The Moderating Effects of Attitudes on Nurses’ Intentions to Report Impaired Practice

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Nurses compose the largest segment of employees in the U.S. health care industry. Nurses whose professional functioning is impaired because of substance abuse represent a threat to the health and safety of patients, other health care staff, and themselves. Attitudes toward substance use have been studied in relation to nurses’ intentions (decisions) to report impaired colleagues. Whether, and to what extent, these attitudes may interact with the characteristics of the “offense” to influence intentions to report impaired practice is unknown. In this article we analyze intentions to report a variety of impaired nursing practice scenarios, obtained using a policy-capturing method, to determine the extent to which attitudes held by the “reporter” influence intentions by moderating the effects of the offense characteristics. Intention data from a sample of 120 nurses were modeled using hierarchical techniques to test the moderating hypothesis. Evidence for the moderating effects of attitudes is discussed.

Many instances of nurses practicing while under the influence of drugs or alcohol are not reported. Characteristics of the “offense” and characteristics of the “reporter” both may play a role. These two sets of characteristics may interact to have an effect on the reporter’s decision to report the offense. The relative influence of situational factors may change in relation to the attitudes toward substance abuse held by the reporter. Stated in general psychological terms, responder characteristics moderate stimulus characteristics to affect the response produced.

The response we wish to study is the actual reporting of the offense (impaired practice). However, because of ethical and practical constraints that exist in experimental settings, we are left only with opportunities to study the responder’s intention to report the offense. Intention refers to one’s determination to perform certain activities or to bring about a certain future state of affairs. This article focuses on how these two sets of characteristics combine to influence intentions to report impaired nursing practice.

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Nurses whose professional functioning is impaired as a result of substance abuse represent a threat to the health and safety of patients, other health care staff, and themselves (Beckstead, 2002). Nurses compose the largest segment of employees in the U.S. health care industry, an estimated 2.2 million jobs in 2000 (Bureau of Labor Statistics, 2002). The U.S. Department of Health and Human Services (1990) projected a shortage of 600,000 nurses in the industry by the year 2005. As a consequence, programs that identify, treat, and bolster impaired nurses in the workforce have been developed (for review, see Lippman, 1992). In order for such programs to be successful, impaired nurses must first be identified and second enrolled in effective rehabilitation programs. The major resource available to hospitals and other health care organizations for identifying impaired nurses is non-impaired coworkers. Damrosch and Scholler-Jaquish (1993) found that only 37% of nurses who had experience working with impaired colleagues reported these offenses to supervisors.

Some offenses may be more common than others, based on the type of substance involved (e.g., alcohol, marijuana, narcotics). Some offenses may be more egregious than others in terms of their effect on patient health and safety. Repeat offenders may be seen as more of a danger to patients than first-time offenders. By studying intentions, it may be possible to predict which types of offense are more (or less) likely to be reported and why.

**Purpose of the Present Study**

Attitudes toward substance use and impaired nurses have been studied in relation to nurses’ intention to report impaired colleagues (Beckstead, 2002). Whether and to what extent these attitudes may interact with the characteristics of the offense to influence intention to report impaired practice is unknown. The purpose of the present investigation is to examine intention to report impaired nursing practice (a) to discover the relative influence of the offense characteristics (type of substance involved, whether it was used at work or off duty, degree of technical incompetence of the offender—i.e., had the offender made any medication errors in the past), and (b) to determine the extent to which characteristics of the reporter (i.e., attitudes toward substance use) influence intention by moderating these offense characteristics.

**Theoretical Framework**

Nurses hold various attitudes toward substance use, abuse, and impaired nursing practice (Beckstead, 2002; Cannon & Brown, 1988; Coleman et al., 1997; Hendrix, Sabritt, McDaniel, & Field, 1987). Beckstead (2002) examined four related yet distinct attitudes: permissiveness toward substance use, moralistic attitude toward substance use, treatment optimism regarding substance use, and
punitive attitude toward impaired nurses. Permissiveness toward substance use was found to be the strongest predictor of intention to report an impaired nurse. Moralistic attitude toward substance use (moralism) had no relationship to intention.

