Patient Outcomes Based on Detoxification Circumstances

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In addicted patients living in the United States, how does planned detoxification compare to unplanned detoxification with regards to both mental and physical patient outcomes?

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Addiction has been a problem in all areas for decades. It can be applied to anything from over-eating to use of illicit substances. While each addiction is likely present in every population, alcohol addiction/abuse is very prevalent in Route County, Colorado. The Yampa Valley Medical Center sees many patients presenting in the Emergency Department with high blood alcohol content each week, many of them repeatedly. This poses the question to the caregivers of whether putting the addicts through hospital detoxification repeatedly is harming them mentally and physically more than just allowing them to return to a safe blood alcohol content and leave, waiting for them to be ready to choose and plan a detoxification. The proposed study attempts to answer this question; In addicted patients living in the United States, how does planned detoxification compare to unplanned detoxification with regards to both mental and physical patient outcomes? The answer to this question is essential for nurses to know to ensure higher levels of compliance with patients, increasing community health. It is important for nurses to provide and advocate for the care that will serve the patient better in the long run, even if it may not be what first appears to be the healthiest decision.

Methods

The search for peer-reviewed articles was done in PubMed, a peer reviewed database. The search included key words such as “planned detoxification” versus “unplanned detoxification” and “patient outcomes.” Mr. David Brown, a librarian at the University of Wyoming, was consulted in order to refine articles for inclusion. The articles were also examined by the researcher for bias and clinical nursing significance.

To be included in the study, the articles had to meet a variety of criteria. The most important criteria used was the article's systemic review had to be based in first world countries (United States or Australia). The reason for this is the medical systems in other countries and the training of medical attendants in other nations is different and can impact patient outcomes. In addition, the most recent evidence available was used where each article was from the past sixteen years. This way all information reflected current detoxification data. Patient outcome was counted as inclusion in life activities (socialization, working, extracurriculars) along with adherence to cessation of substance use/abuse. Each article was peer reviewed by a panel of experts to ensure that each article is reliable in the medical community.

Results

Equal Rates of Poor Outcomes in Planned vs. Unplanned Detoxification

Participants in the Azuar et al. (2016), Duong et al. (2012), and Wolfe et al. (2013) studies were in longitudinal studies researching outcomes post planned and unplanned detoxification of individuals over set periods of time. The Azuar et al. (2016) study consisted of N=120 patients, N=60 patients admitted directly by the Emergency Department for unplanned detoxification, and N=60 patients admitted after going through preparation for an inpatient detoxification program (Azuar et al., 2016). The Duong et al. (2012) study consisted of ten patients subsequent Emergency Department visits one, three, and six months following an unplanned detoxification of 30 days through mandatory inpatient alcohol detoxification, or MAD (Duong et al., 2012). The Wolfe et al. (2013) study compared the effects that coercion, motivation, and therapeutic alliance had on patient outcomes from an inpatient detoxification treatment (Wolfe et al., 2013). This study defined coercion as detoxification being forced by the criminal justice system, in other words: unplanned, whereas motivation was defined as the

internal desires and urges/perception about the risks and benefits of behaviors to oneself/external goals that brought the patient in, in other words: planned (Wolfe et al., 2013). All included detoxifications took place in the United States. All three studies showed that planned detoxification had equal rates of poor patient outcome as unplanned detoxification. The p-value is a qualifiable way of gauging the strength of the evidence in comparison with the null, the closer the p-value is to 1 the less clinically significant it is. A p-value between 0 and 1 shows meaning that while there is correlation, there could be other explanation for the result to some degree. 32% vs. 22% post-discharge attendance to outpatient visits, p=0.151 in the Azuar et al. (2016) study, a p-value of p=0.05 for one month p=0.18 for three months p=0.15 for six months in the Duong et al. (2012) study for Emergency Department visits after MAD, and a p-value of p=0.647 in the Wolfe et al. (2013) study.

Decreased Rates of Poor Outcomes in Planned vs. Unplanned Detoxification

Participants in the Moos and Moos (2006) and Kelly et al. (2015) studies were in longitudinal studies researching outcomes of planned and unplanned detoxification of individuals. These studies were conducted over set periods of time throughout the life of the participants after their detoxification. The Moos and Moos (2006) study consisted of the results at baseline, one, three, eight and sixteen years after treatment of N=461 individuals who initiated their detoxification, or planned, compared to patients who did not initiate, or unplanned (Moos & Moos, 2006). The Kelly et al. (2015) study compared the relapse rate of N=220 patients over time, half of which had completed “prep-work” for their detoxification, or planned, and the other half who had not, or unplanned (Kelly et al., 2014). The Moos and Moos (2006) detoxifications took place in the United States while the Kelley et al. (2015) detoxifications took place in Australia. Both studies showed that there was a decrease in rates of poor outcomes in planned

