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PHARMACIST WORK STRESS AND LEARNING FROM QUALITY RELATED EVENTS

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Abstract

Background—Among the many stresses faced by pharmacy staff, quality related event (QRE) learning can be among the most significant. In the absence of a supportive organizational culture, the potential for blaming individuals, versus identifying key process flaws, is significant and can be very intimidating to those involved in such discussions and may increase an already stressful work environment.

Objective—This research develops and tests a model of the relationship between the work stress faced by pharmacists and the extent of QRE learning in community pharmacies. Building upon recent research models that explore job characteristics and safety climate, the model proposes that work stress captured by the effort that the pharmacist invests into job performance, the extent to

which the pharmacist is rewarded for such efforts, and the extent of pharmacist work-related commitment to their job, influence pharmacist assessment of the working conditions within their community pharmacy. It is further proposed that working conditions influence the extent of a blame culture and safety focus in the pharmacy, which, in turn, influences organizational learning from QREs.

Methods—This research formed part of a larger study focused on QRE reporting in community pharmacies. As part of the larger study, a total of 1035 questionnaires were mailed to community pharmacists, pharmacy managers, and pharmacy owners in the Canadian province of Saskatchewan during the fall of 2013 and winter and spring of 2014. Partial least squares (PLS) using SmartPLS was selected to test and further develop the proposed model. An examination of the statistical significance of latent variable paths, convergent validity, construct reliability, discriminant validity, and variance explained was used to assess the overall quality of the model.

Results—Of the 1035 questionnaire sent, a total of 432 questionnaires were returned for an initial response rate of approximately 42%. However, for this research, only questionnaires from staff pharmacists were used thereby reducing the number of usable questionnaires to 265. The final model highlights that pharmacist work stress greatly influences perceptions of the working conditions in the pharmacy ($r^2 = 0.52$), which, in turn, influence assessments of the safety focus ($r^2 = 0.27$) and blame culture ($r^2 = 0.14$) in the pharmacy. The model also found that the extent of a safety focus and blame culture within the pharmacy both influence the extent of organizational learning from QREs ($r^2 = 0.44$) within the pharmacy.

Conclusions—In an environment where financial rewards are not always possible, ensuring that pharmacy staff feel respected and encouraged in providing safe care may help enhance QRE learning. Given the importance placed on organizational reporting of, and learning from, QREs in many jurisdictions in North America, the findings from this study suggest that a number of working conditions and perceptions of blame culture and organizational safety need to be explored before such processes can become entrenched in work flow.

Keywords

Community Pharmacy; Quality Related Events; Work Stress; Partial Least Squares; Safety Culture

INTRODUCTION

Pharmacy practice is faced with significant pressures from a wide variety of sources. Changing work expectations and demands of pharmacists juxtaposed with various challenges in practice (e.g., time pressures, constant need for accuracy) have the potential to increase pharmacy staff work stress and incidence and prevalence of quality related events (QREs).^{1,2} Being involved with, and learning from, QREs, defined as medication errors that reach the patient and those that are intercepted by pharmacy staff before dispensing (i.e., near miss),³ can create additional stress in the work environment and has been found to be among the most significant stresses faced by pharmacy staff.⁴ Learning from QREs often requires pharmacy staff to carefully examine key activities that led to the QRE, some of which may include human error on the part of pharmacists, and discuss steps that should be undertaken to prevent similar error reoccurrence. Depending on the nature of the QRE and

circumstances surrounding it, a range of changes in pharmacy structures and processes may be required from minor to major alterations. In the absence of a supportive organizational culture that enables learning with adequate policies and procedures in place, the potential for blaming individuals, versus identifying root causes (e.g., key process flaws), is significant and can be very intimidating to those involved.⁵ Thus, in conjunction with work stress, organizational culture may be an important determinant of learning that occurs in response to QREs.

As pharmacy regulators from across North America increase their expectations with respect to QRE reporting and learning in community pharmacies,⁶ there is a need to better understand how work stress, related to QREs and otherwise, impacts staff engagement in QRE discussions and assessments of safety culture in their work environment. Without QRE learning occurring within a broader culture of safety, errors may continue to happen, putting patients, pharmacy staff, and the license, reputation, and morale of community pharmacists at risk. Understanding the impact of work stress on QRE learning and pharmacists' assessments of safety culture can inform the development and implementation of interventions designed to target key stressors that may impact QRE learning. This research explores the influence of pharmacist work stress on the extent of QRE learning and the assessment of safety culture in community pharmacies through the use of the effort-reward imbalance model of work stress and safety culture. More specifically, building upon recent models^{7,8} exploring the relationship between job characteristics and safety culture, this research develops a partial least squares model (PLS) of how the work stress faced by community pharmacists impact their assessments of working conditions, safety culture, and organizational learning from quality related events.