It is well documented in psychological experiments that individuals holding more extreme attitudes toward an object (i.e., a person or behavior) tend to accentuate the differences between classes of such objects and to accentuate the similarities within classes more so than do individuals holding more moderate attitudes (for reviews, see Hamilton, 1968; Haslam & Turner, 1995; McGarty & Penny, 1988). This type of interaction effect has become known as the accentuation effect. Accentuation theory (AT) has been proposed to address how individuals construct their own standards and frames of reference when they form impressions of other people or events (Eiser, 1971, 1990; Eiser & Stroebe, 1972). Of specific interest, AT addresses how these impressions are affected by the emotional or attitudinal reactions toward the people or events being judged.

Beckstead (2003) demonstrated that individuals can simultaneously contrast and assimilate negative characteristics of a fictitious target person within the same social judgment task as a function of attitudes toward specific target characteristics. Nurse subjects showed a partial accentuation effect when asked to make social judgments regarding the degree of impairment experienced by fictitious coworkers described in terms of the type of substance involved, their degree of technical incompetence, and the presence of depressive symptoms. Nurses with less permissive attitudes toward substance use emphasized information about drug use and de-emphasized information on technical incompetence. Nurses with more permissive attitudes toward substance use showed the reverse pattern, as they formed impressions of how impaired a hypothetical coworker was. Considering AT and its applicability to the problem at hand led to the following hypothesis: The characteristics of an instance of impaired nursing practice (an offense) will evoke evaluative reactions from potential reporters. These evaluative reactions will moderate the influence of such characteristics as they are integrated in the reporter’s mind during the formation of intention to report the offense.

The present article examines intention to report various instances of impaired nursing practice in an experimental setting. Evaluative reactions (i.e., attitudes) toward substance use were measured to determine the extent to which they moderated the contributions of offense characteristics in the formation of intentions. Several offense scenarios were devised by assembling combinations of characteristics: type of substance involved, whether it was used at work or off duty, and degree of technical incompetence of the offender (i.e., number of medication errors made in the past). By presenting these characteristics in a factorial design, it was possible to obtain estimates of their independent contributions to resulting intentions.
Hierarchical Modeling

The hypothesized relationships among offense characteristics and reporter characteristics may be described as hierarchical in nature. That is, several instances of impaired practice may be presented to a reporter who rates his or her intention to report each offense. Several responses are thus obtained from each reporter. Numerous reporters may be asked to provide responses. In this way, responses are said to be “nested” within reporters.

It is possible to compute a regression equation for each reporter that relates his or her responses to the characteristics of the offenses. Thus, each reporter has a unique set of regression coefficients (parameters) relating offense characteristics to his or her reporting intentions. These parameters may show random variation as a result of individual differences among reporters. By modeling the variance in these parameters as a function of attitudes toward substance abuse, it is possible to test hypotheses about the moderating effects of attitude variables on intentions.

Method

Participants

Registered nurses and nursing students \((N = 120; 113 \text{ female}, 7 \text{ male})\) attending a major university in west central Florida volunteered to take part in the experiment. Participants were recruited via announcements posted in classrooms. Each participant received $20 for participating. The mean age was 32.8 years \((SD = 9.8)\). For ethnicity, 79.0% were Caucasian, 9.2% were Hispanic, 5.8% were African American, 5.0% were Asian, and 1.0% did not specify their ethnic background. For education, 49.0% had a bachelor’s degree, 36.7% had an associate’s degree, 8.3% had a master’s degree, 3.3% had a doctoral degree, 2.5% had a diploma degree in nursing, and 1.2% did not specify their highest educational level. Of the participants, 39 were nursing students completing their final semester in a 4-year BSN program during which each had accrued a minimum of 900 hours of experience working in clinical settings. Of the participants, 81 were registered nurses with an average of 10.3 years of experience working as a nurse \((SD = 8.0)\).

Design

This investigation employed an experimental design with repeated measures. Each participant was tested under all experimental conditions. The approach used is often referred to as policy capturing and involves asking each participant to judge a series of scenarios or profiles constructed of various explanatory factors or cues and then regresses their responses onto the cues. The purpose of this
method is to capture individuals’ decision-making policies; in other words, how they “weight, combine, or integrate information” (Zedeck, 1977, p. 51).

Materials

Offense scenarios. The stimuli used in the current study consist of 24 scenarios describing the characteristics of an instance of impaired nursing practice. The scenarios were devised using a factorial design to combine the characteristics: type of substance involved, whether it was used at work or off duty, and degree of technical incompetence of the offender. These variables and the values chosen to define them operationally were empirically based and selected for their realism and generalizability.

