

# Relationship between hospital pharmacists' job satisfaction and involvement in clinical activities

DAVID S. OLSON AND KENNETH A. LAWSON

**Abstract:** Job satisfaction among hospital pharmacists employed by a national hospital pharmacy management company was measured by using a mail questionnaire.

A previously validated survey that measured pharmacists' job satisfaction was adapted for use in this study. Additional questions determined the pharmacist's clinical pharmacy training and participation in clinical pharmacy services. Questionnaires

were mailed to all full-time hospital pharmacists employed by the pharmacy management company.

Of the 606 mailed, deliverable questionnaires, 354 usable responses were returned, for a response rate of 58.4%. The respondent hospital pharmacists' level of job satisfaction showed a positive association with clinical pharmacy involvement. Of the nine items in the questionnaire that measured the

pharmacists' involvement in clinical pharmacy services, seven items showed a positive relationship between involvement in that clinical activity and job satisfaction. Mean job satisfaction increased as the percentage of time spent performing clinical pharmacy activities increased. Job satisfaction decreased as time spent performing distributive functions increased.

The percentage of time hospital pharmacists were en-

gaged in clinical activities was significantly associated with job satisfaction.

**Index terms:** Clinical pharmacy; Data collection; Dispensing; Job description; Job satisfaction; Pharmacists, hospital; Pharmacy, institutional, hospital  
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Most of the studies on job satisfaction among hospital pharmacists were completed more than 10 years ago. At that time, hospital pharmacists generally were not satisfied with the work they performed. They felt unchallenged by their daily tasks unless they were involved in administrative or clinical activities.<sup>1-10</sup> Much has changed since then. The role of the pharmacist is being transformed from dispensing products to providing information. This increased emphasis on clinical practice could lead to greater job satisfaction for some pharmacists. Others may fear this transformation because they feel inadequately trained in clinical activities.

Given the changes brought by the movement toward pharmaceutical care, further study into the relationship between job satisfaction and work-related activities seemed warranted. The objectives of this study were to measure job satisfaction among full-time hospital pharmacists employed by a national hospital pharmacy management company and to determine the relationship between job satisfaction and the hospital pharmacist's involvement in clinical pharmacy activities.

## Methods

A mail questionnaire was chosen as the method for

measuring job satisfaction. The instrument that Barnett and Kimberlin<sup>11</sup> developed and validated in 1983 to measure job satisfaction among Florida pharmacists was adapted for use in this study. In developing their instrument, Barnett and Kimberlin examined many standardized measures of job satisfaction, including the Job Descriptive Index, Job Characteristic Inventory, and revised forms used by other researchers within the field of pharmacy and other disciplines.<sup>12</sup>

The four-item, facet-free, general job satisfaction subscale that Barnett and Kimberlin used as their dependent measure of job satisfaction was also used as the dependent measure in this study. Facet-free items measure an individual's global satisfaction with his or her job without referring to any particular aspect of the work. Responses to items on this subscale were made by using a five-point Likert-type scale, where 1 meant "strongly agree," 2 meant "tend to agree," 3 meant "neither agree nor disagree," 4 meant "tend to disagree," and 5 meant "strongly disagree." Both positive and negative statements were used in measuring the independent and dependent variables. Scoring was reversed for positively worded items so that a higher score indicated greater job satisfaction. The mean value for job satisfaction was computed by adding together the

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respondent's scores for the four questions dealing with job satisfaction, then dividing the sum by four.

Nine yes-or-no questions were included to determine whether the pharmacists were involved in the following clinical activities: drug-use evaluation, pharmacokinetic consultations, drug therapy monitoring, consulting with prescribers on antibiotic therapy, adverse drug reaction monitoring, provision of drug information, participation in medical team rounds, patient education, and inservice programs for other health care professionals.<sup>13</sup> Respondents were asked to estimate the percentage of their typical work day spent in distributive, clinical, or management activities. This estimate, along with the questions concerning involvement in clinical activities, was used to determine each pharmacist's level of participation in clinical pharmacy services.

