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The Association of Subjective Workload Dimensions on Quality of Care and Pharmacist Quality of Work Life

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Abstract

Background—Workload has been described both objectively (e.g., number of prescriptions dispensed per pharmacist) as well as subjectively (e.g., pharmacist's perception of busyness). These approaches might be missing important characteristics of pharmacist workload that have not been previously identified and measured.

Objectives—To measure the association of community pharmacists' workload perceptions at three levels (organization, job, and task) with job satisfaction, burnout, and perceived performance of two tasks in the medication dispensing process.

Methods—A secondary data analysis was performed using cross-sectional survey data collected from Wisconsin (US) community pharmacists. Organization-related workload was measured as staffing adequacy; job-related workload was measured as general and specific job demands; task-related workload was measured as internal and external mental demands. Pharmacists' perceived task performance was assessed for patient profile review and patient consultation. The survey was administered to a random sample of 500 pharmacists who were asked to opt in if they were a community pharmacist. Descriptive statistics and correlations of study variables were determined. Two structural equation models were estimated to examine relationships between the study variables and perceived task performance.

Results—From the 224 eligible community pharmacists that agreed to participate, 165 (73.7%) usable surveys were completed and returned. Job satisfaction and job-related monitoring demands had direct positive associations with both dispensing tasks. External task demands were negatively related to perceived patient consultation performance. Indirect effects on both tasks were primarily mediated through job satisfaction, which was positively related to staffing adequacy and cognitive job demands and negatively related to volume job demands. External task demands had an

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additional indirect effect on perceived patient consultation performance, as it was associated with lower levels of job satisfaction and higher levels of burnout.

Implications/Conclusions—Allowing community pharmacists to concentrate on tasks and limiting interruptions while performing these tasks are important factors in improving quality of patient care and pharmacist work life. The results have implications for strategies to improve patient safety and pharmacist performance.

Keywords

Community Pharmacy; Workload; Medication Safety; Structural Equation Modeling

Background

High quality, safe patient care and quality of working life in community pharmacies have been identified in the literature as targets for improvement.^{1–3} Several studies have shown an equivocal relationship between workload and both the quality of care provided to patients^{4–6} and pharmacist quality of work life.^{7,8} In the community pharmacy literature, workload has been described as a ratio of prescriptions dispensed per level of staffing both objectively (e.g., number of prescriptions dispensed per pharmacist) as well as subjectively (e.g., pharmacist's perception of busyness). These approaches might be missing other important characteristics of pharmacist workload that have not been previously identified and measured.

In medical and nursing disciplines, workload has been conceptualized to have multiple levels.^{9–11} In addition to objective measures such as number of patient office visits and occupied beds in a hospital unit, studies in these disciplines have been conducted that described subjective dimensions of workload including physical, cognitive, and emotional workload of health care staff.^{10,12} A similar approach to pharmacist workload would suggest that instead of only quantifying the number of prescriptions dispensed, the focus should be on understanding the characteristics that affect the pharmacists' perception of workload on multiple, different dimensions.

To better understand the characteristics and effects of workload in community pharmacies, a human factors approach was used for this study.¹⁰ Human factors is a field of study focused on designing a system that fits the needs, abilities, and limitations of those working in the system and reducing hazards in order to improve quality and safety.^{13,14} A human factors perspective brings together two main themes of workload in healthcare; that workload is caused by system factors and that workload affects outcomes related to care that is provided (i.e., quality of care), specifically those outcomes related to patients (i.e., patient safety) and outcomes related to healthcare workers (i.e., quality of working life). Workload is the ratio of demands (task load) to available resources. Human factors also incorporates the concept that actual and perceived workload occurs at multiple levels within a work system: the organization level (staff adequacy and training), job level (general work expectations), and task level (mental demands associated with specific tasks). The levels or types of workload are hypothesized to influence outcomes. With the exception of one recent study conducted in the institutional setting,¹⁵ pharmacist workload has not been explored subjectively (i.e., perceived workload) on multiple levels.

