The Relationship between Nurses' Errors of Treatment and Supervisors' Constructive Listening

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Nurses' unintentional medication errors during treatment are relatively frequent and yet inevitable. Errors provoke emotions which influence the nurses' professional careers. Little is known about the relationship between nurses' supervisors constructive listening (CL) and the emotional reactions of nurses who committed an error and its relation to patients' safety. Our purpose was to explore the relationship between nurses' perceptions regarding their supervisors' CL and their emotional experiences after committing an error related to patient care. Dependent variables included of guilt, empathy towards the patient, general and professional self-assessment, shame, and Negative and Positive Affect (NA/PA). In this descriptive study, we used a snowball sampling method. Participants were asked to sign an informed-consent form and complete the questionnaire before or after work. No compensation (material or otherwise) was offered to participants. The study was approved by the ethics committee of the academic institution involved. A total of 162 nurses participated: 103 (63.6%) held a registered and 40 (25%) held a managerial role. Seniority had high variability, ranging from 3 months to 45 years ($M=13.54$, $SD=0.78$). The majority of errors reported (67.7%) concerned the administration of medications. We used Structural Equation Modeling to measure relationships between the main variables ($X^2(9)=14.52$, $p=.105$, $CFI=.911$, $RMSEA=.062$ (90% CI=.00-.11). The main findings were: a high rating of perceived supervisor's CL led to high state-guilt ($\beta=.15$, $p=.04$). Next, higher state-guilt led to high PA ($\beta=.18$, $p=.02$) and to high NA ($\beta=.45$, $p<.001$). High PA led to reporting the error ($\beta=.17$, $p=.03$), whereas high NA led to a high degree of empathy towards the patient ($\beta=.17$, $p=.03$). Our findings show the importance of CL, which led to reporting error and to empathy towards patients, mediated by increased state-guilt and by increased positive and negative effect. Supervisor nurses should use CL to create an atmosphere of trust which fosters the reporting of errors and improves patients' safety.

Keywords: nurse error, constructive listening, patient safety, medication errors

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1. Introduction

There are many definitions of medical error as the body of literature and research on the subject grow. According to Makary and Daniel (2016), they defined medical error as an unintended act (either of omission or commission) or one that does not achieve its intended outcome. Medical errors are the failure of a planned action to be completed as intended (an error of execution), the use of a wrong plan to achieve an aim (an error of planning), or a deviation from the process of care that may or may not cause harm to the patient. The fiscal damage of such errors is estimated in billions of dollars (Kagan and Barnoy 2013).

Medical error is the 3rd most common cause of death in the US. The leading causes of harm in hospitals in developed countries are medication errors and they are the leading kind of error nurses made (Jones and Treiber 2012; Azuly et al. 2007). Although we cannot eliminate human error, we can better measure the problem to design safer systems mitigating its frequency, visibility, and consequences. Strategies to reduce death from medical care should include three steps: making errors more visible when they occur so their effects can be intercepted; having remedies at hand to rescue patients damage; and making errors less frequent by following principles that take human limitations into account (Makary and Daniel 2016; Fleishman and Tabak 2011).

Various studies have demonstrated that error is the greatest source of nurses' anxiety (Kagan and Barnoy 2013) and nurses' reactions to it are described as involving psychological and physical stress similar to those experienced in PTSD, as well as sadness, fear, anger, shame, and guilt (Koch and Weiss 2012; Azuly et al. 2007). Hence, our purpose was to seek an effective and supportive response which would facilitate the process of the nurse's emotions to drawing conclusions to promote her or his professionalism.

According to Kim, Kang, Kim, and You (2014), nurses refrain from reporting error when the relationship between employee and supervisor is characterized by lack of trust. By contrast, in health care workplaces in which relationships are predominantly characterized by cooperation and trust, a rise in the willingness to report error was noted. According to the American Association of Nurse Attorneys, nurses must establish the "Just Culture Model," a method of investigating error, which seeks to promote a nonpunitive, supportive environment, quality care, and safety, over punishment and blame (Halpern, McKinnon, Okolo, Sanzio, and Dolan 2016).