The study population consisted of all full-time hospital pharmacists employed by Owen Healthcare. This did not include pharmacists working in outpatient pharmacies based in the hospital. Directors of pharmacy, associate directors of pharmacy, assistant directors of pharmacy, directors in training, clinical pharmacists, pharmacy supervisors, and staff pharmacists were included in the study. At the time of the study, the company provided pharmacy services to 238 hospitals in 40 states. A total of 612 hospital pharmacists met the above criteria, and questionnaires were mailed to all of them.

The questionnaire, cover letter, and postage-paid return envelope were mailed October 19, 1993, via first-class mail to the home address of each pharmacist. A postcard to thank the respondents or remind them to complete the questionnaire was mailed to all pharmacists seven days after the questionnaire mailing date. Three weeks after the questionnaire mailing date, another reminder postcard was mailed to all pharmacists. The final collection date for the survey was December 9, 1993.

Data from the returned questionnaires were coded and entered into MS-DOS Editor by using an IBM-compatible personal computer. The data were analyzed with the SPSS/PC+ (SPSS, Chicago, IL) and SAS (SAS Institute, Cary, NC) computer programs. The data analysis consisted of descriptive statistics, Kendall's tau-b, Mann-Whitney *U* tests, and Kruskal-Wallis one-way analysis of variance (ANOVA). Nonparametric tests were used to avoid making assumptions about the distributions of the variables and to be consistent with the analytical approach used by Barnett and Kimberlin.<sup>12</sup> The  $\alpha$  probability level was set at 0.05 for all inferential statistical analyses.

**Results**

Of the 612 mailed questionnaires, 6 were returned as undeliverable; these were not included in response-rate calculations. Of the 606 mailed, deliverable questionnaires,

354 usable responses were received, yielding a response rate of 58.4%. Table 1 shows the demographic characteristics of the responding pharmacists.

Table 2 lists the mean  $\pm$  S.D. score for each of the items in the job satisfaction subscale. The mean  $\pm$  S.D. job satisfaction score for the 354 respondents was 3.43  $\pm$  0.90.

**Table 1.**  
**Respondents' Demographic Characteristics**

Characteristic	No. (%)
Age <sup>a</sup>	
≤24	10 (2.8)
25-29	56 (15.8)
30-34	72 (20.3)
35-39	80 (22.6)
40-44	63 (17.8)
45-49	27 (7.6)
50-54	25 (7.1)
55-59	11 (3.1)
≥60	6 (1.7)
No response	4 (1.1)
Sex	
Male	210 (59.3)
Female	143 (40.4)
No response	1 (0.3)
Highest academic degree	
B.S. pharmacy	282 (79.7)
Doctor of pharmacy	39 (11.0)
Master of science	20 (5.6)
M.B.A.	9 (2.5)
B.S. with residency	2 (0.6)
D.D.S.	1 (0.3)
No response	1 (0.3)
Job title	
Staff pharmacist	167 (47.2)
Director of pharmacy	142 (40.1)
Clinical pharmacist	24 (6.8)
Assistant director	12 (3.4)
Supervisor	6 (1.7)
Director in training	3 (0.8)

<sup>a</sup>Mean  $\pm$  S.D. age. 37.8  $\pm$  8.8 years (range. 23-65 years).

**Table 2.**  
**Facet-Free Items Used To Determine Job Satisfaction**

Item	Mean $\pm$ S.D. Score <sup>a</sup> (n = 354)
All things considered, I am satisfied with my current job.	3.69 $\pm$ 0.99 <sup>b</sup>
The idea of spending the remainder of my working life in a job like my current one is depressing.	3.22 $\pm$ 1.26
I often leave work with a "bad" feeling, a feeling that I am doing something which I do not enjoy.	3.57 $\pm$ 1.14
I often get so wrapped up (interested) in my work that I lose track of time.	3.25 $\pm$ 1.02 <sup>b</sup>

<sup>a</sup>For each item, the response choices (and their respective values) were strongly agree (1), tend to agree (2), neither agree nor disagree (3), tend to disagree (4), and strongly disagree (5).