Given evidence of increased workload for community pharmacists and very little research focused on the conceptualization, measurement, and effects of community pharmacist workload, a multi-level model that measured nursing workload was adapted (Figure 1).¹⁶ The model shows subjective workload demands occurring at three levels (organization-, job-, and task-level) being influenced by demands and resources at each level. Pharmacist

workload stems from an imbalance in demands and resources which then results in the subjective reactions to the workload. In other words, if a pharmacist has too many demands for the available resources, then their subjective workload will be high. If they have more resources than demands, then subjective workload will be low. The outcomes impacted by pharmacist workload include both pharmacist-related and quality of care-related outcomes.

Conducting a thorough patient drug profile review and providing a patient drug consultation upon dispensing are important tasks in the dispensing process that can help ensure that a drug dispensed to a patient is appropriate (i.e., correct drug, correct dose, no interactions), will be used correctly, and will maximize patient outcomes. These tasks were chosen because they are tasks that if performed poorly could lead to errors, and it was hypothesized that performance of these tasks required different cognitive and temporal demands on pharmacists. Research shows that pharmacist workload is associated with pharmacists performing these tasks.^{17–23}

Pharmacist job satisfaction and burnout are quality of working life outcomes hypothesized to be associated with workload. Both job satisfaction and burnout could be associated with work demands occurring at each level in the model. Past research of pharmacists shows some association between pharmacist workload and pharmacist job satisfaction and burnout.^{7,24–27}

The objective of this study was to assess whether and which multi-dimensional measures of workload were related to perceived performance of two common tasks in the medication dispensing process: patient drug profile review and patient consultation, and two pharmacist outcomes: job satisfaction and burnout.

Methods

Design and Sampling

This study is a secondary analysis using cross-sectional survey data collected from pharmacists practicing in Wisconsin (US) community pharmacies in 2009.²⁸ For the survey, a sample of 500 pharmacists licensed and having addresses in Wisconsin was randomly selected from a list of all pharmacists licensed in Wisconsin obtained from the Wisconsin Department of Regulation and Licensing. Subjects were mailed a letter describing the study and an opt-in form with three choices: 1) the respondent is a community pharmacist and would like to participate, 2) the respondent is a community pharmacist but does not want to participate, or 3) the respondent is not a community pharmacist. Respondents were asked to report their practice setting since the sampling frame did not contain practice setting information for each licensed pharmacist. If respondents reported they would like to participate, they reported their preferred survey format (paper via postal mail or electronically via an online link contained in an email). Respondents returned the opt-in form either via fax or postage paid return envelope.

The survey instrument contained 63 items, including the study measures and pharmacist and pharmacy characteristics. Surveys were either mailed to subjects or a link to the web-based survey was sent via e-mail. Subjects receiving mailed surveys were asked to either fax or mail back the survey using an included postage paid return envelope. One electronic or mailed reminder was sent to non-respondents two weeks after the initial mailing.

Measures

Endogenous Variables—The dependent variables of interest were pharmacists' self-reported perceived performance of 2 different tasks in the medication dispensing process: conducting a patient profile review and counseling a patient on a new medication. Perceived

performance was assessed using a single item for each task (e.g., “To what extent are you confident that the patient profiles you conduct are complete?” and “To what extent are you confident that patients understand how to correctly take their new medication(s) after your consultation?”). Job satisfaction was measured using a 3-item scale.²⁹ Burnout was measured using the emotional exhaustion subscale of Maslach and Jackson’s (1981) burnout inventory.³⁰

Exogenous Variables—The exogenous variables in the model were divided into three different levels within the work system: organization-related, job-related, and task-related workload. Organization-related workload, categorized in the model as staffing composition and adequacy in the dispensing department of the pharmacy, was measured with questions asking about quantity and quality of pharmacist and technician staffing available in the pharmacy.³¹

