Original Article

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Personal Factors as Correlates and Predictors of Relapse in Nurses With Impaired Practice

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Relapse is the unauthorized use of any mind-altering substance, prescribed or not, after an individual has entered treatment for substance use (Darbro, 2011). Among nurses with impaired practice, the 5-year relapse rate is estimated at about 40% (Zhong, Kenward, Sheets, Doherty, & Gross, 2009), and the risk of relapse is highest in the first year of recovery (Clark & Farnsworth, 2006). Many factors influence susceptibility to relapse among nurses including presence of psychiatric comorbidities (Schellekens, de Jong, Buitelaar, & Verkes, 2015), history of criminal background (Zhong et al., 2009), spirituality and religiosity (Allen & Lo, 2010), and receiving prelicensure education in the United States (Waneka, Spetz, & Keane, 2011). The purpose of this study was to examine the correlates and predictors of relapse among nurses and to establish at what point they are most susceptible to relapse. This study was a retrospective secondary data analysis of nurses in Texas with impaired practice. The total number of participants was 1,553. The time it takes participants to enroll in a peer assistance program is negatively associated with length in program ($p < .001$). Conversely, there is a strong, positive, significant relationship between the number of days abstinent and the length in program ($p < .001$). More men compared with women ($p = .037$) were likely to be employed while participating in the program. Finally, participants who were referred for substance use disorders alone had 55% less risk of relapse. Those who used alcohol as their primary drug of choice had 1.7 times higher risk of relapse.

Keywords: Addictions, Correlates of Relapse, Impaired Practice, Nurses, Predictors of Relapse, Substance Use Disorders

INTRODUCTION

Relapse is the unauthorized use of any mind-altering substance, including alcohol and other medications, prescribed or not, after an individual has entered treatment for substance abuse (Darbro, 2011). According to the Substance Abuse and Mental Health Services Administration (2016), annually, 93%–97% of people who try to quit abusing drugs fail and about 1.5 million people who need mental health services do not access the care they need. Among nurses with impaired practice, the 5-year relapse rate is estimated at about 40% (Zhong, Kenward, Sheets, Doherty, & Gross, 2009), and the risk of relapse is highest in the first year of recovery (Clark & Farnsworth, 2006). This is partly because of the fact that most nurses in recovery are unemployed, hence finding themselves needing to return to work because of the financial and economic burden of going through alternative programs (Fogger & McGuinness, 2009). In fact, nurses with impaired practice have to bear most of the cost of recovery including costs associated with the required random drug screen test (Texas Peer Assistance Program for Nurses [TPAPN], 2016). Insurance companies minimally covering mental health and substance-use-related costs have further exacerbated this problem for individuals who experience substance use disorders (SUDs) and other mental health conditions while going through a treatment program (Substance Abuse and Mental Health Services Administration, 2016).

Relapse rates among nurses with impaired practice can be decreased further. We know that this may be possible because their physician counterparts have historically shown better outcomes when going through chemical dependency monitoring programs (Carinci & Christo, 2009). Physicians have a 20% 5-year recidivism rates (Carinci & Christo, 2009) as opposed to the 40% among nurses (Zhong et al., 2009). In addition, physicians return to work sooner than nurses do and have fewer work-related sanctions on their licenses upon return to work (Shaw, McGovern, Angres, & Rawal, 2004). This facilitates easier reincorporation into the workforce. When considering psychological health and relational functioning, physicians in monitoring programs also report less

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psychosocial dysfunction compared with nurses (Shaw et al., 2004). The differences in outcomes between these two professions are areas for possible future research, specifically understanding the differences in the organization, implementation, and restrictions of these different monitoring programs. Understanding factors that contribute to relapse and poor outcomes among nurses with impaired practice is important, especially because nearly one in 10 nurses experience impaired practice (Kunyk, 2015).