METHODS

Data Collection

This research originated from part of a larger study focused on QRE reporting and learning in community pharmacies. As part of the larger study, a total of 1035 questionnaires were mailed to community pharmacists, pharmacy managers, and pharmacy owners in the Canadian province of Saskatchewan during the fall of 2013 and winter of 2014. The questionnaire adopted questions from two previously validated instruments, specifically the Pharmacy Safety Culture Questionnaire (PSCQ)⁹ and the Effort-Reward Imbalance Questionnaire (ERI).¹⁰ Both questionnaires have been used in previous studies exploring the relationship between work stress and safety culture.^{7,8}

Questions from the PSCQ were used to assess pharmacy working conditions and organizational learning from QREs. The latest version of the PSCQ has 24 items and captures the construct of safety culture using four latent variables, specifically organizational learning (i.e., willingness of the pharmacy to develop and maintain a safe working environment), blame culture (i.e., pharmacy's tendency to assign blame to individuals when a QRE occurs), working conditions (i.e., presence or absence of working conditions that may indicate a safe pharmacy working environment), and safety focus (i.e., extent that safety is given priority in the pharmacy's day-to-day work activities).⁹ The latent variable labels for this study were slightly modified by adding "poor" to working conditions and safety focus in

order to improve the readability of the proposed model. All manifest variables were captured using a 5-point Likert-type scale (i.e., strongly disagree to strongly agree). A description of the constructs and survey items can be found in Table 1

To explore the work stress of community pharmacists, this research adopted questions from the short version of the effort-reward imbalance questionnaire,¹⁰ a validated instrument that has been used to assess stressful work conditions across many sectors and professions. The ERI questionnaire captures work stress along three latent variables, specifically effort, reward, and over-commitment. The ERI model captures the relationship between the efforts one has invested into job performance and the rewards that one, in turn, receives.¹¹ An imbalance or the lack of reciprocity between effort and reward, such as high levels of error, but low levels of reward/gain, may invoke “strong negative emotions and sustained stress reactions that in the long run adversely affect physical and mental health” (pp. 1006).¹¹ The original ERI questionnaire consisted of 23 questions. However, a shortened version of the ERI questionnaire has reduced the number of questions to 16.¹⁰ All variables are measured on a 4-point Likert-type scale (strongly disagree to strongly agree). The latent and manifest variables adopted from the shortened ERI questionnaire¹⁰ are presented in Table 2.

Proposed Model

Phipps and Ashcroft, in a study of 860 British pharmacists developed a path analytic model of job characteristics and safety climate.⁸ Building upon this model, this research proposes that work stress, captured by high levels of work effort (*Effort*) and commitment to one’s work (*Over-commitment*), but with few work-related rewards (*Reward*), influences pharmacists’ assessments of *Poor Working Conditions* within their community pharmacy. It is further proposed that *Poor Working Conditions* influences the extent of a *Blame Culture* and *Poor Safety Focus* in the pharmacy. *Blame Culture* and *Poor Safety Focus*, in turn, negatively influence *Organizational Learning* from QREs. The proposed model is presented in Figure 1.

Data Analysis

Partial Least Squares (PLS) using SmartPLS 2.0¹² was used to test the proposed model of organizational learning from QREs. Partial least squares is often viewed as a “soft” approach to path modeling when compared to the covariance-based modelling techniques, as PLS can be used when the assumption of normality has not been met or when a smaller, but still reasonable in size, dataset exists.¹³ Additionally, unlike structural equation modelling, PLS assumes that all variance found in a model should be explained¹⁴ and is able to incorporate and measure reflective and formative indicators.¹³ As such, it is argued that the PLS approach “makes for models that give a closer fit to the given observations...”.¹⁵ Manifest variables for this research were deemed as reflective, meaning that they give rise to and capture the latent variables in the model.¹³ A number of issues concerning the dataset were also dealt with before running the PLS model. Specifically, a missing case analysis was performed and the mean substitution method was used. In addition, variables that were negative in nature were also reverse-coded to ensure uniformity with the data.

