



Original Research

# 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 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

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and pharmacist work life. The results have implications for strategies to improve patient safety and pharmacist performance.

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*Keywords:* Community pharmacy; Workload; Medication safety; Structural equation modeling

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## Background

High quality, safe patient care and quality of working life in community pharmacies have been identified in the literature as targets for improvement.<sup>1–3</sup> Several studies have shown an equivocal relationship between workload and both the quality of care provided to patients<sup>4–6</sup> and pharmacist quality of work life.<sup>7,8</sup> 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.<sup>9–11</sup> 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.<sup>10,12</sup> 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.<sup>10</sup> 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.<sup>13,14</sup> 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,<sup>15</sup> 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 (Fig. 1).<sup>16</sup> 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

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