Although few studies have examined protective factors for substance use and relapse among nurses, all factors that promote compliance in substance use monitoring programs, such as random drug screens, restrictions placed on licenses, and attendance at 12-step programs, may be all considered protective factors (Darbro & Malliarakis, 2012). Nurses with impaired practice understand that violation of these factors can be detrimental, resulting in loss of licensure as well as problems with the criminal justice system (Darbro & Malliarakis, 2012). Even so, some nurses still fall prey to relapse in treatment and monitoring programs. Some experts have recommended that actively participating in monitoring programs such as TPAPN for extended periods improves one's chances of recovery because of the continued support and monitoring available in these programs (Clark & Farnsworth, 2006; Darbro, 2011). Therefore, most monitoring programs require about 2 years of participation (Clark & Farnsworth, 2006; TPAPN, 2016).

Factors Associated With Relapse

In a study by Tipton (2006) that examined predictors of relapse among nurses with impaired practice in TPAPN, several factors were identified. Participants in inpatient treatments for substance use were at four times higher risk for relapse compared with those in outpatient treatment. Those participants who did not comply with self-help programs were also at a significantly higher risk of relapse than those who complied. In addition, being assigned an advocate within the first 2 months of admission into the peer assistance program significantly reduced the odds of relapse. Tipton, however, found no significant difference in the odds for relapse between those participants who live in rural versus urban settings.

The relationship between psychiatric comorbidities and SUD has been studied extensively. Psychiatric comorbidities not only increase the risk of substance use but also increase the risk of relapse in individuals experiencing SUD (National Institute on Drug Abuse, 2016; Schellekens, de Jong, Buitelaar, & Verkes, 2015; Tipton, 2006). Snow (2015) explains that the treatment of mental health disorders co-occurring with substance use is a delicate balance but one that is necessary to improve outcomes in this population. This is particularly important when 35% of medical–surgical nurses working in hospitals show significant depressive symptomology (Welsh, 2009) and about 18% of the nursing workforce are exhibiting symptoms of major depressive disorder (Letvak, Ruhm, & Gupta, 2012). These findings are concerning because the risk of relapse doubles in people with comorbid psychiatric disorders such as depression and anxiety (Schellekens et al., 2015) and because of the increase in the prevalence of SUD among nurses working in medical–surgical units, long-term care facilities, and outpatient centers (Mumba, 2016).

In addition, about 50% of nurses in TPAPN report the presence of a psychiatric comorbidity (Tipton, 2006), necessitating healthcare policies that address effective treatment of comorbid psychiatric disorders among nurses with impaired practice. For example, as stated earlier, a significant number of medical–surgical nurses and the nursing workforce in general exhibit depressive symptomology (Letvak et al., 2012; Welsh, 2009). Other psychiatric comorbidities other than mood disorders also affect relapse among individuals with SUD. For instance, antisocial personality disorder, another comorbid psychiatric disorder, is a significant predictor of relapse 2 years after treatment of substance abuse in a diverse population of healthcare providers (Angres, Bologeorges, & Chou, 2013).

Factors such as spirituality and religiosity are also associated with substance use and relapse. Although the use of these terminologies can sometimes be a matter of preference for researchers, spirituality is an all-encompassing term, whereas religiosity is mostly associated with Judeo-Christian beliefs (Zwingmann, Klein, & Bussing, 2011). For example, individuals who score low on religiosity have an 85% higher rate of substance abuse (Allen & Lo, 2010). Spirituality can provide a sense of meaning to life, ability to cope with stressful situations, and interpersonal connectedness (Monod et al., 2011), all of which are important to successful recovery from chemical dependency and the prevention of relapse. Individuals who score high on spirituality are four times less likely to be depressed compared with those who score low (Diaz, Horton, McIlveen, Weiner, & Williams, 2011; Giordano et al., 2015), which is particularly relevant because depression is a predictor of relapse in substance use treatment (Schellekens et al., 2015). The debate on classification of religiosity and spirituality as either moderators of relapse or actual predictors of relapse is superseded by the apparent benefits exhibited by those who report high levels of either religiosity or spirituality.

Interestingly, prior criminal history is also a significant predictor of relapse among nurses with impaired practice (Zhong et al., 2009). Individuals with prior criminal history have a 30% higher rate of relapse in chemical dependency rehabilitation compared with those without prior convictions (Zhong et al., 2009). Furthermore, changing employers during probation and having previous disciplinary actions by the Board of Nursing increase the risk of relapse among nurses with impaired practice (Waneka, Spetz, & Keane, 2011).