Job-related workload was conceptualized as the demands associated with simultaneously managing all of the tasks and responsibilities of pharmacists, such as dispensing prescriptions efficiently, managing pharmacy personnel, and addressing inventory concerns. Job-related workload demands were divided into 2 primary dimensions: general and specific job demands. General job demands were conceptualized to have two dimensions: cognitive demands, which are related to the use of knowledge and skills learned in pharmacy school, and volume demands, which are related to the pressure of work output. Cognitive demands and volume demands were measured with 3 items and 4 items, respectively, from Karasek (1979).³² Specific job demand items focused on attention demands of the job, and were conceptualized to have two dimensions: monitoring demands, which are passive monitoring activities required to prevent problems, and production responsibility demands, which are related to the problems or negative patient outcomes that could occur. Monitoring demands and production responsibility demands were each measured with 4 separate items from Jackson et al. (1993).³³

Task-related workload was defined as task-specific mental demands and was conceptualized to have 2 dimensions: internal task demands, which focus on the degree of concentration and mental effort required to complete a task, and external task demands, which focus on the effect of interruptions, being rushed, and having attention divided. Internal task demands and external task demands were measured with 2 items and 4 items, respectively, from Hart and Staveland (1988) and Reid and Nygren (1988).^{34,35} Since task-related workload was associated conceptually with each task, internal and external task demands were measured separately for each dispensing task.

All measures were self-reported and asked respondents to answer each question by thinking about the last 30 days. Responses to all study measures were on a numbered 7-point scale ranging from 0 to 6 with the response category labels “not at all”(=0), “just a little”(=1), “a moderate amount”(=2), “pretty much”(=3), “quite a lot”(=4), and “a great deal”(=5), as well as a “don’t know” option.

Analysis Plan

The multi-dimensional workload measures, job satisfaction, burnout, and the two perceived task performance measures were subjected to exploratory factor analysis and purified using principal components analysis (PCA) as described in a previous study.²⁸ Based on the PCA, 33 of the original 38 study items were retained. A summary of the final measures identified for inclusion in this study, including reliability statistics and the questionnaire items for each dependent and independent variable, is presented in Table 1. Descriptive statistics were calculated for included characteristics of pharmacists and pharmacies, and bivariate

correlations were calculated for the workload measures, job satisfaction, burnout, and the two perceived performance variables.

For data analysis, a multi-level structural equation modeling (SEM) estimation model was constructed based upon a model developed to study the effect of nursing workload on job satisfaction, burnout, and medication error likelihood (Figure 2).¹⁶ SEM is a statistical technique useful for determining if a theoretical model is supported by the data collected, and can be used to analyze a wide variety of complex data, research designs, and theoretical models.³⁶ Although this method is most commonly used to measure and understand the relationships among latent, unobserved variables, it can also be used to explore the direct and indirect effects of observable variables in the proposed model as a succession of structural equations akin to running several multiple regression equations.³⁶

Separate models were estimated for the 2 dispensing tasks: confidence that patient profile reviews are complete and confidence that patients understand how to correctly take their new medication(s) after consultation. Endogenous variables were job satisfaction, burnout, and the 2 dispensing tasks. Exogenous variables were measures of organization-related, general job-related, specific job-related, internal task-related and external task-related workload. Statistical adjustment was made for gender, years of experience, and pharmacy setting (large chain, independent, supermarket, mass merchandiser, or other) for each relationship estimated in the model. Adding covariates did not change the pattern of results or any outcomes of significance tests; therefore, only statistical values adjusted for covariates are reported. An a priori alpha criterion of 0.05 was used. All analyses were conducted using Stata version 12.1 (STATA Corp, College Station, TX).

