic Profile of Respondents
Note: All percentages have been rounded and may not add to 100%

	Sub-Categories	% OR # n = 101
Age (years)	20-30	50 %
	31-45	43 %
	45-55	6 %
	> 55	1 %
Gender	F	82 %
	M	18 %
Degree*	BScPhm or equivalent	101
	PharmD	0
	PharmD post BSc	18
	MScPhm	1
	MSc	1
	BSc	1
Post-graduate training*	Hospital Residency	55
	Fellowship	6
	Other	3
	None	38
	No Response	2
Present Position*	Director/Manager	11
	Staff Pharmacist	60
	Faculty Member	7
	Clinical Pharmacist	59
	Fellow/ Resident	2
	Researcher	3
	Drug Information Coordinator	1
	Mean number of positions/ respondent	1.5 ± 0.6
	Location of Practice*	Hospital Pharmacy
Outpatient Pharmacy		11 %
Both of above		2 %
Outpatient Clinic		1 %

* = more than one area may have been selected

Table II. Practice Areas of 101 Respondents
Note: More than one area may have been selected

Practice Areas	# of respondents
Neonatal	11
Pediatrics	18
Adult	82
Geriatrics	48
Mean number of practice areas / respondent	1.6 ± 0.6

Table III. Specific Areas of Clinical Training of 101 Respondents
Note: More than one area may have been selected

Area of Training	# of respondents
Pharmacokinetics	47
Infectious Disease	35
Cardiology	32
Pediatrics	18
Psychiatry	10
IV Drug Therapy	13
Nutrition	6
Critical Care	29
Poisoning	7
Nephrology	17
Oncology	29
Neurology	7
Gastroenterology	17
Geriatrics	19
Endocrinology	3
Obstetrics/Gynaecology	8
Dermatology	6
Pulmonary Care	9
Rheumatology	8
Transplant	10
Neonatology	10
Community Practice	1
Orthopaedics	1
None or No response	7
Mean number of areas of training/respondent	3.4 ± 2.6

specific areas (Table IX). The physical assessment activity that the greatest number of pharmacists regularly performed (at least once/hr, day, or week) was mental status assessment (14%, n=101). Twenty-three percent of respondents did not answer this section. Respondents believed themselves to be the most competent (12%) in assessing skin, hair, and nails. Forty percent did not reply to this section. One third to almost half of the respondents indicated a desire for more training in the various areas listed. Approximately one-third of respondents did not respond to this section.

DISCUSSION

The data collected in this survey indicate that most of the hospital pharmacists who responded did not receive formal training in physical assessment. Furthermore, most did not utilize physical assessment on a regular basis (90%), yet have a desire for training in physical assessment (53%). These results contrast with those reported by Adamcik and Stimmel in so far as most of the respondents to the earlier survey had training in physical assessment. Nevertheless, most respondents did not routinely use physical assessment to monitor patients. This difference is likely due to the high proportion of respondents in the earlier survey who had post-graduate training.

If pharmacists are to be educated to play a more central role in patient care, an understanding of the significance of changes in a patient's presentation must be incorporated in the curriculum.⁶ Whether or not the pharmacist performs the physical assessment may be less important than understanding the meaning of these findings.⁶ On the other hand, pharmacists should be able to determine drug effects independently instead of relying on other practitioners. A pharmacist may be more acutely aware of drug effects/side effects.⁷ There are a number of settings in pharmacy practice where there may be a role for pharmacists in performing physical assessment:

- 1) Community pharmacists with a consultation area could perform public and semi-private assessment activities when appropriate in the management of a patients' drug therapy.⁶
- 2) In community practice, pharmacists are often requested by the patient to recommend therapy. With

Table IV. Percentage of Time Spent in Pharmacy Practice Activities by Respondents

Activity	% of Time Spent						No response
	0-10 %	11-30 %	31-50 %	51-65 %	66-80 %	80+ %	
Prescription processing/dispensing	27	30	23	14	1	4	2
Direct patient care	6	24	34	14	18	3	2
Management/Business	59	9	3	34	0	0	29
Administration	54	30	6	1	0	0	14
Teaching	59	29	6	1	0	0	5
Research	62	9	3	0	0	0	26

Table V. Frequency of Performance of Patient Care Activities by Respondents
 Note: Regularly = at least once/week Rarely = once/month
 All numbers are percentages which have been rounded and may not add to 100%

Activity	Regularly	Rarely	Never	No Response
Interpret Lab results	88 %	9 %	3 %	0 %
Identify adverse reactions	89	11	0	0
Select Dose	91	8	0	1
Evaluate Drug therapy	87	7	5	1
Identify drug interactions	90	9	0	1
Select appropriate drug	84	0	2	1
Manage adverse reactions	78	18	2	2
Order Laboratory tests	37	43	20	1
Identify new medical probs	47	43	11	0
Educate patients	86	12	2	0
Take a med history	63	32	4	1
Administration	0	22	78	0
Prescribe therapy	23	27	49	2

Table VI. Perceived Level of Importance of Patient Data Sources for Monitoring Therapy
 Note: 1=extremely important 2=important 3=moderately important 4=of minor significance 5=not important
 All figures reported as number of respondents, n = 101

Source of Patient Data	Level of Importance					No Response	Mean level of importance
	1	2	3	4	5		
Progress notes	58	37	6	0	0	0	1.5
Patient Interview	75	20	4	1	1	0	1.4
Physical examination	39	41	15	5	0	1	1.8
Laboratory results	53	41	7	0	0	0	1.5
Other	24	46	18	3	6	4	2.1