Nurses receiving prelicensure education in the United States are also at a significantly higher risk of relapse compared with those who did not receive their prelicensure education in the United States (Waneka et al., 2011). More research is needed to understand what factors contribute to U.S.-trained nurses being more susceptible to substance misuse and addiction compared with foreign-trained nurses. Notwithstanding, except for prior criminal convictions, not many of these factors can be controlled. Davis, Powers, Vuk, and Kennedy (2014)

suggested that, because of this, Boards of Nursing should reconsider criteria for issuing licenses to people with prior criminal convictions. This conclusion, however, is not free of controversy. The feasibility and implications of excluding a certain population of people from obtaining nursing licenses can be considered as discriminatory.

Among the studies that have been conducted to test the efficacy of clinical interventions to reduce substance misuse and relapse, the results have been mixed, making confident recommendation of any interventions difficult (Kadden & Litt, 2011) because of the need to design individualized treatment programs. The purpose of this study was to examine the correlates and predictors of relapse among nurses with impaired practice who are going through a peer assistance program for substance misuse and to establish at what point in the Peer Assistance Program (PAP) they are most susceptible to relapse. The study also aimed to examine the association of age and gender with employment status, length in program, license type, and number of days abstinent after controlling for psychiatric comorbidities.

METHODOLOGY

This study was a retrospective secondary data analysis of Texas nurses with impaired practice who were participating in TPAPN between January 2010 and October 2016. The TPAPN is an alternative-to-discipline peer assistance program and provides monitoring services for nurses who have impaired practice while they go through rehabilitation for them to be eventually incorporated into the workforce. This, however, is contingent on the nurses with impaired practice satisfying the conditions of their probationary status (TPAPN, 2016). These conditions may include but are not limited to mandatory attendance of a 12-step program such as Alcoholics Anonymous, random urine drug screens, and restriction on what specialty areas these nurses can practice in (TPAPN, 2016). TPAPN admits both registered nurses (RNs) and licensed vocational nurses (LVNs). In addition to monitoring nurses with impaired practice, TPAPN also monitors nurses with mental health conditions, with or without the co-occurrence of SUD and impaired practice. Currently, there are 43 states in the United States who have alternative-to-discipline peer assistance programs (National Council of State Boards of Nursing, 2013).

The inclusion criteria for this study were all cases in the TPAPN database for which the research variables of interest were present or could be created from the information available. This included both RNs and LVNs. All case entries between 2010 and the date when the database was shared with the researcher (October 2016) that met the inclusion criteria were included in the data analysis. The researcher received prior permission from TPAPN to analyze these data after receiving institutional review board review from the researcher's institution. The researcher only had access to the de-identified database as all de-identification procedures were conducted by TPAPN before receiving the database.

An a priori power analysis was conducted to determine the required sample size using G*Power (Faul, Erdfelder, Lang, & Buchner, 2007; Grove & Cipher, 2017). A sample of 616 was required to address the primary study objective based on a small effect size of $d = .10$, with a beta of .20 and a two-tailed alpha of .05. At the time the database was shared, there were 1,952 participants; however, some of these were duplicates, and others were nurses who were referred to TPAPN strictly for mental health disorders. After data cleaning procedures were completed, the final sample size was 1,553, and therefore the N far exceeded a priori sample size requirements.

Description of the Database

The information in the TPAPN database is collected from participants upon admission into the program and is updated as needed to reflect the status of nurses in the program. The information contained in this database was analyzed to better understand the population of nurses with impaired practice in Texas. According to TPAPN, this database was first developed in 2013. However, they had records of nurses beginning with 2010. Therefore, although the database was first developed in 2013, it contained participant information from as far back as 2010. At the time the database was shared with the researchers, there were 348 active participants in TPAPN with referrals related to SUDs. It is important to note that, in addition to nurses with impaired practice, TPAPN also monitors other nurses who are referred to the program for mental health problems alone. The data obtained from TPAPN included both LVNs and RNs. Because TPAPN also provides monitoring for nurses with mental health problems alone, nurses with strict mental health referrals were excluded from data analysis because this study only focused on those nurses with substance abuse problems. At the time the researcher received the database, it contained 1,952 participants. However, some of these were duplicate entries. After identifying and removing 178 duplicate entries, 1,743 participants remained. Of these, 190 were strictly for mental health disorders, and they were excluded from the analysis. This brought the final sample size for this study to 1,553, including those nurses who were actively participating at the time the database was shared.