Results

Of the 500 mailed opt-in invitations to complete the survey, 443 were returned. A total of 266 respondents reported that they were community pharmacists, and 224 of these community pharmacists agreed to participate. A total of 169 surveys were completed and returned by the 224 study subjects. Four surveys were missing more than 80% of the requested data and were removed from the analysis. This yielded a usable sample size of 165 (73.7%) community pharmacists of the 224 that agreed to participate. Table 2 contains a summary of the characteristics of the respondents. Mean respondent age was 49 years, and respondents had a mean of 24 years of experience. There was a nearly identical distribution between male and female gender. A little more than one-half (52%) of respondents worked in a community chain pharmacy, with smaller numbers working in independent (22%) or mass merchandiser (12%) pharmacy settings. The characteristics of the respondents were similar to the characteristics of community pharmacists in Wisconsin in 2009.³⁷

Tables 3 and 4 show that the workload measures were correlated within and across levels of workload. Job satisfaction and burnout were significantly negatively correlated. Comparing the bivariate correlations of the workload measures between the two outcome measures showed some different workload measures were correlated with each outcome measure.

Figure 3 shows the adjusted results of the SEM model for the outcome of pharmacist perceived performance on patient profile reviews. (Only the statistically significant pathways are shown for clarity.) The observed data appear to fit the hypothesized model based on the fit indices. Direct effects were such that job satisfaction and monitoring demands were positively related to pharmacist perceived performance on patient profile reviews. That is, higher levels of job satisfaction and increased awareness of what's going on around you in the pharmacy were associated with a higher perceived completeness of patient profile reviews. Indirect effects on patient profile review were mediated through both

job satisfaction and burnout. Staffing adequacy was positively related to job satisfaction and negatively related to burnout. Job satisfaction was also positively related to cognitive job demands, which are related to the use of knowledge and skills learned in pharmacy school. High volume demands, such as having to work very fast, having a lot of work to be done, and not having enough time to finish work, were associated with lower levels of job satisfaction and higher levels of burnout. Internal task demands, such as concentration and mental effort required to complete a task, were positively related to burnout. As expected, job satisfaction and burnout had a strong negative correlation.

Figure 4 shows the adjusted results of the SEM model for the outcome of perceived performance of a patient consultation. This model also showed good fit to the hypothesized model based on the fit indices. Similar to the previous model, direct effects were such that higher levels of job satisfaction and monitoring demands were associated with more confidence that patients understood how to use their new medication(s) after pharmacist consultation. Additionally, external demands had a negative direct effect, such that frequent interruptions or having attention divided between multiple tasks while counseling was associated with poorer perceived consultation performance. Indirect effects on patient consultation were primarily mediated through job satisfaction, which was positively related to staffing adequacy and cognitive job demands. In contrast, high volume demands and external demands were associated with lower levels of job satisfaction and higher levels of burnout.

Discussion

The goal of this study was to test the workload-outcome relationships proposed by the multi-level model in Figure 1. The results show the value and importance of studying multiple levels of subjective workload demands experienced by community pharmacists. Similar to studies in nursing and medicine, the results suggest that task performance is influenced by workload perceptions at various levels, corresponding to a conceptual model derived from a human factors approach to workload. Also, the results suggest that workload-outcome relationships are different depending on the task studied. This is consistent with Grasha et al.^{38,39} whose research found weak associations between workload and medication errors, which was inconsistent with previous research.^{5-7,40,41} Grasha posited that his findings may be because the dispensing process is multifaceted and diverse, as is the time and attention involved in each part of the process. This is an important finding, as it provides an idea of strategies that can be used in pharmacies to redesign work to improve performance of activities. Examining different outcomes is also important, as it provides clearer information and allows researchers to develop strategies that facilitate the likelihood that pharmacists will perform the tasks that they wish to perform.