To ensure an adequate sample size for PLS analysis, Hair et al.¹⁶ suggest that a minimum sample size should be equal to the larger of: (1) ten times the largest number of formative indicators in one construct or (2) ten times the largest number of paths directed at one latent variable. As the largest latent variable in the proposed model is comprised of three independent latent variables, all with reflective indicators, the minimum sample size for this study would be 30. However, other PLS researchers have made the determination that a minimum sample size of 100 is needed to ensure reliable results,¹⁷ with this rule being more widely accepted and used in this study.

As part of the PLS analysis, an examination of the statistical significance of latent variable paths, convergent validity, construct reliability, discriminant validity, and variance explained occurred to assess the overall quality of the model. Various recommendations, benchmarks, and best practices highlighted in the literature were used for this assessment.^{18,19,20} Examining the average variance extracted (AVE) for each latent variable and comparing it to the benchmark value of 0.5 was used to assess the model's convergent validity. In addition, item loadings were also examined during the analysis. Only those manifest variables with a loading greater than or equal to 0.7¹⁶ remained in the final PLS model. Construct reliability was assessed by examining the composite reliability (CR) for each latent variable and comparing it to the 0.7 benchmark.¹⁸ Discriminant validity was assessed by first calculating the square root of the AVE for each latent variable. The resulting values were then compared to the latent variable correlation matrix. To assess discriminant validity, the AVE for each latent variable should be above 0.707 (i.e., AVE = 0.5) and larger than its correlation to other latent variables in the PLS model.^{16,19} The cross-loadings of the manifest variables in the model were also examined to determine discriminant validity.

Bootstrapping was applied to test for the significance of the latent variable paths in the model. As part of the bootstrapping process,¹⁸ the sample size of the bootstrap resample was set to the size of dataset. The number of samples was first set to 200 and then verified using sets of 500 and 1000. Each latent path was then compared to the critical t-values of 1.96 (i.e., $p = 0.05$) and 2.58 (i.e., $p = 0.01$) in order to assess statistical significance. Only paths with statistical significance remained in the PLS final model. An examination of the variance explained (i.e., R^2) of the dependent latent variables occurred to evaluate the predictive power of the PLS model. As part of this examination, the common benchmarks of 0.19 (i.e., weak), 0.33 (i.e., moderate) and 0.67 (i.e., strong) were applied.^{14, 19}

RESULTS

Demographics

Of the 1035 questionnaire sent, a total of 432 questionnaires were returned for an initial response rate of approximately 42%. However, for this research, only questionnaires from staff pharmacists were used, thereby reducing the number of usable questionnaires to 265 (Table 3). This was to ensure that only perceptions of front-line workers were captured, as perceptions of managers and owners were expected to differ greatly. The average number of years worked in a community pharmacy setting for the staff pharmacists was 12.9. Staff pharmacists worked at their current pharmacy for an average of 6.5 years. Community pharmacies employed an average of 3.9 staff pharmacists and 3.3 pharmacy technicians.

Effort-Reward Imbalance and Over-commitment

Staff pharmacists indicated high levels of interruptions and disturbances while performing their job (mean = 4.25 on a 5-point scale) and that their job has become more demanding (mean = 4.28). Aspects of effort and reward that scored low included overall job promotion prospects (mean = 2.80) and promotion prospects based on work effort and achievements (mean = 3.24), as presented in Table 4.

Pharmacists indicated moderate scores for all over commitment items, as summarized in Table 5.

Safety Culture

Pharmacists perceived that their work environments had a good safety focus, with disagreement that staff are already trained and do not require further training (mean= 2.54), that training is seen as a low priority (mean= 2.43), and that “lip service” is being paid to patient safety (mean=2.54) (Table 6). Responses suggest that the culture in pharmacies provides some support for QRE reporting and learning, with the majority of pharmacists disagreeing that QRE discussions assign blame to individuals (mean= 2.08), and that there is a blame culture present (mean=2.28). However, organizational learning responses indicate a need for improvement in ensuring a culture of continuous improvement (mean= 3.37), including discussing ways to prevent QREs for recurring (mean=3.05) and constantly assessing for risks and improvements (mean=3.10).