detoxifications when compared to those of unplanned detoxifications. In the Moos and Moos (2006) study, "by the 3-year follow-up, 62.4% of individuals in the helped group were remitted, compared with only 43.4% of individuals in the no help group (χ^2= 11.54; df = 1; $P < 0.01$) …. By the 16-year follow-up, 60.5% of the 3-year remitted individuals in the no help group had relapsed, compared with 42.9% of 3-year remitted individuals in the helped group ($\chi^2 = 4.48$; df = 1; $P < 0.05$)" (Moos & Moos, 2006). The chi-square within those findings are the difference between the observed and expected results, the higher the chi-square the large the difference. The degrees of freedom within those findings are the maximum number or independent values, which is one as each person is holds one full value. The chi-square and degrees of freedom help to define the p-value. The Kelly et al. (2015) study showed that prep work significantly predicted the implementation of intentions ($\beta = 0.70$, $P = 0.014$) and success of maintenance of those implementations ($\beta = 0.72$, $P = 0.038$) (Kelly et al., 2015). Beta served as a standardized coefficient for the study that compared the strength of correlation between each individual independent variable with the dependent variables. The closer beta is to one, the stronger the correlation.

Confounding Factors

The Kelly et al. (2015) study compared patient outcomes based on level of intent of detoxification, in recent years with the definition of positive outcomes being defined as inclusion in life activities (socialization, working, extracurriculars) along with adherence to cessation of substance use/abuse. This study found that prep work had significance on the rate of detoxification patients resulting with a positive outcome (Kelly et al., 2015). However, this study utilized research from outside the United States which obscured the data since the health care system is different than in the United States and can impact detoxification outcomes.

Strengths and Weaknesses

The results of the Moos and Moos (2006) and Kelly et al. (2015) studies were strengthened as they both included results from well over 200 patients. Both of these studies also stratified their results and included only the strongest evidence with the most well-defined search parameters. These sources included different countries in their results; unfortunately, the health care systems in different countries have the potential to be significantly different, which could lead to a difference in care delivery. The Moos and Moos (2006) study strengths included data from only the United States, but as discussed previously, this data still shows clinical significance within the United States. This study also represents the correct population (addicts' outcomes in the following months/years of their life) and includes other aspects of detoxification care that can impact patient outcomes rather than just prep work. The weaknesses of the Moos and Moos (2006) study were that N=121 of their participants passed away. These individuals were included in negative outcomes regardless of cause of death, which could skew data correlating the detoxification planning to that outcome. Strengths in the Kelly et al. (2015) study include representation of the correct population (addicts' outcomes in the following months/years of their life) and other aspects of detoxification care that can impact patient outcomes rather than just prep work. The weaknesses of the Kelly et al. (2015) study were that it included research from outside the United States which obscured the data and that it was conducted seven years ago and could have outdated information. Strengths of the Azuar et al. (2016) study are the inclusion of demographics of patients that showed additional trends with patient outcome along with the inclusion of the correct population. Weaknesses of the Azuar et al. (2016) study are that it does not span over five months and only includes N=120 patients. The research in this study also shows the patient outcome is better in planned detoxification but not

quite significant at both one month (65% vs 57%, p=0.227) and at five months (32% vs 22%, p=0.151). Meaning that there were higher continuations of sobriety after planned detoxification, however, the significance of correlation was not high enough to definitively state that it was due to the planning of the detoxification. Strengths of the Duong et al. (2012) study include representation of the correct population (addicts' outcomes in the following months/years of their life) and specification of a 30-day MAD treatment. Weaknesses of this study are that it only includes ten patients in Massachusetts and as such represents a very small portion of the United States. Strengths of the Wolfe et al. (2013) study include demographics that showed trends in outcome of addiction treatment along with the inclusion of impact that different during-detoxification care had on outcomes. Weaknesses of the Wolfe et al. (2013) study include that there was no significance found with planned vs unplanned detoxification and instead there was an indication to conduct a new study on during-detoxification care philosophies impact on outcomes, making the Wolfe et al. (2013) study's conclusion less applicable to the PICOT.

Gaps in Research

The Moos and Moos (2006) study had N=121 out of their original N=461 participants pass away before the completion of their longitudinal study. The inclusion of these individuals as a negative outcome could skew the data as it is not known if/how many of these deaths were the result of detoxification/addiction. The Moos and Moos (2006) study was also conducted over fifteen years ago and could have outdated information. The Kelly et al. (2015) study focused research from Australia not the United States where factors other than preparation for detoxification such as training and funding of health care systems can play a role in patient outcomes. There is a lack of studies specifically focusing on the United States preparation impact on detoxification which is the most applicable for the PICOT. The Kelly et al. (2015) study was

also conducted fifteen years ago and could have outdate information. The Azuar et al. (2016) study does not span a large amount of time and includes a small sample size. This small sample size gives an inaccurate data sample for the entire United States. The Duong et al. (2012) study only includes ten patients in Massachusetts and as such represents a very small portion of the United States. This makes it difficult to determine if the outcome of this study would be statistically significant across the nation. Though we would need to gather more information to make this significant. The Wolfe et al. (2013) study included the impact of other factors such as care philosophies during detoxification on patient outcomes and as such did not apply to the PICOT as significantly as indicated.

