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Improving Health Care Provider Knowledge when Discharging Patients with Substance Abuse: A Quality Improvement Project

Jacqueline Ustache
Florida International University, jpier155@fiu.edu

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Improving Health Care Provider Knowledge when Discharging Patients with Substance
Abuse: A Quality Improvement Project

A Scholarly Project Presented to the Faculty of the Nicole Wertheim College of Nursing
and Health Sciences

Florida International University

In partial fulfillment of the requirements For the Degree of Doctor of Nursing Practice

Jacqueline Ustache APRN, PMHNP-BC

Supervised By

Dr. Charles Buscemi, PhD, APRN

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Abstract

Background: The transition from psychiatric facilities to community settings poses a challenge to most substance abuse disorder (SUD) patients. This transition can influence SUD patients' mental health outcomes, continuity of care, and adjustment to community life. Difficulties in coping with symptoms, poor medication adherence, stigmatization, low self-esteem, loneliness, anxiety, craving, and suicidal ideation are common in the first weeks after discharge. These difficulties can also lead to a relapse of substance abuse and contribute to the readmission of patients.

Context: Knowledge of proper discharge interventions for SUD patients is critical to improve their quality of life, reduce readmission, and prevent relapse.

Purpose: The purpose of this quality improvement proposal project was to develop and implement a post-discharge educational intervention program for healthcare practitioners who provide care to SUD patients at the treatment facility.

Methods: The transitions theory and the IFMST guided the development and implementation of the post-discharge educational intervention program. Fourteen HCPs purposively selected from the clinic received training. The training was conducted online via Zoom, and the data was collected through pre and post-test online questionnaires. The questionnaires were designed and distributed using Qualtrics software.

Results: The data indicates that there were improvements in the knowledge of HCPs related to the use of Assessment Guidelines, Medication Adherence, and Patient Education. Specifically, knowledge scores for Assessment Guidelines increased from 40% to 57%, for Medical Adherence from 52% to 71%, and for Patient Education from 50% to 66%. The overall knowledge score increased from 46% to 68%.

Statement of the Problem

For many substance abuse disorder (SUD) patients, the transition from psychiatric facilities to community settings is challenging. It can influence their mental health outcomes, continuity of care, and adjustment to community life. The first few weeks after discharge represent a crucial period, as difficulties can arise in their daily lives, such as coping with symptoms, poor medication adherence, stigmatization, low self-esteem, loneliness, anxiety, craving, and suicidal ideation (Hegedus et al., 2020). These difficulties can lead to a relapse of substance abuse and contribute to the readmission of the patients. Veterans particularly (between 63 and 76%) have high co-occurring SUD levels (Najavits et al., 2018). Knowledge of proper discharge interventions for these vulnerable patients is critical to improve their quality of life and reduce readmission and relapse of substance abuse disorder.

The clinical practice problem that has been identified for the current proposal is the lack of knowledge on proper discharge plans for SUD patients in the Community Health Care located in Arizona. The lack of implementation of an appropriate discharge plan for SUD patients is associated with a greater risk of readmissions, post-traumatic stress disorder due to stigma, and higher re-admissions rates (Agency for Healthcare Research and Quality, 2020). The discharge planning may be negatively influenced by the lack of knowledge of the procedures involved and proven to contribute to SUD patients' relapses (Agency for Healthcare Research and Quality, 2020).

The main proposal goal is to develop an educational intervention program for Healthcare Provider (HCP) at the Community Health Care Center. There is no discharge planning education for HCPs working with SUD patients at the Community Health Care Center. The HCPs have inadequate knowledge of discharge strategies and lack family education and psycho-education

skills essential during discharge planning. Most SUD patients at the facility have been noted to relapse because of their lack of knowledge of handling psychological stigma. The transition of care techniques that the SUD patients have is from other SUD patients, some of whom have relapsed. If an educational intervention program on transition planning can be established, it may lower the readmission and relapse rates.