The results for both tasks highlight the importance of job-related monitoring demands, which measure such things as concentrating, watching for things to go wrong, and reacting to prevent problems. It appears that community pharmacists who are able to focus on their job as a whole and that are aware of the entire work process in a community pharmacy have more confidence in their performance on patient profile reviews and patient consultation. This is consistent with published evidence that “having the big picture”, also called “situation awareness” in the human factors literature,⁴² is required for the safe operation of complex dynamic systems like community pharmacies. Situation awareness is the ability to quickly and effectively integrate relevant information from multiple sources in order to develop an accurate understanding of the environment, even under high uncertainty or rapid change.⁴³ Research has shown that a lack of situation awareness in other health care disciplines can result in increased workload and errors.⁴⁴ Therefore, it makes sense that poor pharmacist performance is more likely to occur when pharmacists have their attention

diverted or divided, lose their concentration, or do not know the processes occurring in the pharmacy around them.

Efforts to improve task performance need to focus on improving situation awareness in the pharmacy. To facilitate situation awareness, pharmacists must work in an environment in which they can visualize or perceive what is going on in the pharmacy, understand and diagnose issues as they come up, and predict or anticipate future problems.⁴² As a result, studies suggest that complex systems should be designed to support the need for additional necessary information when unexpected things go wrong in an easy-to-interpret manner.⁴⁵ For instance, automation has been widely implemented in pharmacies to carry out much of the dispensing processing. However, research shows that automation can reduce situation awareness when it is not transparent what the automation is doing or when the automation does not perform as intended. Just as it is important for technologies to display relevant information to improve situation awareness, it is important to design the pharmacy so pharmacists and technicians visualize and interpret “the big picture” while they are performing other tasks.

The significance of external task-related demands such as interruptions on poor perceived consultation performance reinforces the cognitive nature of this task. This is consistent with the human factors literature suggesting that task disruptions can increase required cognitive workload⁴⁶ and can result in errors.⁴⁷ More specifically, in community pharmacies, Flynn et al. found that not only were pharmacists subjected to numerous interruptions and distractions, but that the number of interruptions were significantly associated with dispensing errors.⁴⁸ In contrast, external task-related demands were not significantly related to perceived patient profile review performance. This may be due to the ease with which a pharmacist can return to this task after being interrupted, whereas a patient consultation is a one-time event in which interruptions may have more of an impact upon the pharmacist’s perceived performance. In comparison to external task-related demands, the positive relationship between internal task-related demands and burnout suggests pharmacists may become frustrated if they are unable to focus or concentrate while performing drug profile reviews.

The effects of organization-related demands such as staffing adequacy and general job-related demands such as volume and cognitive job demands were mediated through burnout and job satisfaction, which in turn directly impacted task performance. These results are important, as they suggest that changes in work design that are organization-related, and/or related to the type of work and the volume of work a pharmacist performs will not directly impact performance of drug profile review and patient consultation, but affect pharmacist job satisfaction. Instead, redesign of work should focus on ways to improve re-allocation of work, communication, or teamwork in order to allow pharmacists to concentrate on the work they must perform. As may be expected, pharmacists reporting high levels of burnout also reported lower job satisfaction; this in turn led to decreased perceived performance on drug profile review and patient consultation.

Future research could explore additional performance outcomes and examine additional workload demands that pharmacists experience. Also, research could examine workload demands on pharmacists in other practice settings such as hospitals and clinics.

Limitations

The small sample of community pharmacists in Wisconsin limits generalizability, and renders the estimated coefficients less than efficient in an SEM framework. One way to potentially improve model fit would be the use of workload measures specific to community pharmacy practice.^{49,50} Many of the survey items were adapted from older studies in other

disciplines. Thus, the items may not have been applicable to or may have been confusing to pharmacists; as a result, some measures may not represent the underlying construct well (e.g., general job level cognitive demands). Additionally, task performance measures were single-item measures; thus they have limited construct validity. However, the single performance items did correlate highly with each other. The use of multiple task performance measures may lead to better measurement of pharmacist perceived task performance. Further, although task performance was subjectively measured, these perceptions were not validated by direct observation or other objective measures of task performance.

A number of pharmacists did not respond to the survey, which suggests some potential non-response bias. There were no statistically significant differences in pharmacist characteristics, job satisfaction, burnout, and perceived drug profile review performance between early and late respondents. However, late responders reported higher perceived patient consultation performance, which was statistically significant ($p < 0.05$).