Overall, the studies found that planned detoxification in developed countries resulted in lower instances of poor patient outcomes. Three studies resulted in equal patient outcomes based on preparation or not of detoxification, however, this is easily explained by the fact that the results from their studies included insignificant sample sizes and included other factors within detoxification. The question remains to what degree preparation has on patient outcomes; however, it is observed that unplanned detoxification results in poor patient outcomes. Additionally, these studies have found that patient demographics such as gender, age, education, marriage status, employment, age recognition of drinking problem, lifetime drinking problems, and number of attempts to cut down had significant impact on patient outcomes as well. Male, elderly, less educated, unmarried, unemployed, later recognition of drinking problem, existent lifetime of drinking problems, and high numbers of attempts to cut down on drinking were all found to correlate with poorer patient outcomes after detoxification. Furthermore, these studies have found that safe, compassionate, genuine, empathetic relationships between caregiver and patient have an impact on patient outcome as well. Additional study would be required to outline

exactly what degree each of these items impact patient outcomes. This further study is also indicated as research on detoxification and the impact on patient outcome has not been studied in recent years.

Clinical Implications

This information is extremely important for nurses because nurses serve a role as educators and advocates for patients. It is important that nurses, as health care providers, have the most up to date evidence-based recommendations to provide communities heavily laden with addiction. This is especially important in today's climates when addiction rates are growing in frequency and variation between substance. Many addicts have questions about the safety of detoxification and ways that they can secure more successful adherence. Based on the evidence, it has been shown with that in developed countries, planning, education, counseling, and during-detoxification care produce significantly higher rates of positive outcomes than unplanned detoxification. These positive outcomes include adherence to support groups, involvement in the community, maintaining job security, financial security, shelter, report of overall happiness, and lack of return to addiction treatment. It is important to inform patients that statistics finding that preparation for detoxification does not definitively impact patient outcomes. It is also important to inform patients that detoxification within other countries, where practices and training is different, could impact detoxification outcomes. Additionally, there is a financial burden that must be discussed. Healthcare organizations should understand that implementing guidelines to prepare patients for detoxification along with new training on how to educate, plan, counsel, and treat detoxification for care teams would have significant cost. There would be need for additional study as well to define best practices for treating and counseling for detoxification as the evidence indicated significance in their impact but not specification on exact practices for

best impact. Yampa Valley Medical Center is part of the UCHealth organization that spans Colorado. Doctor and nurse practices vary from hospital to hospital along with patient demographics. This would also be a barrier for implementation as demographics were shown to have some significance in outcome as well as planning and treatment.

Contribution to Personal Development

Observing the weekly return of addicted patients to the hospital drew my attention to the indication for additional community health education and resources. The treatment of these struggling individuals within the healthcare setting then solidified that not only does there need to be education in the community but also in healthcare. The common practice of admitting a patient for detoxification even though they express that they do not wish to detoxify and wish to continue to drink is immoral. While these patients frequently do have comorbidities, such as nutritional insufficiency, admitting them to solve these secondary diagnoses often forces the into detoxifying. This process then repeats due to the lack of desire and readiness to fight their addiction. The frequent forcing of detoxification causes damage to patient's nerves, organs, emotions, and lifestyle. These studies reiterate that patients who have had forethought on their detoxification have higher rates of success and positive outcomes long term. The overwhelming lesson that has been evident for me through this is that addiction is too complex disease that impacts entire communities and involves individuals in every aspect of their life. In order to help patients, additional studies should be completed to further define what best practices are to help provide these individuals with long term recovery and improvement on their wholistic health.

Conclusion

Alcohol addiction/abuse is very prevalent in Route County, Colorado where Yampa Valley Medical Center services. Here the Emergency Department see “frequent fliers” presenting with extreme alcohol intoxication. The severity of the intoxication often includes some level of nutritional/supplement imbalances. This provides cause for doctors to admit these patients for detoxification and nutritional/supplemental correction along with treatment of whatever other presenting co-morbidities are present. This forced unplanned detoxification has been seen in Yampa Valley Medical Center to lead to seizure activities, hallucinations, loss of consciousness, severe behavioral changes, cognitive decline, neurological overload, weakness, tremors, anxiety, depression, and death. Close by, Hospice of Laramie admits many patients to hospice care from complications of addiction. This can mean continued abuse, one of the co-morbidities from continued abuse, and/or one of the co-morbidities of detoxification. Both unplanned and planned detoxification is difficult on the body and can produce the issues listed above, however, the evidence shows that unplanned detoxification has a higher rate of return to need for additional detoxification and/or co-morbidities from addiction. This shows that while addiction always has the potential to lead to negative health outcomes, planned detoxification can help to limit the amount of damage done on a body by increasing patient adherence to support groups, involvement in the community, maintaining job security, financial security, shelter, report of overall happiness, and lack of return to addiction treatment. Nurses will be impacted by the change in practices leading up to and during detoxification and treatment of addicted patients, however, can help to lead in the research of healthier practices. The possibility of an overall healthier community with lower addiction rates outweighs the financial burden to train staff and develop new practices and the strain placed on healthcare workers in implementation.

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