Significance

The current practice gap at the healthcare facility reveals a lack of adequate information and skills among HCPs during discharge planning. As earlier stated, the purpose of this project was to implement an educational intervention program for HCPs handling SUD patients. After educating the HCPs on discharge planning strategies, and the use of Addiction Severity Index screening tools, patients had a lower relapse and readmission rates because they were better equipped for managing stigma and withdrawal symptoms. The project added to the existing body of knowledge on standardization of transition planning tailored to a patient's lifestyle, sociality, and health literacy needs, with patient-friendly terminology and clearly and accurately written patient education materials.

Summary of the Literature

Inadequate discharge processes lead to poor patient health outcomes and are the main contributor to disjointed care coordination (Chen et al., 2020). A discharge plan that entails comprehensive psycho-education for SUD patients and their families leads to significant benefits. Psychoeducation may prevent patient relapses because of the HCP and family-related support systems (Gilhooly et al., 2018).

Literature Search

An electronic database search was conducted to identify articles reporting discharge interventions for SUD patients with co-occurring substance abuse or relapse. The search involved the following databases: Psychological Information Database (PsycINFO), Cumulated Index to Nursing and Allied Health Literature (CINAHL), Cochrane, Excerpta Medica dataBase (EMBASE), and the Medical Literature Analysis and Retrieval System Online database (MEDLINE). Index terms used for the search include ("discharge planning" OR "Patient Discharge" OR "transitional care" OR "bridging") AND ("SUD") AND ("Mental Hospital" OR "Mental Institution" OR "Psychiatric Hospital") AND ("Preparation" OR "Intervention"). Google Scholar and Google were also used to search for additional articles related to the topic. References of relevant articles were also searched to increase the number of available articles.

Only those studies that met the following inclusion criteria were included: published in the English language within the last five years, reported studies, systematic reviews, narrative reviews about discharge protocols or interventions for SUD patients, and included interventions involving both pre and post-discharge components. Since it is difficult to conduct randomized controlled trials in mental healthcare settings, non-randomized studies and narrative reviews were also included. Furthermore, articles reporting specific interventions such as psycho-education were included. After the search, the abstracts of the articles were reviewed independently to determine their relevance. Data extraction involved summarizing the articles' main components and reported studies, including their rationale, research question, theoretical frameworks, design, findings, and limitations. In total, only nine articles were found to be relevant to the topic.

Findings

Family and Individual Psychoeducation

The field of discharge planning, especially for SUD patients and those who have relapsed substance abuse, remains underdeveloped. In their narrative review of studies reporting interventions for treating SUD and SUD relapses, Flanagan et al. (2016) contend that the development of such interventions is still at its nascent stages. However, they claim that the main approaches for treating SUD and the occurring relapses include exposure-based therapy, pharmacotherapy, and psychosocial modalities. Prolonged Exposure Therapy, a form of cognitive-behavioral therapy, is highly effective in treating SUD and reducing SUD symptoms and is thus safe, effective, and acceptable. Other treatment approaches include Seeking safety, cognitive processing therapy, couple Treatment for Alcohol Use Disorder, and Transcendental Meditation (Flanagan et al., 2016). However, the applicability of the findings of Flanagan et al. (2016) is limited as the evidence's reliability is likely to suffer from selection bias, as the authors did not use a systematic approach to select and appraise the evidence. Furthermore, the article does not discuss how these interventions are applied during pre-and post-discharge preparation of SUD patients' preparation for transition.

Pre-and-post discharge interventions targeting family members before patient discharge could improve patients' mental health outcomes since the family environment influences the association between SUD and its relapse. In their project involving a sample of 99 adults aged between 18 and 25 years, Gilhooly et al. (2018) reported that a positive family environment, including social support and positive interactions, allowed the adults to cope with withdrawal symptoms of SUD, thus reducing their willingness to engage in substance abuse. The project employed the Traumatic Events Screening Inventory of Children to collect information about

trauma and the Molina's Substance Use Question to collect information about SUD behaviors. Analysis of the data using hierarchical regression and correlation revealed a link between family environment and substance abuse relapse (Gilhooly et al., 2018). The findings are limited by the sample size and the lack of heterogeneity in the number of substance abuse disorders evaluated during the research.