The studies by Lewis (2012) embraced the understanding that a system's approach to medical error includes treating well-intentioned providers who are involved in medical errors as the "second victims" in the event. These cross-sectional studies examined nurses' responses to medical error. The findings provided valuable insights into the factors that influenced nurses' emotional responses to the error. The results were: (a) Events and adverse events were each related to higher emotional exhaustion and depersonalization and to higher moral distress; (b) Disclosure of medical error to patients was related to lower moral distress; (c) An environment that supports nurses involved in a medial error was related to lower levels of moral distress, emotional exhaustion, and depersonalization as well as to higher personal accomplishment; (d) Nurses' intention to leave was positively related to events and emotional exhaustion, and inversely related to support and personal accomplishment. These studies underscore our underlying premise, namely, that attending to incidents of error in the proper manner, i.e., by addressing the emotional impact of the error, can lead to healing and positive growth for nurses, as well as for patients and their families (Crigger and Meek 2007; Swift 2013).

1.1. A Supportive Atmosphere—The Independent Variable of Constructive Listening (CL)

A supportive atmosphere in the health care workplaces and the use of adaptive coping can help nurses

properly overcome the initial negative emotions, by managing them in a constructive manner, so as to strengthen their self and professional assessment, while emphasizing the need to repair the error-related behavior.

Previous studies have shown that having a significant figure practice CL when telling one's personal meaningful experiences is associated with a sense of greater psychological safety, which enables higher emotional and cognitive complexity of self-perception (Bruneau and Saxe 2012; Itzhakov, Castro, and Kluger 2015). Thus, when one experiences CL, one reports higher levels of both positive and negative emotions towards a specific object (person, memory, and etc.). In this study, we suggest that the general practice of CL on the part of the nurse's supervisor could affect the way the nurse perceives the error, enabling the nurse to endure a complex set of emotions towards the self.

The act of listening is theorized to be an intrapersonal and dynamic process, in which the listener changes the cognition, perception, and even the behavior of the speaker (Kluger and Zaidel 2013). Specifically, CL creates a climate of psychological safety and trust, thus promoting well-being. Recent studies suggest that listening correlates strongly with beneficial organizational outcomes. Listening was found beneficial to both parties: Constructive listeners were judged as better leaders by their subordinates and had a greater organizational influence (Kluger and Zaidel 2013). Hence, employees who felt they had been listened to reported increased work satisfaction, psychological safety, and well-being, as well as decreased stress and job burnout (Lloyd, Boer, Keller, and Voelpel 2014).

Active listening from a significant other could result in positive outcomes for the speaker, especially when it involves empathy and a non-judgmental approach and when the listener has in mind the best interest of the speaker (Rogers 2012). A supervisor's active and non-judgmental listening to employees' wrongdoings could instigate a positive process of change towards responsibility-taking and healing. Employees who trust that their supervisors are accepting of their actions and can provide a space in which they can safely air their emotions feel encouraged to take a more empathic perspective towards errors.

Hence, the goal of this study was to examine the effects that CL—practiced by the nurses' supervisors—had on nurses' feelings after committing an error related to patient care. As noted, our underlying premise was that a trusting atmosphere would encourage nurses to report an error, mitigate the destructive effects of their negative emotions, and increase their empathy towards the patient.

1.2. Emotions in the Aftermath of an Error—The Dependent Variables

Guilt plays a major role in preserving cooperation between people, since it urges those involved in a negative incident to take specific actions in order to repair the harm that has been done. In this way, guilt conveys commitment to others and therefore is vital for the endurance of long-term relationships (Morris and Keltner 2000).

Empathy is conceptualized as one's ability to understand and share in another's emotional state or context and encompasses both the cognitive process and the affective capacity (Cohen and Strayer 1996). Jolliffe and Farrington (2004) found, on the one hand, a strong negative correlation between cognitive empathy and offensive behavior (21 studies), and on the other hand, a weak negative correlation between affective empathy and offensive behavior (14 studies). These correlations disappeared after controlling for intelligence and socio-economic status.

