

# VOLUNTARY MEDICATION ERROR REPORTING BY ED NURSES: EXAMINING THE ASSOCIATION WITH WORK ENVIRONMENT AND SOCIAL CAPITAL

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**Introduction:** Medication errors are one of the most frequently occurring errors in health care settings. The complexity of the ED work environment places patients at risk for medication errors. Most hospitals rely on nurses' voluntary medication error reporting, but these errors are under-reported. The purpose of this study was to examine the relationship among work environment (nurse manager leadership style and safety climate), social capital (warmth and belonging relationships and organizational trust), and nurses' willingness to report medication errors.

**Methods:** A cross-sectional descriptive design using a questionnaire with a convenience sample of emergency nurses was used. Data were analyzed using descriptive, correlation, Mann-Whitney U, and Kruskal-Wallis statistics.

**Results:** A total of 71 emergency nurses were included in the study. Emergency nurses' willingness to report errors decreased as the nurses' years of experience increased ( $r = -0.25$ ,  $P = .03$ ). Their willingness to report errors increased when they received more feedback about errors ( $r = 0.25$ ,  $P = .03$ ) and when their managers used a transactional leadership style ( $r = 0.28$ ,  $P = .01$ ).

**Discussion:** ED nurse managers can modify their leadership style to encourage error reporting. Timely feedback after an error report is particularly important. Engaging experienced nurses to understand error root causes could increase voluntary error reporting.

**Key words:** Leadership style; Safety climate; Organizational trust; Medication error reporting; Emergency department

Medical errors climbed from the eighth to the third leading cause of death in the United States.<sup>1</sup> Medication errors are one of the most frequently occurring errors in health care settings.<sup>2</sup> The ED work flow, characterized by fragmented information, diverse

patient acuity levels, frequent interruption, time pressure, and a crowded environment, is believed to increase the likelihood of medication errors.<sup>3-5</sup> In addition, more than 210 million medications are administered in the emergency department annually, placing the emergency department as one of the highest risk areas for the occurrence of medication errors.<sup>6</sup> Medication errors occur in approximately 1 of every 4 medication administrations, and 60% of ED patients experience medication errors.<sup>3</sup> Fortunately, not all ED medication errors are harmful, and some are caught before medications are administered to patients.<sup>3,5,7</sup> A small percentage of errors (0.6%) result in severe patient harm and death.<sup>3,5,7</sup>

Emergency nurses are in a crucial position for intercepting and reporting errors. Most hospitals rely on nurses' voluntary error reporting to capture errors and to assess both human and system failures contributing to errors. Medication error reporting is a voluntary activity that could help hospitals' safety and quality officers to understand root causes and recommend measures for preventing similar errors from happening in the future.<sup>2,5,8</sup> Unfortunately, although serious medication errors are usually reported, minor errors and near-misses often are not reported.<sup>8</sup> Failure to report minor errors and

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TABLE 1

**Definitions of the study concepts and variables and examples for the survey items**

Variable	Definition	Sample items
Leadership styles		
Transformational	Is a leadership style in which the leader aims at achieving long term organizational and individual change Transformation leader is people oriented and motivates and inspires staff to exceed their abilities <sup>27</sup>	“Instills pride in me for being associated with him/her” “Seeks differing perspectives when solving problems”
Transactional	Is a leadership style in which the manager clarifies the goals, the desired outcomes, the requirements to reach the goals, and the conditions for receiving a reward <sup>27</sup>	“Discusses in specific terms who is responsible for achieving performance targets” “Makes clear what one can expect to receive when performance goals are achieved”
Safety culture	Shared values, beliefs, and attitudes about safety among staff <sup>12</sup>	N/A
Safety climate		
Managers actions supporting safety	Staff perception about policies, procedures, and safety priorities within an organization/unit; it represents a more concrete layer of safety culture <sup>12,13</sup> The extent to which a manager considers staff suggestions to improve safety and reward staff safety actions <sup>30</sup>	“My unit manager says a good word when he/she sees a job done according to established patient safety procedures”
Team work	The extent to which staff supports each other and work together as a team <sup>30</sup>	“When a lot of work needs to be done quickly, we work together as a team to get the work done”
Communication openness	The extent to which the staff can speak freely and question authority if they encountered something that could harm patients <sup>30</sup>	“Staff will freely speak up if they see something that may negatively affect the patient care”
Error feedback and communication about errors	The extent to which staff receives feedback about errors and discuss actions to prevent further errors <sup>30</sup>	“We are given feedback about changes put into place based on event reports”
Organizational learning	The extent to which errors are used to initiate positive changes <sup>30</sup>	“After we make changes to improve patient safety, we evaluate their effectiveness”
Nonpunitive response to errors	The extent to which staff feel that errors will not be used against them <sup>30</sup>	“Staff feel like their mistakes are held against them”
Social capital		
Warmth and belonging	Social capital as a construct could be loosely defined as a set of structured interactions and trusting relationships among staff members that could influence organizational social and economic outcomes <sup>17,18</sup> ; for the purpose of our study, it was captured through the 2 concepts of warmth and belonging and organizational trust; Warmth and belonging is the degree of cohesion, pride, and harmony among staff members <sup>19</sup>	“A friendly atmosphere prevails among the people in this unit” “As far as I can see, there is much personal loyalty to this unit”
Organizational trust	Is the individual’s willingness to put himself/herself in a vulnerable position in front of another person (in our study, managers and peers) with a confidence that the other person will act in a positive way	Trust in peers: “If I got into difficulties on my work, I know my peers/colleagues would try to help me out” Trust in managers: “My nurse manager is sincere in his/her attempts to meet our point of view”

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