<sup>b</sup>Positively worded items (items 1 and 4) were reverse coded as follows, so that a higher value consistently reflected a more positive attitude: strongly agree (5), tend to agree (4), neither agree nor disagree (3), tend to disagree (2), and strongly disagree (1).

**Table 3.**  
**Job Satisfaction Scores for Pharmacists Who Did or Did Not Participate in Clinical Pharmacy Activities**

Item	Response	n	Mean <sup>a</sup> ± S.D.	Mean Rank <sup>c</sup>	U <sup>b</sup>	Z <sup>b</sup>	p <sup>b</sup>
Participate in drug-use evaluation	Yes	286	3.51 ± 0.89	186.6	7,110	-3.46	<0.001
	No	68	3.10 ± 0.90	139.1			
Monitor patients' drug therapy to evaluate appropriateness of use, dose, dosage regimen, route of administration, therapeutic duplication, and drug interactions	Yes	326	3.49 ± 0.88	182.6	2,573	-3.60	<0.001
	No	27	2.82 ± 0.92	109.3			
Consult with prescriber on antibiotic therapy	Yes	283	3.49 ± 0.89	183.5	8,078	-2.40	0.016
	No	70	3.21 ± 0.94	150.9			
Provide patient education regarding drug therapy	Yes	179	3.48 ± 0.92	182.9	14,514	-1.11	0.267
	No	174	3.40 ± 0.87	170.9			
Participate in the detection, monitoring, documentation, management, and reporting of adverse drug reactions	Yes	323	3.45 ± 0.91	180.0	4,195	-1.50	0.134
	No	31	3.25 ± 0.78	151.3			
Participate in medical or health care team rounds	Yes	35	3.71 ± 0.78	210.9	4,415	-2.04	0.041
	No	319	3.40 ± 0.91	173.8			
Provide educational sessions or materials for other health care professionals	Yes	254	3.55 ± 0.90	191.7	9,088	-4.19	<0.001
	No	100	3.15 ± 0.85	141.4			
Obtain clinical laboratory data to monitor drug regimen efficacy and/or toxicity via a pharmacokinetic monitoring system	Yes	229	3.58 ± 0.82	192.8	10,806	-3.83	<0.001
	No	125	3.16 ± 0.98	149.5			
Provide written drug information to other health care professionals	Yes	269	3.50 ± 0.89	186.5	9,000	-2.97	0.003
	No	85	3.21 ± 0.93	148.9			

<sup>a</sup>Mean job satisfaction scores with possible values ranging from 1.0 to 5.0. A higher value corresponds to greater job satisfaction.

<sup>b</sup>Mann-Whitney U test results.

Table 3 depicts the difference in job satisfaction scores of the pharmacists who indicated that they did or did not participate in the nine clinical pharmacy activities. For seven of the nine items, differences existed in the distribution of job satisfaction scores between the pharmacists who participated in these activities and those who did not. The two clinical activities that did not show a positive relationship with job satisfaction were patient education and participation in adverse drug reaction reporting.

Kendall's tau-b was used to test the strength of the association between job satisfaction and involvement in clinical pharmacy activities as represented by the number of clinical activities each respondent reported (mean ± S.D., 6.18 ± 1.96). Kendall's tau-b was 0.190, which indicates a significant ( $p < 0.001$ ) but weak association.

Mean job satisfaction increased as the percentage of time spent performing clinical pharmacy activities increased (Table 4). Kendall's tau-b was used to test the strength of the association between job satisfaction and the percentage of time pharmacists reported spending performing clinical activities. Kendall's tau-b was 0.199, which indicates a significant ( $p < 0.001$ ) association.

To determine the association between job satisfaction and the respondent's highest academic degree, the responses were recoded into three categories: B.S., Pharm.D., and other. There were no significant differences in the distributions of job satisfaction scores among the responding pharmacists based on the highest academic degree they held (Table 5).