Partial Least Squares Analysis

Overall, the findings support the hypothesized PLS model presented in Figure 1, but with some construct modifications. The final model of the influence of work stress on QRE learning in community pharmacies is presented in Figure 2.

Examination of the predictive power of the final PLS model indicates low to moderate explained variance (Chen 1998) with R^2 values of 0.139 for Blame Culture, 0.264 for Poor Safety Focus, 0.518 for Poor Working Conditions, and 0.435 for Organizational Learning. Analysis of convergent validity resulted in 15 manifest variables being dropped from the final PLS model as their item loadings were less than the recommended 0.7 threshold. The final PLS model possesses acceptable levels of construct reliability with the seven latent variables with CR values above the 0.7 threshold.¹⁹ In addition, the PLS model possesses acceptable levels of convergent validity, with AVE levels for each manifest variable above the 0.5 threshold and manifest variables with statistically significant item loadings above the 0.7 threshold. Table 7 presents the measurement properties of the PLS model.

Discriminant validity was also appropriate with the latent variables in the PLS model exceeding the threshold of $AVE = 0.707$ (i.e., $AVE = 0.5$) and much greater than the latent variable's correlation to the other such variables in the model. In addition, the cross-loadings for each manifest variable were also examined to assess for adequate discriminant validity. Results of the discriminant validity assessment are summarized in Table 8.

DISCUSSION

The final model highlights that pharmacist work stress greatly influences perceptions of the working conditions in the pharmacy ($r^2 = 0.52$), which, in turn, influence assessments of the safety focus ($r^2 = 0.26$) and blame culture ($r^2 = 0.14$) in the pharmacy. The model also found that the extent of a safety focus and blame culture with the pharmacy both influence the extent of organizational learning from QREs ($r^2 = 0.44$) within the pharmacy. These results are consistent with the finding of Phipps et al.⁷ and Phipps and Ashcroft⁸, who found that work stress impacts safety culture assessments by community pharmacists.

Community staff pharmacists in this study perceived that efforts expended in practice were greater than the rewards realized, with implications for high work stress. This finding is consistent with research from pharmacists in the UK who experienced a similar imbalance in effort-reward.²¹ Results from a multi-disciplinary study in a hospital setting suggest that perceptions of decisional control and co-worker support were positively associated with improved perceptions of effort and reward and greater job satisfaction.²² As such, greater understanding of the psychosocial aspects of effort and reward can be used to better design reward systems and understand how perceptions of effort can be alleviated.

Staff pharmacists from this study also perceived high levels of interruptions and disturbances, as well as finding their job to be more demanding than it was a few years previously. Pharmacists continue to move beyond traditional duties related to dispensing and the persona of “drug expert” into more clinically-oriented roles, including many in public health promotion and prevention.²³ However, these advances coincide with practice environments that continue to rely heavily on pharmacists for technical duties (e.g., counting medications) related to prescription processing. Pressures on staff pharmacists will inherently grow as they try to reconcile and balance technically- and clinically-oriented roles in an era in which prescription medications are increasingly used as one of the most commonly employed health care interventions, and especially in chronic disease management.²⁴ Role overload, including pressures resulting from high prescription volumes, and conflict have been found to influence levels of job stress and turnover intention for pharmacists.²⁵ Importantly, high prescription volumes and perceived overload in pharmacy practice have also been linked with higher self-reported errors rates² and other issues of quality and safety occurring in pharmacies.²⁶

Many of these factors can influence the work stress experience by pharmacists and impact their psychological wellbeing that extends into their private lives. While results from this study suggest that various over-commitment variables, such as the pharmacists were able to “let work go” in their personal lives, did not greatly impact the sample, increasing scope of practice as seen in other jurisdictions in Canada and North America may impede on this ability to recover over time. Over-commitment can stem from an underestimation of effort or from a desire to be esteemed,²⁷ the latter of which may manifest as pharmacists seeking approval for their actions from other health care professionals and their managers.²⁸ Other over-commitment variables related to work-life balance (e.g., longer work hours, work interference with personal life) have been shown in previous research from UK pharmacists to contribute to psychological stress experienced by pharmacists.² Similarly, a survey of US