Data Collection and Statistical Analysis

The de-identified database was shared with the researchers through an encrypted e-mail. The database was stored on encrypted and password-protected computers at the researchers' institution. All data cleaning, managing, and statistical analyses were performed using these computers. The researchers verified all data points in the database that was shared. This process involved making sure that all desired variables were present and that they fit within the specified parameters. If any data points were found to be out of order or not appropriate for a particular variable, the researcher excluded them from the analysis. The database was also checked for duplicates, and all duplicate data points were excluded from the analysis. The researchers' institutional review board determined that, because the researchers only had access to the de-identified database, a full review was not necessary. There was also no need to obtain informed

consent because participants in TPAPN give consent for their de-identified information to be used for research purposes upon admission into the program (TPAPN Handbook, 2016).

Continuous parameters are reported as mean ± *SD*; and discrete parameters, as *n* and percent (%). Data were explored for departures from normality with the Shapiro–Wilk test. Group comparisons were made with independent samples *t* tests and Mann–Whitney *U* tests. Associations were computed with the Pearson correlation and Spearman rank-order correlation coefficient for continuous variables and the Pearson chi-square for nominal variables. A Kaplan–Meier survival function was computed to estimate the accelerated risk of relapse at any given point in time. Subsequently, Cox proportional hazards regression analyses were performed to identify variables that significantly predicted the likelihood of relapse in nurses with impaired practice. Data were analyzed with SPSS Version 22 (University of Chicago, IL).

RESULTS

Demographics

Approximately 75% of participants were female. The age of participants in this study ranged from 22 to 66 years, with a mean age of 40.1 years (*SD* = 9.7). RNs constituted about 76% (*n* = 1,185) of participants, followed by LVNs who made up approximately 23% of the sample. Nurses with SUD alone made up most of the participants in this program at 65.5% (*n* = 1,017). Nurses with psychiatric comorbidities made up the next highest category of participation type, accounting for 22.7% of participants. When those participants who were admitted strictly with psychiatric comorbidities were added to those who may not necessarily have been admitted for psychiatric comorbidities but had a positive drug screen, the total percentage of participants who were considered as having a psychiatric comorbidity increased to 23.3%.

Approximately 498 (32.1%) nurses relapsed at some point in the program. Of those who relapsed, most only had one relapse (87%, *n* = 435). In addition, the top four reasons for referral to the monitoring program were as follows: diversion (25.6%), impairment at work (20.0%), arrest and criminal history (19.7%), and SUD diagnosis (13.2%). Narcotics were the most abused substance at 29%, although alcohol was a close second at about 26%. Interestingly, about 36% of nurses indicated that they abused more than a single substance. The top five areas of practice were long-term care and geriatrics (12.7%), medical–surgical and telemetry areas (10.3%), home health and hospice care (8.8%), psychiatric mental health areas (4.6%), and dialysis (4.9%; see Table 1).

The Relationships Among Age, Gender, and Other Personal Factors

The association between age and employment status approached significance ($\chi^2 = 59.210$, $p = .062$). The association between age and license type also approached significance ($\chi^2 = 30.147$, $p = .056$). Length in program and number of days abstinent were also not significantly associated with the age of