The four levels of substance use were “smokes marijuana,” “drinks alcohol,” “uses narcotics,” and “does not use any substances.” Use of these substances was described as occurring either while at work or only while off duty. The decision to use these particular substances in constructing the stimulus scenarios was based on their generalizability as determined by prevalence estimates in the population. Trinkoff and Storr (1994, 1998) found that 92% of employed nurses had used alcohol at least once in their lifetime; 54% reported having had more than five drinks on at least one occasion, with 19% reporting such use in the past year. Marijuana was smoked on at least one occasion by 41% of employed nurses, and 3.6% reported using it in the past year. The lifetime prevalence of prescription-type narcotics among employed nurses was 34.3%, and the annual prevalence was 6.8%.

Technical incompetence was operationalized by specifying the extent to which the hypothetical offender had a history of making medication errors. Berens (2000) reported that medication errors made by nurses (e.g., giving the wrong medication, giving an incorrect dose) have resulted in death or injury to over 10,000 hospital patients in the United States since 1995.

There are so many situation- and patient-specific medications in use that it was impossible to select a general class of medications with reasonable ecological validity. Instead, the technical incompetence characteristic was defined by simply describing the offender in one of three ways: “has made one medication error,” “has made more than one medication error,” or “has never made a medication error.” Although nurses may attribute different severities to medication errors depending on their work experiences, the ordinal relationships among the three levels of this variable are quite likely to be maintained within individuals. An example of one of the offense scenarios is “a nurse who smokes marijuana only while off duty and has made more than one medication error.” Each scenario was typed and transferred to a black-on-white 35 mm slide for presentation.

Ratings of intention, or the likelihood of reporting a scenario, were made using an 11-point scale ranging from 0 to 10 with dual sets of anchors. Verbal
anchors not at all, probably not, doubtful, probably, definitely, and undeniably were centered under the numerals 0, 2, 4, 6, 8, and 10, respectively. Also, percentages (0% likely, 20% likely, 40% likely, 60% likely, 80% likely, and 100% likely) were anchored under the same numerals accordingly. The instruction “Rate how likely you would be to report such a person to a supervisor” appeared at the top of each answer sheet.

**Attitude measurements.** Attitudes toward substance abuse were measured using the Substance Abuse Attitude Survey (SAAS; Chappel, Veach, & Krug, 1985), that was developed to assess attitudes among clinicians (physicians, nurses, psychologists, and social workers) toward various aspects of alcohol and drug abuse. The aforementioned authors developed the 50-item SAAS from an original pool of 153 Likert-type items. Factor analysis, using samples of 268 clinicians and 312 nonclinicians, indicated the presence of three stable factors that are labeled Permissiveness, Moralism, and Treatment Optimism.

Jenkins, Fisher, and Applegate (1990) re-examined the factor structure underlying the SAAS (Chappel et al., 1985) and provided additional data on its psychometric properties. Applying the scree method to data from over 500 college students, three coherent factors emerged and 11 items were discarded that did not load significantly on the resulting factors, also labeled Permissiveness, Moralism, and Treatment Optimism. Internal consistency estimates of reliability were .78, .75, and .74 for the permissiveness, moralism, and treatment optimism subscales, respectively.

The refined 39-item version of the SAAS has been used successfully to measure attitudes held by nurses in relation to their decisions to report impaired colleagues (Beckstead, 2002). In this context, the SAAS showed comparable internal consistency reliability estimates of .76, .77, and .71 for the permissiveness, moralism, and treatment optimism subscales, respectively.

The permissive–restrictive dimension was found to be the most strongly related to intention. Consequently, only the permissiveness subscale was used in the present study. Sample items from this scale are “Marijuana should be legalized,” “Personal use of drugs should be legal in the confines of one’s own home,” and “Alcohol is an effective social relaxant.” Participants responded to attitude items using an 11-point scale with the verbal anchors strongly disagree, moderately disagree, and slightly disagree centered under the numerals -5, -3, and -1, respectively, and the anchors slightly agree, moderately agree, and strongly agree centered under the numerals 1, 3, and 5, respectively.