Conclusion

This study showed the importance of measuring different levels of pharmacist perceived workload and how they are associated with task performance. A key result is that subjective measures of pharmacist workload are associated with performance of drug profile review and patient consultation performed by community pharmacists, and that different mental demands are associated with the performance of each task. This implies that no one solution will improve pharmacist performance on tasks, since solutions need to consider how pharmacists' specific work environments impact workload perceptions.

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Fig. 1.

Multi-level human factors framework of perceived pharmacist workload. Adapted from a framework of nursing workload.¹⁶

Fig. 2.
Multi-level structural equation modeling estimation model

Fig. 3.

Estimated SEM model depicting significant relationships with the outcome of perceived performance on a patient profile review.

Outcome: Confidence that patient profile reviews are complete

Chi-square = 10.58 (12 df), $p = 0.565$ CFI = 1.000 TLI = 1.024 RMSEA = 0.000

* = $p < 0.05$; ** = $p < 0.01$. Results are unstandardized parameter estimates (SD).

Fig. 4.

Estimated SEM model depicting significant relationships with the outcome of perceived performance of counseling a patient on a new medication.

Outcome: Confidence that patients understand how to correctly take their new medication(s) after consultation.

Chi-square = 14.94 (12 df), $p = 0.245$ CFI = 0.988 TLI = 0.957 RMSEA = 0.039

* = $p < 0.05$; ** = $p < 0.01$. Results are unstandardized parameter estimates (SD).

Table 1

Measures used and reliability statistics.

Construct	Reliability statistics
Unit Level	
Staffing Adequacy	$\alpha=.73$
1 To what extent are there enough pharmacists working with you to allow you to get your work done?	
2 To what extent are there enough technicians working with you to allow you to get your work done?	
3 To what extent are the technicians sufficiently skilled to allow you to get your work done?	
Job level	
General	
Cognitive	$\rho=.35$
1 To what extent does your job have a clear definition of what others expect of you?	
2 To what extent does your job allow you to use the skills and knowledge that you learned in school?	
Volume	$\alpha=.82$
1 To what extent does your job require you to work very fast?	
2 To what extent does your job require a great deal of work to be done?	
3 To what extent do you NOT have enough time to finish your work?	
Specific	
Production Responsibility	$\alpha=.90$
1 To what extent could a lapse of attention cause an adverse outcome to a patient?	
2 To what extent could an error on your part cause an adverse outcome to a patient?	
3 If you failed to notice a problem, to what extent could it result in an adverse outcome to a patient?	
Monitoring	$\alpha=.73$
1 To what extent does your work require your undivided attention?	
2 To what extent do you have to concentrate all the time to watch for things going wrong?	
3 To what extent do you have to react quickly to prevent problems from arising?	
Task Level	
Patient Profile Review	
External Demands	$\alpha=.87$
1 To what extent are you rushed while conducting a patient profile review?	
2 To what extent are you interrupted by insurance related issues while conducting a patient profile review?	
3 To what extent you interrupted by non-insurance related issues while conducting a patient profile review?	
4 To what extent is your attention divided between multiple tasks while conducting a patient profile review?	
Internal Demands	$\rho=.81$
1 To what extent does the process of conducting a patient profile review require your concentration?	
2 To what extent is mental effort required of you while conducting a patient profile review?	
Counseling on a New Medication	
External Demands	$\alpha=.90$