To determine the association between job satisfac-

**Table 4.**  
**Job Satisfaction Scores for Pharmacists by Percentage of Time Spent Performing Clinical Activities**

Percentage of Time Performing Clinical Activities <sup>a</sup>	n	Mean ± S.D. Job Satisfaction Score <sup>b</sup>
0-9	77	3.00 ± 0.99
10-19	84	3.40 ± 0.87
20-29	98	3.49 ± 0.84
30-39	43	3.64 ± 0.80
40-49	17	3.78 ± 0.74
50-100	32	3.84 ± 0.78

<sup>a</sup>Respondents reported exact percentages; their responses were grouped into categories.

<sup>b</sup>Mean job satisfaction scores with possible values ranging from 1.0 to 5.0. A higher value corresponds to greater job satisfaction.

tion and the respondent's current job title, the responses were recoded into three categories: managerial, clinical, and staff pharmacist. Staff pharmacists had a significantly lower mean job satisfaction score than managerial or clinical pharmacists (Table 5). Mean job satisfaction scores for pharmacists who spent 50% or more of their time in distributive ( $n = 204$ ), managerial ( $n = 86$ ), or clinical ( $n = 32$ ) activities were 3.26 ± 0.88, 3.61 ± 0.94, and 3.84 ± 0.78, respectively.

## Discussion

Our results support the overriding theme from earlier studies that job satisfaction decreases as more time is spent performing distributive functions. This relation-

Table 5.  
Job Satisfaction Scores by Highest Academic Degree and Current Job Title

Degree or Job Title	n	Mean ± S.D. Job Satisfaction Score <sup>a</sup>	Mean Rank	Chi-Square <sup>b</sup>	p <sup>b</sup>
Degree					
B.S.	282	3.44 ± 0.89	176.7	0.04	0.980
Pharm.D.	39	3.42 ± 0.99	180.0		
Other <sup>c</sup>	32	3.45 ± 0.92	175.7		
Job Title					
Manager <sup>d</sup>	163	3.58 ± 0.86	194.6	18.82	0.001
Clinical pharmacist	24	3.82 ± 0.86	225.2		
Staff pharmacist	167	3.23 ± 0.91	153.9		

<sup>a</sup>Mean job satisfaction scores with possible values ranging from 1.0 to 5.0. A higher value corresponds to greater job satisfaction.

<sup>b</sup>Kruskal-Wallis test.

<sup>c</sup>Includes M.S., M.B.A., D.D.S., and B.S. with residency.

<sup>d</sup>Managerial positions include director, assistant director, director in training, and supervisor.

ship may result because pharmacists feel unchallenged by their daily tasks unless they are involved in administrative or clinical activities. As pharmacists' roles evolve so they spend more time in clinical activities and less time performing distributive services, their job satisfaction should increase.

As a group, the pharmacists we surveyed appeared to be satisfied with their jobs. The differences in job satisfaction scores of pharmacists who did or did not participate in clinical pharmacy activities were small but significant. The effect size for the seven activities that showed significant differences ranged from 0.31 to 0.74, supporting a relationship between the variables tested.

The four clinical activities that showed the strongest relationship with job satisfaction were monitoring patients' drug therapy, participating in pharmacokinetic monitoring, participating in drug-use evaluation, and providing educational sessions or materials for other health care professionals. We believe these activities can and should be performed by any hospital pharmacist. It is not enough for pharmacy managers just to provide educational programs that develop their pharmacists' clinical skills. They must provide the opportunities for pharmacists to participate in clinical pharmacy practices.

The results of this study may not be generalized to pharmacists whose work environment is not similar to those of Owen Healthcare pharmacists. The pharmacies managed by Owen Healthcare are predominantly in smaller hospitals, where the directors typically have managerial, clinical, and distributive responsibilities. Some 70% of the respondents of this survey were from hospitals with ≤200 licensed beds.

## Conclusion

The percentage of time hospital pharmacists were engaged in clinical activities was significantly associated with job satisfaction.

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