**Procedure**

To control for primacy and recency effects within each offense scenario that could produce unequal attention to information as a result of its placement within each description, three forms of each scenario were used. The order of
information regarding type of substance, use while at work or off duty, and technical incompetence was varied systematically so that each characteristic appeared at the beginning, middle, and end of each unique combination. In this way, the syntax or placement of the characteristics within each description was counterbalanced. Counterbalancing was used also to control for the effects of fatigue, which could cause the participant to become less attentive toward scenarios presented later in the sequence. This was accomplished by reversing the original randomized sequence of descriptions. The combination of these two counterbalancing strategies resulted in six unique sets of stimulus materials.

Participants were tested in small groups in classrooms. Each group received one of the six sets of stimuli in the counterbalanced design. Standardized instructions, describing the purpose of the study and the nature of the task, were provided and read aloud to all participants. The stimulus slides were projected onto a screen using a Kodak Ektagnostic III projector equipped with a programmable timer. To equate the time available for cognitive processing across all stimuli, each stimulus was presented for 15 s with a 1-s interstimulus interval. Participants then completed the Permissive Attitude Toward Substance Use subscale and demographic questions. The entire procedure took approximately 1 hr.

Results

Overview

The data were analyzed using hierarchical linear modeling (HLM) techniques. The HLM approach allows researchers to formulate explicit multilevel models with hypotheses about effects occurring at each level and across levels. Data structures of the type investigated here may be considered hierarchical in the sense that intentions (responses) are nested within the same individual, while between-individual differences (attitudes) are hypothesized to affect the pattern of within-individual responses. Bryk and Raudenbush (2002) proposed methods for modeling such data structures.

Each reporter’s set of responses to the offense scenarios was represented by an individual linear model (i.e., Level 1 model) that depended on a unique set of six parameters corresponding to the dummy-coded offense characteristics described earlier. These individual parameters were treated as the outcome variables in a Level 2 model, where they were regressed onto a vector of reporter-level characteristics (attitudes). The six parameters were modeled as a function of the reporter attitudes weighted by a vector of Level 2 structural coefficients.

Data were analyzed using HLM software HLM5.2 (Raudenbush, Bryk, Cheong, & Congdon, 2000). This allowed for the modeling of the two-level data structure described earlier. A full maximum likelihood approach to parameter estimation was used. Under quite general assumptions, these estimates are
consistent and asymptotically efficient. Level 1 error terms were assumed to be
independently and normally distributed with a mean of 0 and a variance of $\sigma^2$.
Tests of significance for the presence of random variation in Level 1 coefficients
were conducted using chi-square likelihood ratio tests. Likelihood ratio tests
were used also to compare the deviance values (-2 times the value of the log-like-
lihood function) of nested models to assess improvements in model fit.

Modeling was done in three steps. First, total variation in intention was parti-
tioned into within- and between-individual components. Second, the within-
individual variance in intention was modeled as a function of the offense charac-
teristics. Finally, variation in the Level 1 regression coefficients relating intention
to the offense characteristics was modeled as a function of between-individual
differences in attitude. The analyses are described subsequently.

Preliminary Analysis

Prior to hypothesis testing, the data were screened for univariate outliers by
examining the frequency distributions of all variables. The internal consistency
reliability of the permissiveness measure was estimated at .79 ($M = -1.98$, $SD = 1.62$). The demographic variables age, education, and years of experience work-
ing as a nurse were not correl ated with atti tude scores ($r$s ranged from .029 to
-.062). Nor were these demographic variables systematically related to ratings of
intentions.

The fully unconditional model, anal ogous to a one-way ANOVA with ran-
dom effects, was estimated as a prelimin ary step to provid e information about
response variability at each of the two levels. The deviance value for this three-
parameter model was 13,944.60. The unconditional model partitioned the total
variance in intention ratings into two components that may be expressed as pro-
portions.

Thus, 3.4% of the variance in intentions was a result of between-individual
differences, and 96.6% was a result of the experimental manipulation of the
offense characteristics plus exogenous factors. The latter source of pooled
within-individual variance is referred to as Level 1 variance and is the focus of
subsequent modeling.