TABLE 1 Description of Sample

Variable	Frequency	%
Age (years)		
20–29	247	16.4
30–39	508	33.7
40–49	455	30.2
50–59	257	17.1
<59	39	2.6
Gender		
Male	319	25.1
Female	951	74.9
License type		
RN	1,108	71.3
LVN	360	23.2
APRN	76	4.9
Participation type		
SUD	1,017	65.5
Dual	352	22.7
EEP	162	10.4
Psychiatric comorbidity		
Yes	362	23.3
No	1,191	76.7
Relapse		
Yes	498	32.1
No	1,055	67.9
Drug of choice (top five)		
Opioids	451	29
Alcohol	396	25.5
Stimulants	87	5.6
Amphetamines	54	3.5
Cannabinoids	52	33.3
Benzodiazepines	37	2.4
Top four reasons for referral		
Diversion	450	25.6
Impairment at work	311	20.0
Arrest/criminal Hx	307	19.7
SUD diagnosis	206	13.2
Top five areas of practice		
Long-term and geriatrics	198	12.8
MedSurg-tele	160	10.3
Home health and hospice	137	8.8
Psych mental health	76	4.9
Dialysis	76	4.9

APRN = advanced practice registered nurse; EEP = extended evaluation program; Hx = history; LVN = licensed vocational nurse; MedSurg-Tele = medical surgical telemetry; RN = registered nurse; SUD = substance use disorder.

TABLE 2 Correlations for Times Related to Participation in Program

	Age	Length in Program	Number of Days Abstinent	Time to Enroll
Age	1.00	.009 (.718)	.028 (.377)	−.014 (.641)
Length in program	.009 (.718)	1.00	.992 (<.001)	−.164 (<.001)
Number of days abstinent	028 (.377)	.992 (<.001)	1.00	−.169 (<.001)
Time to enroll	−.014 (.641)	−.164 (<.001)		1.00

the participant ($\chi^2 = 0.009$, $p = .718$, and $\chi^2 = 0.028$, $p = .377$, respectively). Of note, the time it takes participants to enroll in a peer assistance program from the time they are referred and the number of days abstinent were negatively associated with length in program ($r_s(1190) = -.164$, $p < .001$). Conversely, there was a strong, positive, significant relationship between number of days abstinent and length in program ($r_s(1078) = .992$, $p < .001$; see Table 2).

There was no significant association between gender and number of days abstinent ($z = 52.277$, $p = .826$) nor between gender and length in program ($z = 98.810$, $p = .155$). There was also no statistically significant association between gender and license type ($\chi^2(4, N = 1506) = 15.074$, $p = .237$). Nonetheless, there was a significant association between gender and employment status, with more men (34.5%) being employed compared with only 28.7% of women ($\chi^2(2, N = 1070) = 6.615$, $p = .037$; see Table 3).

Risk for Relapse

A Kaplan–Meier survival function indicated that median time to relapse was 68 months and mean time to relapse was 56 months (see Figure 1). Participants who were referred to the program with SUD had a median time of 72 months to relapse and an average of 62 months. Median time to relapse for those who abused alcohol alone was 71 months, with a mean time of 57 months. Twelve variables were selected as predictors in the Cox proportional hazards regression model. These 12 variables were chosen on the basis of evidence found in the literature associating them with the risk of relapse in individuals with SUD. Of the 12, only two were statistically significant. These were having an SUD referral type (adjusted hazard ratio [HR] = 0.453, $p < .001$) and using alcohol as the primary drug of choice (adjusted HR = 1.69, $p = .004$). Participants who were referred for SUD alone had a 55% lower risk of relapse when participating in the monitoring program, and those who abused alcohol as their primary drug of choice had almost a 70% higher risk of relapse (see Table 4). In addition, approximately 60% ($n = 299$) of those who relapsed did so in the first 6 months of participation in the monitoring program.

DISCUSSION

The first research question examined associations between age and gender in relation to employment status, length in program, license type, and number of days abstinent. In this study, age was not significantly associated with employment status, license type, length in program, or number of days abstinent. These results are in contrast to the findings of Davis et al. (2014) who found that younger nurses have poorer outcomes than older nurses. Arteaga, Chen, and Reynolds (2010) also found that individuals who initiate substance abuse at an early age were more likely to have increased severity of substance abuse later in life. However, we could not determine age of initiation from our study as this was a secondary data analysis. With that in mind, it is noteworthy that age at the time of intake into the monitoring program was not significantly associated with outcomes. Thus, all nurses with SUD need individualized treatment plans that promote recovery and safe reincorporation into the workforce.