pharmacists found that the majority of respondents experienced job stress (67.2%) and nearly half experienced work-home conflict (48.0%).²⁹ Greater effort expended in implementing and delivering expanded scope of practice activities and other practice changes may require more balance with rewards, including those that occur in practice but extend beyond the physical work environment, to promote the pharmacists' overall perceptions of their role in practice and maintain wellbeing. These rewards may vary and include better promotion prospects, compensation, autonomy in decision-making, better work-life balance, and collaboration among pharmacy staff and other health care professionals. The research suggests that perceptions of decisional control and co-worker support can enhance job satisfaction.²² Lerkiatbundit,³⁰ for example, identifies skill utilization, autonomy, role conflicts, routine, supervisor, support, patient cooperation, workload, and coworker support as key factors contributing to pharmacist job satisfaction. Likewise, Desselle and Tipton³¹ highlight that pharmacist's perceived performance ability was the result of their satisfaction and the various professional services offered by the pharmacy.

There are a number of limitations to this research that may also represent suitable future research opportunities. This research is focused on one regulatory jurisdiction in Canada. In addition, the study focused on work stress and safety culture assessments from staff pharmacists. However, there are other staff within the pharmacy that also play a critical role in patient safety, including pharmacy owners, pharmacy managers, and pharmacy technicians. As such, the generalizability of this study's findings may be limited when applied to other jurisdictions in North America or to non-staff pharmacist positions in the pharmacy. Despite the limitations, the results of this study contribute to understanding some of the psychosocial aspects of effort and reward that were present in a Canadian community pharmacy context and can be used to better inform future research on reward systems and how to better balance efforts expended with rewards. Future research that includes multiple pharmacy staff positions (e.g., owners, managers, pharmacist technicians) and jurisdictions is needed to support or further develop the PLS model presented in this study and assess how perceptions may differ based on staff type or pharmacy jurisdictions.

CONCLUSION

Pharmacists' work stress can impact their assessment of safety culture and learning from quality related events. Results from this study indicate that staff pharmacists perceived that they are expending more effort now than they have before and that reward structures may need to be altered as pharmacist activities and demands change. Rewards such as potential for career advancement, respect, and encouragement may contribute to balancing current disparities between rewards and efforts. Given the importance placed on organizational reporting of, and learning from, QREs in many jurisdictions in North America, the findings from this study suggest that a number of working conditions and perceptions of blame culture and organizational safety need to be explored before such processes can become entrenched in work flow. There are positive indications that pharmacists may be coping with increased workloads and adapting to new roles as they emerge. However, if structures are not in place to reward these new opportunities in clinically-oriented roles, and pharmacy organizations continue to emphasize the importance of certain revenue streams (e.g.,

prescription volume) over other services, pharmacist uptake of various services and their relevant standards of practice, including QRE reporting and learning, will remain low. Future research is needed to test the work stress model developed in this study and to explore opportunities for further embedding of QRE reporting and learning within existing pharmacy workflow processes.

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Figure 1.
Proposed Model of Work Stress and QRE Learning

Figure 2.
Final PLS Model of Work Stress and QRE Learning

Table 1**Safety Culture Latent and Manifest Variables**

Poor Working Conditions	PLS Model Abbreviation
There are enough staff to handle the workload [Reverse-coded]	STAFFRev
Staff work in “crisis mode” trying to do too much, too quickly	CRISIS
Staff work longer hours than is sensible for patient care	HOURS
It is by luck that more serious mistakes don’t happen in the pharmacy	SERMISTK
Poor Safety Focus	
Training in safety has a low priority and is seen as irritating, time consuming and costly	LOWPRIOR
Staff are seen as already trained to do their job, so why would they need more training	TRAINING
“Lip service” is paid to patient safety until an actual safety incident occurs	LIPSERVICE
Blame Culture	
There is a blame culture, so staff are reluctant to report QREs	BLAMECULT
Staff feel that their mistakes are held against them	HELDAGST
When an QRE is reported, it feels like the person is being reported, not the problem	PERSONRPT
QRE discussions aim to assign blame to individuals	ASGNBLAME
Organizational Learning	
Staff routinely discuss ways to prevent QREs from happening again	PREVENTQRE
All staff are constantly assessing risks and looking for improvements	RISKASMNT
Staff are routinely informed about QREs that happen in the pharmacy	HAPPENED
The culture is one of continuous improvement	CICULT
The effectiveness of any changes made following a QRE are evaluated	CHGEVAL
The pharmacy learns and shares information about safety with staff and other pharmacies	SHARESINFO
The team has a shared understanding and vision about safety issues; everyone is equally valued and feels free to contribute	VISIONS
Following a QRE, there is a real commitment to change throughout the pharmacy	COMMITCHG
Staff will freely speak up if they see something that may negatively affect patient care	STAFFSPEAK
QRE discussions are seen as learning opportunities	QRELRNOPT
QRE discussions aim to learn from QREs and communicate the findings widely	QRELRNCOM
The pharmacy manager/owner seriously considers staff suggestions for improving patient safety	STAFFSUG
All staff have education and training in safety	STAFFEDU