Hypothesis Testing

Pooled within-individual variance in intention was modeled as a function of
offense characteristics. The model is said to be unconditional at Level 2. The
Level 1 variance component in this model was reduced by over 83% relative to
the unconditional model. This reflects the joint effects of the experimental
manipulation of the offense characteristics. The deviance value for this 28-
parameter model was 10,053.03.
The likelihood ratio test comparing this model to the fully unconditional model was $\chi^2(25) = 3,891.57$, $p < .001$, indicating a significant improvement in fit of the model to the data. The parameter estimates for the various offense characteristics are provided in Table 1. These estimates are the Level 1 regression coefficients averaged over all individuals. Based on these estimates, intention to report narcotics use was stronger than intention to report the use of marijuana or alcohol. Intention to report an instance of impaired nursing practice was significantly increased if the offender had a history of making any medication errors. The intention to report was most strongly influenced by whether substance use occurred while at work or while off duty. The six Level 1 coefficients all show significant variation across reporters ($p < .001$). Modeling this variance as a function of attitude scores is the focus of subsequent analysis.

The final model tested the hypothesis that attitude toward substance use moderates the influence of offense characteristics during the formation of intentions. This model is said to be conditional on the Level 2 attitude scores. The addition
of permissive attitude scores significantly improved the fit of the model by accounting for variation in Level 1 parameters. The deviance value for this 34-parameter model was 10,025.06. The likelihood ratio test comparing this model to the unconditional Level 2 model was \( \chi^2(6) = 27.97, p < .001 \). The Level 2 coefficients, reflecting the amount of change in each Level 1 coefficient when permissive attitude toward substance use is increased by one unit, are shown in Table 1. Attitude significantly altered the contributions of the type of substance involved and whether the substance was used while at work. The influences of the technical incompetence characteristics were not modified significantly by attitude.

Figure 1 shows the moderating effects of permissive attitude on the various offense characteristics. As expected, reporters with more permissive attitudes deemphasized information about the type of substance characteristic (i.e., they had smaller parameter estimates associated with use of the three types of substances) compared to their more restrictive counterparts. Rather unexpected was the inverse effect of permissive attitude on the characteristic use-while-at-work; more permissive reporters emphasized this information, compared to their more restrictive counterparts. The relative influence of these characteristics changed significantly from one reporter to another.

In other words, on the basis of permissiveness, individuals arrived at similar intentions but for different reasons. To illustrate, consider two individuals, each a standard deviation (1.620) from the mean on the permissiveness dimension, but in opposite directions. Both were asked to rate their intention to report “a nurse who has made no medication errors and uses narcotics while at work.” Using the parameter estimates from Table 1, it is possible to show that the more permissive reporter arrived at an intention rating of 8.921 by the following calculation:

\[
[3.489 + (1.62 \times -0.392)] + [5.531 + (1.62 \times 0.331)],
\]

and the more restrictive reporter a rating of 9.119 by the following calculation:

\[
[3.489 + (-1.62 \times -0.392)] + [5.531 + (-1.62 \times 0.331)].
\]

For the more permissive reporter, the contribution of “uses narcotics” was 2.854 and that of “while at work” was 6.067. For the more restrictive reporter, the contribution of “uses narcotics” was 4.124 and that of “while at work” was only 4.995.

**Discussion**

The results reported demonstrate that attitudinal factors can moderate the influence of various situational characteristics during the formation of intentions. Specifically, characteristics describing an instance of impaired nursing practice
were moderated by individual differences in nurse subjects’ attitudes toward substance use as they formed intentions to report hypothetical instances of impaired practice. By analyzing responses to characteristics that were presented in a factorial design, it was possible to obtain estimates of the independent contributions of each characteristic. The characteristic “uses narcotics” increased ratings of intention by 3.49 points on the rating scale. Likewise, “smokes marijuana” increased ratings of intention by 2.85 points, and “drinks alcohol” increased intention ratings by 2.06 points. It is interesting to note that the relative strength of these intentions appeared to parallel conventional stereotypes regarding the psychotropic properties of the substances. Also interesting, nurses were least intent on reporting alcohol use, despite its lifetime prevalence (92%) being so much higher than that of marijuana (41%) or prescription-type narcotics (34%; Trinkoff & Storr, 1994, 1998). Although nurses may be more intent on reporting someone impaired by narcotics (or marijuana for that matter), the fact that such cases are relatively rare when compared to cases involving alcohol use suggests that good intentions may be being squandered or diluted. Educational efforts to increase the reporting of impaired practice may be placing a disproportionate emphasis on reporting illicit substances given that existing intentions to report these are relatively strong.