Negative Affect (NA) and Positive Affect (PA) reflect dispositional dimensions, with high NA epitomized by subjective distress and unpleasurable engagement, and low NA by the absence of these feelings. By contrast, PA represents the extent to which an individual experiences pleasurable engagement with the environment. The labels *positive affect* and *negative affect* are misleading, as each is defined predominantly by the activation of its opposing valenced affect, i.e., the lower ends of each dimension are typified by the absence of the relevant affect (Watson, Clark, and Tellegen 1984).

As mentioned, one of Lewis' (2012) findings was that nurses' intention to leave was negatively related to support and personal accomplishment. In other words, we may conjecture that if nurses reach a state of positive self and professional assessment, they are less likely to leave the profession and more likely to return to optimal functioning. Hence, we opted to include nurses' professional self-assessment as a dependent variable that can indicate whether the nurse is on the path to make-peace with herself and her professional performants.

2. Purpose

In this study, we seek to better understand the emotional reactions of nurses who have committed errors, and explore the relationship between their perceptions regarding their supervisors' practice of CL and their emotional experiences after committing an error related to patient care. The goal of the study is to promote patient safety by showing that an environment of trust, characterized by the practicing of CL (in this case, by the nurse's supervisor) can influence the nurse involved in the error, by advancing the process to improve enduring the emotions towards the nursing profession, and encouraging feelings of empathy towards the aggrieved patient.

Research questions:

- (1) Is nursing managers Constructive Listening moderating the emotions (PA/NA, state-guilt, shame) of the nurse who committed an error?
- (2) Is CL leading to report the error and empathy towards the patient?

2.1. Methods

Participation in the current descriptive study was offered to nurses using a snowball sampling method to recruit nurses from various workplaces and diverse geographical regions. The questionnaires were distributed by nursing students at their clinical studies. The inclusion criteria for participation were working as a nurse in a healthcare site, and signing an informed-consent form. No compensation (material or otherwise) was offered to participants. The study was approved by the ethics committee of the academic institution involved (JCT/N/018).

2.2. Participants

To calculate sample size, power analysis was conducted, using a regression model with the following assumptions: alpha probability of 0.05, power of 0.8, 10 predictors, and effect size of 0.15. This analysis yielded a total sample of 120 participants. In order to insure high power, a total of 162 nurses participated in this study. Of these, 103 (63.6%) were Registered Nurses (RN) with a BA degree, 28 (17.3%) were RNs (with no academic education), 9 (5.6%) were practical nurses, 22 (13.6%) had a master's or a Ph.D. degree. Forty nurses (25%) held a managerial role. Seniority had high variability, ranging from 3 months to 45 years ($M=13.54$, $SD=.78$). Most of the nurses (62.7%) were employed in a part-time position.

2.3. Measures

Note: unless stated otherwise, a higher score in all of the following scales means higher level of the measure.

Information about errors—We asked participants to report the frequency of committing each type of error from a list presented to them: administering the wrong type of medication, administering medication at the wrong time, administering the wrong dosage, error in: identification of the patient, drawing blood for tests. Participants were asked whether they reported this error, to whom, and also whether this error caused any damage to the patient.

Positive and Negative Affect (PANAS)—We used PANAS by Watson, Clark, and Tellegen (1988). This measure is widely used in the psychology literature to assess emotions (for a review of this scale and its validation, see Thompson, 2007). Participants were introduced to 20 emotions and were asked to indicate whether they experience each emotion, using a Likert-like scale, ranging from 0 (not at all) to 10 (absolutely). The questionnaire measured positive affect (such as interest or inspiration; Cronbach's $\alpha=.780$), and negative affect (such as shame or strain; Cronbach's $\alpha=.838$).