Psychoeducation is one of the most frequently used interventions for targeting family members to improve discharged mental patients' outcomes and reduce readmissions. Niksalehi et al. (2019) evaluated the effect of family psycho-education in reducing readmission in a sample of 4049 caregivers providing care to 2192 critically ill mental health patients. The psycho-education focused on knowledge about the patients' illness, symptoms and risk factors, prescriptions and medications, early detection and relapse signs, and relapse prevention. The primary outcomes were readmission rates, data before and after implementing the intervention being analyzed using a paired-sample t-test. Readmission of the patients fell from a mean of 1.5 between 2009 and 2011 before the intervention to 0.46 after the intervention during 2011-2014, indicating the effectiveness of family-focused psycho-education. However, the findings should be interpreted with caution as the researchers did not report the patients' specific psychiatric diagnoses.

Family psychotherapy contributes to lower readmission rates and promotes the utilization of mental health services. In their study of the impact of family psycho-education on mental health conditions and utilization of SUD treatment services, Pons, Barron, and Guijarro (2016) recruited 50 parents of children with SUD and assigned half to the intervention group comprising of a psycho-education intervention and a noncausal group. The study's primary outcomes were negative moods, anger state, depression, and self-esteem among the children of the parents and utilization of SUD treatment services. Data from the study were analyzed using a *t*-test and

Mann-Whitney U test to determine the intervention's impact. The study's finding shows a positive relationship between psycho-education and a decrease in negative moods, depression, and anxiety, and an increase in the willingness of the parents to contact mental healthcare providers. The study provides support for psycho-education in increasing the resilience of families with members with mental health problems.

Beyond increasing the resilience of families, individuals, or groups, psycho-education has been found to improve discharged patients' outcomes. Zarnardo et al.(2018), in their systematic review of 26 articles published 2010-2014, reported evidence of the impact of psycho-education regardless of psychiatric diagnosis in reducing readmission rates. The project reported by the scholars had a sample of 82 patients with severe psychiatric disorders. One group received psycho-education, while the non-specific control group received a normal discharge. Family members of the patients were also invited to participate in the study. The primary outcomes were suicide ideation, quality of life, and readmission rates. The patients who received psycho-education had lower levels of suicide ideation, higher rates of quality of life, and lower levels of readmission than the group that did not receive the intervention (Zanardo et al., 2018). While the study is a systematic review, it only included a single-center study, which could not represent the whole population. However, the findings suggest the medium to the long-term efficacy of psych education in improving patient outcomes after discharge.

Further evidence suggests that even brief psycho-education positively affects patients' outcomes after discharge, showing the need to implement the intervention as part of pre-discharge planning. In their systematic review, Zhao et al. (2015) found weak evidence on the efficacy of brief psycho-education in improving medication compliance, relapse rates, social disability, and social function and did not find evidence that the intervention improved the

quality of life of patients. In the study research, the authors were concerned with severe psychiatric problems such as schizophrenia. A total of twenty studies with a sample of 2337 were included in the review; of the twenty studies, nineteen compared routine care plus psycho-education to routine delivery of information (Zhao et al., 2015).

According to Zhao et al. (2015), those receiving the intervention had lower levels of non-compliance in the short term and medium term, but not in the long term. Relapse rates were lower in the intervention group than the control, although these effects were medium-term rather than the long term. Furthermore, some studies reported the ability of brief psycho-education to improve mental status in the short term and lower the incidence of depression and anxiety. Furthermore, there was evidence that brief psycho-education improved social function and social disability, but the effects were not long-lasting. The findings are based on relatively weak quality evidence, and therefore, it is critical to take caution when interpreting the results – and should not be considered conclusive.

While most of the projects rely on quantitative methods to evaluate the effectiveness of psycho-education, the literature search identified a single study reporting the benefits of the intervention from the perspectives of patients. Adnanes et al. (2020) conducted a qualitative-focus study involving 55 psychiatric service users from six European countries to explore the service users' perspectives about readmission and strategies to avoid rehospitalization. The participants were drawn from Slovenia, Romania, Norway, Italy, Finland, and Austria and were allocated to eight focus groups. A systematic text condensation approach was used to analyze the focus group data. All participants had kept in touch with their care providers for over a year and had experienced at least one hospitalization. The participants emphasized that discharge planning

was critical to reducing readmissions. The majority of the participants felt that discharge planning was rare, which led to crises and increased risk of readmission.