This investigation used HLM rather than traditional multiple regression in order to test multilevel hypotheses. Traditional multiple regression and
correlation methods are limited in their ability to model hierarchical structures. These limitations have generated concerns that center on aggregation bias, misestimated precision, and heterogeneity of regression coefficients. Aggregation bias can occur when a variable takes on different meanings and therefore may have different effects at different levels. HLM resolved this problem by decomposing any observed relationship between variables into separate Level 1 and Level 2 components. Thus, it was possible to represent the interaction between offense characteristics (Level 1 variables) and permissive attitude (Level 2 variable) on intentions.

Misestimated standard errors occur with multilevel data when we fail to take into account the dependence among responses within the same individual. HLM resolved this problem by incorporating into the statistical model a unique random effect for each reporter. The variability in these random effects was taken into account when estimating the standard errors of the offense characteristic and attitude variables. Heterogeneity of regression occurs when the relationships between stimuli and responses vary across individuals. It is precisely this heterogeneity of regression coefficients relating offense characteristics to intention responses that was the focus of the current investigation. The HLM approach employed maximum likelihood estimators to model this variation as a function of between-individual differences in attitude, thereby maintaining appropriate estimates for standard errors and preventing inflated Type I errors that could have occurred simply because of chance differences in the ordinary least squares slope estimates.

Attitude toward substance use was shown to influence intention to report instances of impaired nursing practice by moderating the effects of offense characteristics. Nurses with more permissive attitudes put less emphasis on the types of substances involved, while nurses with less permissive attitudes placed greater emphasis on this characteristic of the offense.

The offense characteristic “use while at work” versus “use only while off-duty” showed an unexpected interaction with attitude toward substance use. Nurses with more permissive attitudes placed greater emphasis on this characteristic when forming intentions. One interpretation of this inverse interaction is that some nurses, who themselves use (or may have used) substances for recreational purposes, are especially critical of irresponsible indulgence, and consequently may prove to be a considerable asset for identifying and reporting instances of impaired practice. Educational program designers and policymakers need to acknowledge this key point as they consider ways to increase reporting rates. Perhaps their message ought to be that it is the irresponsible use of these substances that needs to be monitored and reported. Based on the moderating effects demonstrated here, this message content might prove more effective because it appeals to a greater number of potential reporters by covering a broader range of attitude toward substance use.
The current findings may be considered in conjunction with previous work on the accentuation effect of nurses’ attitudes. Beckstead (2003) demonstrated that individuals can simultaneously contrast and assimilate negative characteristics of a fictitious target person within the same social judgment task as a function of attitudes toward specific target characteristics. Nurses judged the degree of impairment experienced by fictitious coworkers described in terms of the type of substance involved, their degree of technical incompetence, and the presence of depressive symptoms. Nurses with more permissive attitudes toward substance use de-emphasized information about type of drug use and emphasized information on technical incompetence. More restrictive nurses showed the reverse pattern. Forming an impression of another person requires the individual to consider the behavior and characteristics of the other person in relation to his or her own behavior and indirectly infer a psychological state (i.e., a feeling or motive) to the other person. Social judgment tasks require the individual to consider information about another person and to infer a psychological state to the person (e.g., “Rate how impaired you believe the person in each description is”).

If the cognitive process were to be narrated, it might go something like this: “If I were engaging in that behavior, I know how I would feel. That person must feel as I would.” In the case of attitude toward substance use and social judgment of impairment, more permissive persons who may have experiences involving recreational substance use might make use of the technical incompetence information when forming their judgment: “If I had smoked enough marijuana to cause me to make medication errors, I know how impaired I would have to be. That person has made errors and is therefore as impaired as I know I would be.” Whereas, more restrictive persons, who may not have experiences with such substances may have no use for additional information: “I do not smoke marijuana because it makes one impaired. That person smoked marijuana; therefore, he or she is impaired.”

In both the current and previous (Beckstead, 2003) investigations, similar interaction effects were observed regarding the type of substance characteristic. Individuals with more permissive attitudes put less emphasis on the type of substance involved in the scenarios. However, in the current study, permissive attitudes toward substance use did not interact with the technical incompetence characteristic as observed in the previous study. One possible explanation is that the two studies employed converging experimental tasks that involved similar psychological processes but different sets of stimuli. In the previous study, the more permissive individual may have found the additional information about technical incompetence to be more useful than information about depression for differentiating among substance users. With regard to the task in the current study, the additional information about where substance use occurred may have been more useful than information about technical incompetence to the
more permissive individuals as they differentiated among instances of impaired practice.