Table 2**Effort and Reward Latent and Manifest Variables**

Effort	PLS Model Abbreviation
I have constant time pressure due to a heavy workload	TIMEPRES
I have many interruptions and disturbances while performing my job	INTERRUPT
Over the past few years, my job has become more and more demanding	DEMANDING
Reward	
I receive the respect I deserve from my superior	RESPECT
My job promotion prospects are poor [Reverse-coded]	PROMOTRev
I have experienced or I expect to experience an undesirable change in my work situation [Reverse-coded]	CHANGERev
My job security is poor [Reverse-coded]	SECURITYRev
Considering all my efforts and achievements, my job promotion prospects are adequate	PROSPECTS
Considering all my efforts and achievements, my salary/income is adequate	INCOME
Considering all my efforts and achievements, I receive the respect and prestige I deserve at work	WORKRESPECT
Over-commitment	
I get easily overwhelmed by time pressures at work	OVERWHELM
As soon as I get up in the morning I start thinking about work problems	MORNING
When I get home, I can easily relax and 'switch off' work [Reverse-coded]	SWITCHOFFRev
People close to me say I sacrifice too much for my job	SACRIFICE
Work rarely lets me go, it is still on my mind when I do to bed	MIND
If I postpone something that I was supposed to do today I'll have trouble sleeping at night	POSTPONE

Table 3**Staff Pharmacist Respondent Demographics and Pharmacy Profile**

	Total	Percentage
<u>Pharmacist Gender</u>		
Female	211	79.6
Male	53	20.0
No answer	1	0.4
<u>Pharmacy Location</u>		
City	197	74.3
Town	34	12.8
Rural	32	12.1
No answer	2	0.8
<u>Pharmacy Type</u>		
Independent	55	20.8
Banner	51	19.2
Chain	58	21.9
Franchise	32	12.1
Mass Merchandiser	65	24.5
No answer	4	1.5
<u>QRE Reporting Process</u>		
No formal process	95	35.8
Head office only	25	9.4
Mostly manual	80	30.2
Mostly computerized	60	22.6
No answer	5	1.9

Table 4**Staff Pharmacist Job Effort**

Effort	N	Mean[*]	Standard Deviation
I have constant time pressure due to a heavy work load	265	3.65	1.09
I have many interruptions and disturbances while performing my job	265	4.28	0.88
Over the past few years, my job has become more and more demanding	258	4.02	1.00
Rewards			
I receive the respect I deserve from my superior	264	3.97	1.05
My job promotion prospects are poor [Reverse-coded]	262	2.80	1.05
I have experienced or I expect to experience an undesirable change in my work situation [Reverse-coded]	265	3.25	1.35
My job security is poor [Reverse-coded]	265	3.94	1.04
Considering all my efforts and achievements, my job promotion prospects are adequate	263	3.24	0.86
Considering all my efforts and achievements, my salary/income is adequate	265	3.49	1.01
Considering all my efforts and achievements, I receive the respect and prestige I deserve at work	262	3.48	1.02

*
1= Strongly Disagree; 5 = Strongly Agree

Table 5

Over-commitment

Over-commitment	N	Mean [*]	Standard Deviation
I get easily overwhelmed by time pressures at work	265	2.53	1.030
As soon as I get up in the morning, I start thinking about work problems	265	2.45	1.100
When I get home, I can easily relax and 'switch off' work [Reverse-coded]	265	2.66	1.097
People close to me say I sacrifice too much for my job	265	2.61	1.133
Work rarely lets me go, it is still on my mind when I go to bed	265	2.50	1.108
If I postpone something I was supposed to do today, I'll have trouble sleeping at night	265	2.87	1.114