Construct		Reliability statistics
1	To what extent are you rushed while counseling a patient on a new medication?	
2	To what extent are you interrupted by insurance related issues while counseling a patient on a new medication?	
3	To what extent are you interrupted by non-insurance related issues while counseling a patient on a new medication?	
4	To what extent is your attention divided between multiple tasks while counseling a patient on a new medication?	
Internal Demands		$\rho=.88$
1	To what extent does the process of counseling a patient on a new medication require your concentration?	
2	To what extent is mental effort required of you while counseling a patient on a new medication?	
Job Satisfaction		$\alpha=.91$
1	All in all, to what extent are you satisfied with your job?	
2	In general, to what extent do you NOT like your job?	
3	In general, to what extent do you like working here?	
Burnout		$\alpha=.93$
1	To what extent do you feel emotionally drained from your work?	
2	To what extent do you feel used up at the end of the workday?	
3	To what extent do you feel fatigued when you get up in the morning and have to face another day on the job?	
4	To what extent do you feel burned out from your work?	
Task Performance		
Patient Profile Review		-
1	To what extent are you confident that the patient profiles you conduct are complete?	
Counseling on a New Medication		-
1	To what extent are you confident that patients understand how to correctly take their new medication(s) after your consultation?	

Note: Items assessed using a numbered 7-point scale ranging from 0 to 6 with the response category labels “not at all”(=1), “just a little”(=2), “a moderate amount”(=3), “pretty much”(=4), “quite a lot”(=5), and “a great deal”(=6), as well as a “don’t know”(=0) option. Revised items represent those measures remaining after purification using exploratory factor analysis.²⁸

Table 2

Sample pharmacist characteristics (n=165).

Mean Age (SD)	48.9 years (13.5)
Female	49.7%
Mean Years of Experience (SD)	23.7 years (23.7)
Practice Setting	
Large Chain	52.1%
Independent	22.4%
Supermarket	6.1%
Mass Merchandiser	11.5%
Other	7.9%

SD indicated standard deviation.

Table 3

Pearson correlations between workforce measures, job satisfaction, burnout, and conducting a patient profile review.

Profile Review	U	JG1	JG2	JS1	JS2	T1	T2	Job Satisfaction	Burnout
Unit workload (U)									
Job workload (general): Cognitive (JG1)	0.27**								
Job workload (general): Volume (JG2)	-0.48**	-0.16*							
Job workload (specific): Production (JS1)	-0.08	0.08	0.26**						
Job workload (specific): Monitoring (JS2)	-0.17*	0.03	0.50**	0.51**					
Task workload: Internal (T1)	-0.11	0.01	0.41**	0.36**	0.63**				
Task workload: External (T2)	-0.38**	-0.23**	0.63**	0.34**	0.51**	0.46**			
Job satisfaction	0.47**	0.46**	-0.45**	-0.09	-0.20*	-0.23**	-0.36**		
Burnout	-0.41**	-0.15	0.59**	0.17*	0.33**	0.36**	0.47**	-0.65**	
Profile review	0.13	0.20**	-0.03	0.01	0.14	0.06	-0.15	0.26**	-0.13

*
p<0.05,

**
p<0.01

Pearson correlations between workforce measures, job satisfaction, burnout, and counseling a patient on a new medication.

Table 4

Consult New Rx	U	JG1	JG2	JS1	JS2	T1	T2	Job Satisfaction	Burnout
Unit workload (U)									
Job workload (general): Cognitive (JG1)	0.27**								
Job workload (general): Volume (JG2)	-0.48**	-0.16*							
Job workload (specific): Production (JS1)	-0.08	0.08	0.26**						
Job workload (specific): Monitoring (JS2)	-0.17*	0.03	0.50**	0.51**					
Task workload: Internal (T1)	-0.04	0.07	0.30**	0.31**	0.52**				
Task workload: External (T2)	-0.41**	-0.23**	0.56**	0.19*	0.35**	0.18*			
Job satisfaction	0.47**	0.46**	-0.45**	-0.09	-0.20*	-0.16*	-0.44**		
Burnout	-0.41**	-0.15	0.59**	0.17*	0.33**	0.25**	0.51**	-0.65**	
Consult	0.10	0.23**	-0.10	0.16*	0.16*	-0.01	-0.21**	0.31**	-0.16*

* p<0.05,

** p<0.01