Limitations

Some limitations should be kept in mind when considering the results reported. First, the data were collected in a controlled experimental setting and obtained from self-reports. Consequently, these data may reflect bias in reporting certain attitudes and intentions. It is also quite possible that actual reporting behaviors that take place in real-life settings are affected by other factors not examined in this study. For example, social norms and the particular organizational culture in which nurses work are likely to influence actual reporting behavior. The advantage of the approach used here is that it allowed for the systematic manipulation of situational characteristics routinely seen in actual cases of impaired practice to examine how they combine during intention formation. The offense characteristics examined here were selected for their ecological validity. However, as with any controlled experiment, generalizations to nonexperimental settings should be made with caution.

Second, as with any experimental procedure, the policy-capturing method used here has its limitations. The use of hypothetical scenarios to examine intention or decision formation can compromise the external validity of a study unless care is taken to ensure that the variables included are salient to the respondents and that the variable levels and combinations are representative of those observed in the respondent’s environment (Karren & Barringer, 2002). In the present study, the choice of variables and variable levels was based on their prevalence in the nurse subjects’ work environment. Policy-capturing methods are characterized by an inherent challenge: balancing the number of variables that can be studied (or the number of levels at which the variables are measured) with the number of scenarios that respondents must read. Statistically, the number of scenarios must be large enough to permit generation of stable regression estimates while at the same time be small enough that the individual can cope with the task. Based on a review of studies that used policy-capturing methods, Cooksey (1996) suggested that the cognitive limitations of most individuals are such that the upper limit for the number of scenarios should be set between 80 and 90, depending on the number of cues involved.

Third, the convenience sample was of moderate size and limited to only one region of the United States (Florida). Therefore, the findings should not be considered representative of the entire country. Fourth, the effects of omitted variables (e.g., personality traits, knowledge regarding substance abuse treatment, experience with substance abuse) are unpredictable. Their absence could lead to misleading conclusions with regard to the effects of the variables examined. Unfortunately, it is not known whether or not nurses in the study had
themselves used illicit substances. As part of the recruitment process, potential participants were told explicitly that they would not be questioned about their own past behaviors. It was assumed that asking for this information would produce a selection bias in the sample and that the veracity of responses to such a line of questioning would be tenuous at best. While the findings do provide some insight into how attitudes moderate the formation of intentions to report various instances of impaired nursing practice, their value must be weighed and taken in context.

Directions for Future Research

Future studies of the accentuation effect of attitude need to focus on the following questions: (a) Why does attitude moderate some stimulus characteristics but not others? Manipulating the utility of characteristics for differentiating among members of social in-groups may provide better understanding of this phenomenon. (b) Why does a permissive attitude toward substance use increase the emphasis placed on the use-while-at-work characteristic in particular? (c) Is there further support for the irresponsible use interpretation offered here?

Social norms and organizational culture are also important in understanding the reporting behavior of nurses and could be studied in the future. For example, the presence of an employee assistance program (EAP) in a hospital or health maintenance organization might explain some reporting behavior. Whether the EAP is internal or external is another potential factor. Likewise, the workgroup social norm for drinking (Do members of the workgroup drink socially?) may contribute to the social pressures influencing reporting behavior. Other sources of organizational culture influencing reporting behavior may include the perceived attitude of unit supervisors or administrators. These factors could be examined in consort with characteristics of the offense and the reporter.

The current study provided estimates of the relative magnitude of the offense characteristics—type of substance involved, whether it was used at work or off duty, and offender’s degree of technical incompetence—as they influenced intention to report instances of impaired nursing practice. These estimates, in combination with prevalence estimates of substance use, may be used to design more effective efforts to increase reporting rates. In general psychological terms, this study provides evidence that attitudes influence intentions by moderating the effects of stimulus characteristics.

Through better understanding of how nurses’ attitudes affect their intentions to report, corrective administrative policies and educational programs could be developed to motivate nurses who are less likely to report their impaired colleagues. This, in turn, could be a major step in reducing the rates of impaired practice and medication errors in the United States today.
References