^{*}
1= Strongly Disagree; 5 = Strongly Agree

Table 6**Safety Culture**

Poor Working Conditions	N	Mean*	Standard Deviation
There are enough staff to handle the workload [Reverse-coded]	263	2.79	1.19
Staff work in "crisis mode" trying to do too much, too quickly	262	2.91	1.07
Staff work longer hours than is sensible for patient care	264	2.29	1.12
It is by luck that more serious mistakes don't happen in the pharmacy	262	2.41	1.12
Poor Safety Focus			
Training in safety has a low priority and is seen as irritating, time consuming and costly	233	2.43	1.05
Staff are seen as already trained to do their job, so why would they need more training	253	2.54	1.10
"Lip service" is paid to patient safety until an actual safety incident occurs	222	2.54	1.05
Blame Culture			
There is a blame culture, so staff are reluctant to report QREs	254	2.28	1.12
Staff feel that their mistakes are held against them	254	2.43	1.06
When an QRE is reported, it feels like the person is being reported, not the problem	249	2.98	1.20
QRE discussions aim to assign blame to individuals	227	2.08	1.04
Organizational Learning			
Staff routinely discuss ways to prevent QREs from happening again	256	3.05	1.12
All staff are constantly assessing risks and looking for improvements	255	3.10	0.98
Staff are routinely informed about QREs that happen in the pharmacy	254	3.17	1.23
The culture is one of continuous improvement	257	3.37	0.94
The effectiveness of any changes made following a QRE are evaluated	228	2.58	1.02
The pharmacy learns and shares information about safety with staff and other pharmacies	245	3.24	1.12
The team has a shared understanding and vision about safety issues; everyone is equally valued and feels free to contribute	248	3.54	1.00
Following a QRE, there is a real commitment to change throughout the pharmacy	244	3.14	1.07
Staff will freely speak up if they see something that may negatively affect patient care	263	3.78	0.94
QRE discussions are seen as learning opportunities	239	3.54	0.97
QRE discussions aim to learn from QREs and communicate the findings widely	218	3.09	1.10
The pharmacy manager/owner seriously considers staff suggestions for improving patient safety	260	3.64	1.09
All staff have education and training in safety	241	3.18	1.11

*
1= Strongly Disagree; 5 = Strongly Agree

Table 7

Measurement Properties

Latent Variable	CR	AVE	Man. Variable*	Item Loading
BLAMECULT	0.90	0.69	PERSONRPT	0.850
			HELDAGST	0.846
			ASGNBLAME	0.793
			BLAMECULT	0.833
EFFORT	0.86	0.67	TIMEPRES	0.859
			INTERRUPT	0.818
			DEMANDING	0.773
ORGLRN	0.90	0.59	STAFFSUG	0.737
			CICULT	0.772
			PREVENTQRE	0.724
			VISIONS	0.793
			HAPPENED	0.760
			COMMITCHG	0.822
OVERCOM	0.89	0.66	SWITCHOFFREV	0.781
			MORNING	0.864
			MIND	0.883
			POSTPONE	0.723
REWARD	0.85	0.66	CHANGERev	0.790
			RESPECT	0.784
			RESPECT	0.862
SAFEFOC	0.81	0.68	LIPSERVICE	0.828
			LOWPRIOR	0.819
WORKCDT	0.86	0.66	CRISIS	0.862
			SERMISTK	0.811
			STAFFRev	0.770

* See Tables 1 and 2 for variable descriptions.

Table 8

Discriminant Validity Assessment

	AVE	AVE	BC	EF	OL	OC	RW	SF	WC	
BLAMECULT (BC)	0.69	0.83	AVE 0.83	Latent Variable Correlation Matrix						
EFFORT (EF)	0.67	0.82	0.18							AVE 0.82
ORGLRN (OL)	0.59	0.77	−0.52							−0.29
OVERCOM (OC)	0.66	0.81	0.24	0.41	−0.25	AVE 0.81				
REWARD (RW)	0.66	0.81	−0.40	−0.44	0.55	−0.38				AVE 0.81
SAFEFOC (SF)	0.68	0.83	0.55	0.19	−0.62	0.27				−0.39
WORKCDT (WC)	0.66	0.81	0.37	0.62	−0.55	0.48	−0.56	0.51	AVE 0.81	