State-guilt—We used Trauma-Related Guilt Inventory by Kubany et al. (1996). The questionnaire was originally developed to measure guilt related to trauma. In the current study, participants were introduced to 23 items describing guilty feelings, e.g., "I could have prevented the mistake" or "I blame myself for what happened." They were asked to indicate the degree to which each item pertained to their own emotional experience, using a Likert-like scale, ranging from 0 (not at all) to 10 (absolutely). Cronbach's alpha was .844.

Professional self-assessment—We developed a questionnaire consisting of three items as follows: (1) "I feel good with the way I acted," (2) "I feel I acted appropriately in this case," and (3) "Other nurses would have managed better than I did in this situation." Participants indicated their agreement with the statements on a Likert-like scale, ranging from 0 (not at all) to 10 (absolutely). Cronbach's alpha was .720.

Empathy—We used The Toronto Empathy Questionnaire of Spreng et al. (2009). Participants were introduced to 10 items that measure empathy towards the patient, e.g., "When my patient feels distress, I feel the same" or "I enjoy improving the conditions of my patients." They were asked to rate their agreement with each of the statements on a Likert-like scale, ranging from 0 (not at all) to 10 (absolutely). Cronbach's alpha was .722.

Trait Shame and Guilt—We used the Personal Feelings Questionnaire (PFQ-2) of Harder and Zalma (1990). Participants responded to 10 items that measure trait shame, e.g., "I feel embarrassed" and six items that measure trait guilt, e.g., "I feel grave guilt." They were asked to indicate the degree to which they agree with each statement, using a Likert-like scale, ranging from 0 (not at all) to 10 (absolutely). Cronbach's alpha was .856 for shame and .807 for guilt.

CL—Listening was measured using the Facilitative Listening Scale (Bouskila-Yam and Kluger 2011). Participants rated the degree to which they believed that the statement described CL by their supervisor (Tries hard to understand what I am saying; Asks questions that show his/her understanding of my opinions; Encourages me to clarify a problem; Expresses interest in my stories; Listens to me attentively; Pays close attention to what I say; Gives me time and space to talk; Gives me his/her undivided attention; Creates a positive atmosphere for me to talk; Allows me to fully express myself), using a scale ranging from 0 (not at all) to 10 (absolutely). Cronbach's alpha was .970.

2.4. Definition of Variables

The independent variables in the study were the following: gender, family status, citizenship, religiosity, place of birth, education, job position, age, seniority, the supervisor's ability to listen constructively (as rated by participants), and the head nurse's attitude towards the nurse involved in the incident.

The dependent variables in the study were as follows: The effect on the nurses—feelings of guilt, empathy towards the patient, general and professional self-assessment, shame, and negative and positive affect.

3. Data Analysis

Data were entered to SPSS software version 21, which was also used to conduct analyses. After assessing acceptable reliabilities, measures were computed using averages of relevant items. Descriptive statistics was produced using frequencies for categorical variables (e.g., gender) and means (i.e., "M") and standard deviations (i.e., SD) for continuous variables. To assess associations between variables, Pearson correlations were computed both between main measures, and also with demographic variables in order to identify potential covariates for regressions.

Afterwards, hierarchical regressions were produced, predicting State-guilt and Empathy due to controlling demographic variables that explain part of total variances. In both correlations and regressions, categorical variables were treated as dichotomous variables, in which 0 represents "no" and 1 represents "yes."

Finally to assess the full model, path analysis was computed using AMOS software. In the multi-variate analyses (i.e., regressions and path analysis) adjusting for multiple comparisons was considered.

4. Results

The majority of nurses reported errors regarding medication administration (N=90) 61 (67.7%), 14 (15.6%) reported committing errors that were not related to medication administration. According to responses, most of the errors (143, 88.3%) did not result in damage to the patients. Almost all of the nurses 152 (92.5%) reported the errors to their supervisors, most of them 107 (70.4%) to their direct supervisors.

Means, SDs, and correlations between variables in the total sample are shown in Table 3. Results indicate that CL on the part of the supervisor correlated positively with state-guilt, professional assessment, and empathy towards patients, i.e., the more the nurses perceived their supervisors to be constructive listeners, the higher were their self-rated professional assessments, the more guilt they felt about their errors, and the more empathy they felt towards their patients. In addition, empathy towards patients was positively correlated with NA and self-rated professional assessment, i.e., the more empathy the nurses felt towards their patients, the more negative affect they experienced and the higher were their self-rated professional assessments.