Although only with a small correlation coefficient, number of days abstinent was inversely associated with time it took to enroll. Nurses who enroll in the program faster are therefore more likely to relapse at a later stage if they do at all. Deliberate efforts should be made to encourage nurses with impaired practice to enroll into the monitoring programs as soon as possible. This also requires identification of barriers to enrollment into monitoring programs as a possible solution to the problem of delayed enrollment. In addition, the longer nurses participate in the monitoring program, the higher the number of days they are abstinent ($p < .001$). Participating in the peer assistance and monitoring program for extended periods has further been viewed as a protective factor against relapse among individuals recovering from SUDs (Horton-Deutsch, McNelis, & O'Haver Day, 2011) and should therefore be encouraged whenever possible.

The findings of this study reveal that gender is not associated with the type of license held, the length in program, or the number of days abstinent. In the literature, there is conflicting evidence on which gender has poorer outcomes when examining SUDs. For example, Davis et al. (2014)

TABLE 3 Gender and Other Variables

		Chi-Square/ Mann–Whitney *U*	*p*
Gender	Number of days abstinent	52.277	.826
	Length in program	98.810	.155
	License type	15.074	.237
	Employment status	6.615	.037

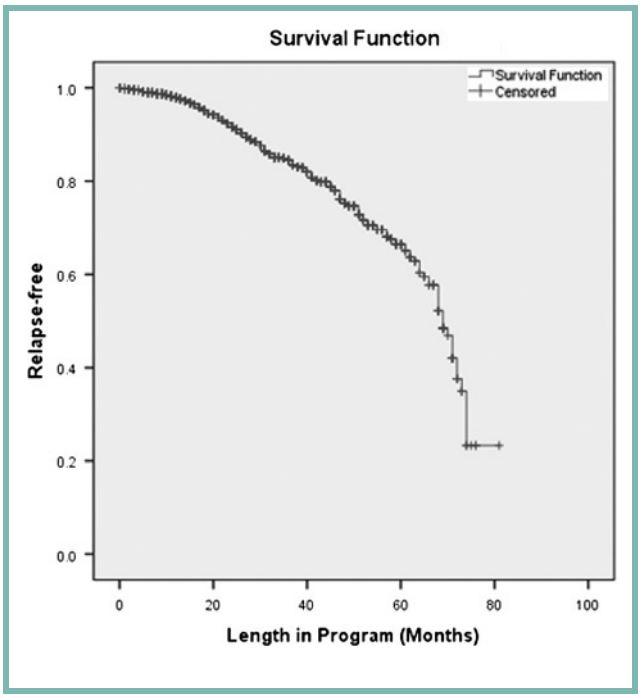

Figure 1 Kaplan-Meier survival function- time to relapse.

found that men tend to have higher rates of relapse in comparison with women, and Chapman and Wu (2014) found that they have higher HRs for completed suicide and psychiatric comorbidity. Notwithstanding, gender is associated with employment status, with more men (34.5%) being employed compared with their female counterparts (28.7%) while participating in monitoring programs.Dittman (2008, 2012), who found that men with impaired practice are treated much differently than women both in practice settings and in monitoring programs, thus potentially contributing to their overrepresentation in substance abuse monitoring programs, echoed this. The reasons for these disparities need to be explored and addressed to promote fair and equitable treatment of nurses with SUD regardless of gender.

The presence of psychiatric comorbidities has long been identified as a predictor of relapse among nurses with impaired practice and in individuals with SUD in general (Schellekens et al., 2015; Tipton, 2006). Approximately 23% of nurses in this study were identified as having a psychiatric comorbidity. Other studies have found prevalence of psychiatric comorbidities as high as 58% (Shaw et al., 2004) and others as low as 18% (Clark & Farnsworth, 2006). This is especially important when 35% of medical–surgical nurses and 18% of the nursing workforce report significant depressive symptomology (Letvak et al., 2012; Welsh, 2009). In this study, almost 11% of all nurses who were referred to the peer assistance programs were strictly referred for mental health disorder. When added to those nurses with psychiatric comorbidities, nurses struggling with mental health disorders made up over a third (34.2%) of all participants in this peer assistance program.