- physical assessment, the pharmacist has more information with which to develop a rational care plan, including referral to a physician when necessary.¹
- 3) Pharmacists in rural areas could provide physical assessment as part of an expanded triage function.⁶
- 4) In institutional settings, pharmacists could perform additional examinations when deemed necessary for

Table VII. Sources of Physical Assessment (PA) Training, Self-rating of Skills and Use of Physical Assessment
Note: percentages have been rounded and may not add to 100%.
Note: Some figures reported as number of respondents, n = 101

		% OR #
% with PA training		23 %
*Source of training	School	29
	Residency	14
	CE	5
	On-the-job	34
	Other	4
	No response	55
	Mean number of training sources/respondent	0.9 ± 1.1
	Self-rating of skills	Excellent
Good		7 %
Adequate		13 %
Poor		26 %
None		26 %
No response		27 %
% Desire more training	53 %	
	No response	12%
% Using PA regularly	9 %	
	No response	1 %
If using PA, MD response	supportive	8 %
	neutral	6 %
	negative	7 %
	don't know	17 %
	No response	62 %
*If using PA, tools used	Sphygmomanometer	10
	Stethoscope	25
	Ophthalmoscope	3
	Otoscope	4
	Percussion Hammer	8
	Hands	1
	Mandate	1
	Scale	1
	Tape measure	1
	Don't know	2
	No response	72

* = more than one may be circled

monitoring patients. All the assessment data required by the pharmacist to adequately monitor specific therapies for efficacy and/or toxicity may not be currently collected by the nurse or physician.⁶

- 5) A more recent role being assumed by the pharmacist is that of primary care provider in the ambulatory setting. Physical findings are essential for detecting new pathology and monitoring existing pathology, patient progress, drug efficacy, and ad-

Table VIII. Perceived Barriers for use of Physical Assessment in their Practice

		% OR #
% Who don't use PA regularly		90 % **
Reasons*	Inappropriate role	32
	Lack training	80 (79% **)
	No physical support	19
	No examination area	11
	Patient would object	13
	Increased liability	14
	Other: Duplication	16
	No added value	2
	Untraditional role	1
	No equipment	1
	Lack opportunity	1
	Lack knowledge	1
	Lack time	1
	Lack practice	1
	No response	9
	Mean number of reasons cited/respondent	1.9 ± 1.4

** = numbers have been rounded

verse drug reactions.⁷

- 6) Physical assessment skills may also be of benefit if the pharmacist is to adopt the role of prescriber. It has been suggested that in order to prescribe, one must know how to diagnose. Others, however, do not believe a lack of formal training in physical assessment to be a barrier to prescribing.⁸

While this survey provides some useful preliminary information, more conclusive and detailed data are needed to assess attitudes toward and the frequency of use of physical assessment. The data presented may not be applicable to other practice settings (community sites) or other geographical locations.

A number of observations were made in the course of this survey that should be considered when developing future surveys of this kind. Terms such as staff pharmacist and clinical pharmacist were not sufficiently defined in this survey. Information should have been collected without categorizing it ahead of time since this would provide greater power in the analysis.⁹

Some respondents answered questions when it was inappropriate to do so. For example, although some respondents stated that they had no training in physical assessment, they provided the location of their training. To clear up the confusion it would have been advantageous to regroup questions and place skip patterns immediately after the answer to reduce the chance of missing or forgetting the instruction.⁹

Although unavoidable, deficiencies inherent to mailed questionnaires can affect the results. It is impossible to

Table IX. Frequency of Performance of Physical Assessment Activities, Perceived Competence and Desire for more Training. Data are presented as percentages of total number of survey respondents (101). Note: Regularly = once/hr, once/day, once/week, Rarely = once/month All numbers are percentages and have been rounded, n=101

Exam of	Regularly	Rarely	Never	No Response	Feel Competent		No Response	Desire more training		No Response
					Y	N		Y	N	
skin/hair/nails	10	38	30	23	12	48	41	41	23	37
eyes	5	25	48	23	4	56	40	46	18	37
ears	4	9	64	23	2	56	42	45	20	36
nose, sinus	2	10	65	23	1	57	42	42	23	36
mouth, pharynx	4	26	48	23	8	52	40	46	19	36
neck	6	10	60	24	2	58	40	43	22	36
thorax/lungs	4	10	63	23	2	57	41	45	20	36
heart	4	11	62	23	3	56	41	45	20	36
breast	0	5	72	23	1	59	40	34	31	36
abdomen	3	11	63	23	4	56	40	40	25	36
genitalia	0	5	72	23	1	59	40	31	34	36
anus/rectum	0	4	73	23	0	60	40	31	34	36
arteries	2	12	61	25	1	59	40	39	25	37
veins	3	14	59	23	1	59	40	39	25	37
lymph system	2	9	66	23	2	58	40	39	25	37
Musculo skeletal system	6	15	56	23	4	56	40	41	24	36
reflexes	1	10	66	23	4	56	40	41	24	36
sensory system	4	11	62	23	1	59	31	42	23	36
cranial system	2	7	68	23	0	60	40	43	22	36
motor system	3	11	63	23	2	58	40	44	21	36
mental status	14	23	41	23	6	54	40	45	19	37

determine the characteristics of nonresponders and reasons for refusal to answer all or part of the questionnaire. One also is not able to control the order in which the questions are answered. Respondents may also fail to read or miss questions.

In conclusion, few of the hospital pharmacists who responded to our survey used physical assessment routinely. Half of the respondents would like specific training in physical assessment so that they could incorporate it into their practice. A larger study involving both community and hospital pharmacists was beyond the scope of this investigation but would be useful from both a professional and educational perspective. ☒

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