In regard to intra-correlations between the various emotions, state-guilt was found to be strongly and positively associated with NA, whereas it had a weaker association with PA. In addition, state-guilt was negatively related to professional assessment. Trait shame was correlated positively with PA and NA. Trait guilt was correlated positively with NA.

4.1. About Here Table 1

Results presented in Table 2 show associations between demographics and main variables among the total sample. These associations were conducted in order to identify potential covariates for the following regressions. Results indicate that age was positively associated with professional assessment and CL, but

negatively associated with trait shame, i.e., the older nurses had a more positive perception of their supervisors' listening and higher scores on self-reported professional assessment, but expressed less trait shame than did their younger colleagues in the cohort. Religiosity was positively related to state-guilt, but negatively correlated with CL, i.e., the more religious the nurses were, the more guilt they experienced after committing an error at work and the less they tended to perceive their supervisors as good listeners. Seniority was positively correlated with state-guilt, meaning that senior nurses felt more guilt in regard to errors at work. Finally, the professional self-assessments of nurses in managerial positions were higher than those of nurses in non-managerial positions.

4.2. About Here Table 2—Model Testing—Predicting State-Guilt

To examine which variables were most likely to predict state-guilt, variables were entered into the model in a step-wise hierarchical regression, whereby in the first step, religiosity and seniority were entered, because they were found to be correlated with state-guilt. In addition, error characteristics were entered. In the second step, professional assessment, empathy, PA, NA, and CL were entered. Results showed that seniority was positively correlated with state-guilt, i.e., senior nurses exhibited a higher state of guilt in relation to patients after committing an error ($p=.014$). In addition, harm to patients was negatively correlated with state-guilt ($p=.050$). NA had the strongest correlation, such that higher NA was correlated with higher state-guilt. Also professional assessment was negatively correlated with state-guilt. Finally, a higher rating of the supervisor's CL was correlated with a higher state of guilt. No correlation was found between error characteristics and state-guilt.

4.3. About Here Table 3—Predicting Empathy

To examine which variables predict empathy, a hierarchical regression model was used. In the first step, error characteristics were entered, and in the second step, professional assessment, state-guilt, PA, NA, CL, trait shame, and trait guilt were entered. Results showed that trait shame was the strongest predictor of empathy, whereas a high degree of shame was associated with less empathy. In addition, NA correlated positively with empathy. No correlation was found between error characteristics and state-guilt.

4.4. About Here Table 4—Path Analysis Model

To measure relationships between the main variables, Structural Equation Modeling was conducted, using AMOS software. The following model achieved good measures of fitness— $X^2(9)=14.52$, $p=.105$, CFI=.911, RMSEA=.062 (90% CI=.00-.11).

According to the model, a high rating of supervisor's perceived CL led to high state-guilt ($\beta=.15$, $p=.04$). Next, higher state-guilt led to high PA ($\beta=.18$, $p=.02$) and high NA ($\beta=.45$, $p<.001$). Finally, high PA led to reporting the error ($\beta=.17$, $p=.03$), while high NA led to high degree of empathy ($\beta=.17$, $p=.03$). The main conclusion of this model is that CL led to reporting the error and also to a higher degree of empathy towards patients, by increasing state-guilt and also by increasing both positive and negative affect.

4.5. About Here Figure 1—Discussion

The findings of the current study emphasize the important effects that a supervisor's CL has on a nurse involved in an error, as well as the positive outcome in relation to patient safety. Well-trained and experienced nurses have to cope with the emotional burden of unintentional and inevitable medication errors; CL can help better the outcomes.