Tipton (2006) found that psychiatric comorbidities were significant predictors of relapse and explained about 6.4% of the variance in relapse among nurses participating in peer assistance programs. This, however, was not noted for nurses in this study. Psychiatric comorbidity was not significantly associated with relapse, and when included in the survival analysis model, the hazard of relapse was not significantly different between the two groups. Although the proportion of nurses with psychiatric comorbidity (25.9%) who relapsed was higher than those who did not (22.1%), this difference was not statistically significant. In the regression model, although not statistically significant, it is noteworthy that nurses

TABLE 4 Cox PH Regression Model of Program Relapse

Predictor	*p*	Adjusted HR	95% CI	
			Lower	Upper
Participation type: substance use disorder	<.001	0.453	0.292	0.701
Drug of choice: alcohol	.004	1.690	1.178	2.423
Participation type: dual	.616	1.671	0.224	12.463
Age at program enrollment	.252	0.991	0.977	1.006
Drug of choice: opioids	.200	1.300	0.871	1.006
Criminal history	.868	0.964	0.626	1.484
Diversion/impaired practice	.250	1.226	0.866	1.736
RN License	.387	0.864	0.621	1.203
Male	.521	0.893	0.632	1.262
Psychiatric comorbidity	.446	0.457	0.061	3.431
Self-report	.133	1.385	0.905	2.121
Additional drugs	.272	0.825	0.586	1.163

HR = hazard ratio; PH = proportional hazards; RN = registered nurse.

with psychiatric comorbidities had a 67% higher risk of relapse than those who did not. In fact, in this study, a diagnosis of SUD alone was significantly associated with 55% less chance of relapse. Although not statistically significant, this finding may possess clinical significance, and early identification with individuals with psychiatric comorbidities may be imperative in ensuring better outcomes for these individuals by influencing policies related to additional monitoring and counseling while participating in these programs.

The second research question aimed at examining predictors of relapse and identifying at what point in the monitoring program they were most susceptible for relapse. Twelve variables were chosen to be included in the survival analysis model. The basis for choosing these predictor variables was the literature supporting their association with relapse among nurses with SUD. Cox regression analysis revealed that only two of the 12 predictor variables were significantly associated with the risk for relapse. The two significant predictors were alcohol as the primary drug of choice ($p = .004$) and SUD as a referral type ($p < .001$).

The remaining predictor variables may not have been statistically significant, but it is important to note some relationships that may have been supported by other studies. In addition, because the relationships did not have statistical significance does not necessarily mean that clinical implications cannot be drawn. For example, although not a statistically significant prediction, nurses with psychiatric comorbidities may have a 67% higher likelihood of relapse. This is consistent with what other researchers have found (Schellekens et al., 2015; Tipton, 2006).

CONCLUSION

The estimated 6-year prevalence rate of substance abuse and chemical dependency in Texas is about 2%. This prevalence, however, is only for nurses who are participating in the peer assistance programs. It does not include those who may have decided to give up their licenses or not participate in the peer assistance monitoring programs. It is therefore expected that the actual prevalence for the state of Texas is higher than what was found in the study. Nurses with impaired practice in Texas are more likely to be female, between the ages of 30 and 39 years, misusing narcotics, and having an RN license. A significant number of these nurses continue to practice impaired and are diverting medications from patients. Very few nurses with impaired practice self-report, and almost one third relapse while going through the monitoring program. Denial of the problem of substance misuse is still apparent among nurses as evidenced by over one in 10 refusing to participate in the program when they are first referred or withdrawing from the program before completion. Predictors of relapse in this population include having alcohol as a drug of choice and a referral type of SUDs. Although not statistically significant predictors of relapse, many of the variables examined in the regression analysis carry clinical significance, which when properly examined can influence health policy, practice, and research. The plight of nurses with impaired practice still needs to be explored, especially with new trends being noticed in the literature concerning which practice areas are becoming more susceptible to SUDs.

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