As demonstrated in the literature (Makary and Daniel 2016; Fleishman and Tabak 2011), so too in our study, the majority of errors reported by nurses concerned the administration of medications and the error did not result in harm to the patient. Nevertheless, the nurses defined these errors as the most severe incident of their careers. In other words, it appears that in the study, the nurses' experience of the error was not related to the degree of harm it caused. It appears that the majority of nurses reported the error to their direct supervisor, yet a substantial percent ($n=45$, 30%) of participants reported also to other leading figures, in addition to their direct supervisors. The nurses in this study reported their errors, but only a small portion of errors are usually reported (Fleishman and Tabak 2011); perhaps those who did not agree to participate in this study did not report their errors. In this study, as well as in Lewis (2012), the seniority of the nurse was positively related to professional self-assessment and perceived CL on the part of the supervisor. Seniority was also positively related to guilt: The more senior the nurse, the greater the guilt he or she experienced after committing an error. We can assume that senior nurses may well have committed errors related to patient care more than once in their career; they are experienced and accustomed to coping with on-the-job stress (Lewis 2012).

Moreover, potential harm to the patient was negatively related to guilt: The more severe the error, the less guilt was experienced by the nurse. This finding was surprising, but, it may be due to the nurses' way of coping. If no root cause of medication error is known and there is no system in place to prevent the recurrence of known errors (Makary and Daniel 2016), their perception may be that the cause of error is a flawed process or system, which absolves them of guilty feelings. Nevertheless, regardless of whether they considered themselves personally responsible for the error, their emotional strength, professional self-assessment, and affect were negatively influenced. Indeed, as findings indicate, negative affect correlated positively with guilt, and professional self-assessment correlated negatively with guilt.

As anticipated by study's question I, a positive association was found between the supervisor's CL and nurses' feelings of guilt, professional self-assessment, empathy towards the patient, and reporting the error. Crigger and Meek's observation (2007) that typically nurses found it difficult to make peace with themselves after committing an error may help explain the correlation between the supervisor's CL and high levels of both positive and negative affect (Fig. 1, b and c). It may be that when the supervising nurse demonstrates CL, the nurse who committed the error feels as though he or she betrayed the trust of the supervisor.

As for the studies model, findings show that CL of the supervisor nurse that had high rating led to high state-guilt and to high PA/NA as we anticipated. Finally, high PA led to reporting the error which is one of the main goals of the study, and high NA led to high degree of empathy towards the patient which is the second goal.

4.6. *Conclusions*

The model emphasizes the need to provide support and treatment to nurses, not only—but particularly—after they have committed an error. As shown, both the reporting of the error and nurses' empathy for patients are associated with the supervisor's CL. It appears that this enables nurses to cope with personal negative outcomes of inevitable medication errors. Negative feelings are a personal mental burden that can interfere with nurses' ongoing work and affect their perception of the professional task of caring for patients. The ability to develop an open and trusting environment for communication about mistakes is a very important step towards reducing emotional burden and burnout. In line with the observations reported in the professional literature, the current study's findings likewise indicate that the supervising nurse's reactions play an important part in determining the effects that the error incident will have on the nurse involved.

It is recommended therefore that nurses in a supervisory position use CL to create an atmosphere of trust, which in turn encourages the reporting of errors and consequently contributes to patients' overall safety. In addition, a new perception of error should be introduced, one which views it as a phenomenon that can contribute to the development of the employee and that of the organization as a whole.

4.7. Study Limitations

4.7.1. Inherent bias

Nurses who are willing to participate on a voluntary basis in completing a questionnaire survey may be more likely to act morally and report errors truthfully than nurses who opt not to participate voluntarily in such endeavors. It is also possible that errors committed by the nurses who refused to participate were more severe and were left unreported, as compared to errors reported by the nurses who participate in the study.

4.7.2. Self-reporting methodology

Given the method applied in the study and its reliance on participants' unverifiable self-reports, it is possible that in an attempt to be socially acquiescent or due to fear of admitting failure, certain participants minimized the severity of the error committed or the severity of its effect on the patient. It may be that in general, participants opted to report on the least severe errors committed.

4.7.3. Lack of a system perspective

The current study focused on the individual perspective of nurses regarding errors they committed. Further research is required to include the system perspective, which according to safety-science literature could significantly contribute to understanding the emotional, cognitive and behavioral aspects of errors committed by nurses.

Additional research is needed to better understand nurses' reactions to errors they committed and the impact that an empathic accepting and trusting environment can have on the nurses' emotional experience and its influence on patient's safety.

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Table 1
Means, SDs, and Correlations between Variables (N=162)

	M (SD)	1	2	3	4	5	6	7
1. PA	5.60 (1.68)							
2. NA	5.53 (1.63)	.371**						
3. State-Guilt	5.31 (1.82)	.182*	.425**					
4. Professional Assessment	5.81 (3.08)	.086	.059	-.293**				
5. Empathy towards Patient	7.88 (1.31)	.069	.164*	.061	.147			
6. Trait Shame	1.87 (1.59)	.162*	.193*	.012	-.063	-.120		
7. Trait Guilt	2.85 (2.08)	.109	.173*	.128	-.036	.092	.695**	
8. Constructive Listening	7.23 (2.35)	.026	-.076	.154*	-.049	.201*	-.072	.128

* $p < .05$, ** $p < .01$.

Table 2
Correlations between Main Study Variables and Demographic Variables (N=158-162)

	Age	Gender 1-M, 2-F	Marital 0-not married 1-married	Religiosity	Seniority	Job 0-part 1-full	Education	Role 0-not manager 1-manager
1. PA	.066	-.162	.031	-.073	.070	.021	-.015	.001
2. NA	-.114	-.105	-.090	-.079	-.051	-.049	.071	-.082
3. State-Guilt	.121	-.011	.047	.161*	.134*	-.055	.042	.076
4. Professional Assessment	.113	-.050	-.002	-.077	.101	.042	.004	.191*
5. Empathy towards Patient	.093	-.034	.035	-.055	.077	-.002	.053	.026
6. Trait Shame	-.157*	-.008	-.126	-.019	-.097	.015	-.092	-.104
7. Trait Guilt	.031	.016	-.015	.005	.046	.003	-.025	.004
8. Constructive Listening	.157*	.099	-.021	-.142*	.107	.085	.072	.079

* $p < .05$, ** $p < .01$.

Table 3
Predicting State-Guilt by Demographic Variables, Professional Assessment, Empathy, PA, NA, and Constructive Listening (N=129)

Step		β	P	R^2 Change
1	Religiosity	-.121	.178	.081
	Seniority	.179	.055	
	Error Reported	-.075	.425	
	Reported to Supervisor	-.008	.927	
	Harm to Patient	-.174	.060	
2	Religiosity	-.101	.187	
	Seniority	.204	.014	
	Error was Reported	-.002	.978	
	Reported to Supervisor	-.053	.505	
	Harm to Patient	-.157	.050	
	PA	.030	.715	
	NA	.432	.000	
	Empathy	-.032	.687	.306**
	Professional Assessment	-.338	.000	
	Constructive Listening	.206	.010	
	Trait Shame	-.107	.320	
	Trait Guilt	.085	.421	

* $p < .05$, ** $p < .01$.

Table 4**Predicting Empathy by Demographic Variables, Professional Assessment, PA, NA, CL, and State-Guilt (N=129)**

Step		β	P	R^2 Change
1	Error Reported	.057	.542	.018
	Reported to Supervisor	-.119	.182	
	Damage to Patient	.062	.503	
2	Error Reported	.049	.594	.151**
	Reported to Supervisor	-.132	.130	
	Harm to Patient	.064	.479	
	PA	-.031	.739	
	NA	.224	.030	
	State-Guilt	-.043	.670	
	Professional Assessment	.140	.126	
	Constructive Listening	.132	.144	
	Trait Shame	-.351	.003	
	Trait Guilt	.212	.067	

* $p < .05$, ** $p < .01$. **Fig. 1. Path analysis model to predict reporting and empathy.*** $p < .05$, ** $p < .01$.

Note: numbers next to arrows representing beta's coefficients.