The paper by Adnanes et al. (2020) further reported that some participants felt that discussions with care professionals during their admission were helpful, especially when such discussions allowed them to gain information about their condition, treatment options, and how to develop social networks for social support. Furthermore, the participants highlighted the need for more education, as they did not understand the medications or information about their conditions, which they felt were a risk factor for rehospitalization. Notably, the participants argued for the need for follow-up discharge and coordination of their care with community services to ease their transition to community settings (Adnanes et al., 2020). These findings are significant as they illustrate that most mental health patients feel that psycho-education, which provides information on existing conditions, medication, and coping, can contribute to a lesser risk of readmission. A significant strength of the study is that it relied on a sample of mental health patients from multiple countries. However, it was limited by potential selection bias, as the sample was convenient.

Other Interventions

There is a shortage of studies exploring other discharge interventions to increase psychiatry patients' resilience as they transition to community settings. In their review, Hegedus et al. (2020) identified 16 studies comprising three cohort studies, three quasi-experimental studies, and ten randomized controlled trials on the impact of interventions for improving psychiatry patients to community settings. The systematic review reported that most interventions combined case management elements and psycho-education or cognitive behavioral therapy. During follow-up, readmission rates ranged from 13 to 63% for patients

receiving the interventions and 19 to 69% for control cohorts. These findings indicate that the intervention did not contribute to a decrease in readmission, although the quality of evidence is limited.

On the other hand, Benjenk and Chen (2018), in their systematic review of 13 studies, reported that only three intervention studies reported significant findings in a reduction in readmission rates in the intervention group compared to the comparison group. One of the studies combined psychotherapy and health telemonitoring, another combined group and individual psychotherapy, while another focused on home-based management of depressive symptoms. The findings suggest that discharge planning and interventions could improve patients' outcomes after discharge, although the quality of the evidence is low. Benjenk and Chen (2018) concluded that there was a need for further research to determine the effectiveness of health interventions targeting patients' mental health.

The literature search identified nine articles relevant to the research objective. However, the articles were not homogeneous, focused on different samples with different psychiatric disorders and interventions. Such heterogeneity across the studies means that it is difficult to interpret the reviews and identify the most effective discharge intervention. However, the articles support family and individual psycho-education as a discharge intervention for improving patient outcomes, including improving mental health outcomes and reducing readmissions. Despite the evidence, it is critical to note that most of the studies did not report the intervention targeting patients with SUD and relapsed SUD. One potential explanation is that the development of interventions for the patient cohort is still at its nascent stage, which means little research on the subject. Given that psycho-education benefits patients, regardless of the psychiatric diagnosis, it could be beneficial for the patient cohort with SUD and those with relapsed SUD.

Purpose/ PICO Clinical Questions/Objectives

Purpose

The purpose of this project was to develop an educational intervention program and introduce it to HCPs caring for SUD patients at the Community Health Care Center. By empowering HCPs through the educational intervention program to assist SUD patients, readmission cases due to relapses and withdrawal symptoms were reduced.

PICO/Clinical Question

Population = health care providers

Intervention = psycho-educational intervention

Comparison = no intervention

Outcome = Improve HCP's knowledge when discharging SUD patients.

Clinical Question

Can an educational intervention improve provider knowledge when discharging SUD patients? Will implementing an educational intervention program (I) for HPCs (O) be more effective in reducing the risk of relapse and readmissions of SUD patients (O) There were no comparison (C).

Objectives

The project's general objective was to determine the impact of educating HCPs on discharge planning on substance abuse outcomes among patients receiving care at the Community Health Center located in Arizona. The specific objectives were:

- Provide an educational intervention to health care provider and staff to improve their knowledge when discharging patient with substance abuse.
- Proper use of the Addiction Severity Index (ASI) screening tool.
- Patient education technique
- Medication adherence assessment
- To analyze family education effect using the Support and Family Education (SAFE) Program on SUD patients' post-discharge outcomes.
- To evaluate the impact of therapies on the rate of relapse among SUD patients.
- To improve healthcare providers' (HCP's) knowledge on discharging of patients with substance abuse.

Definition of Terms

The following terms are incorporated into the project:

Healthcare Practitioner (HCP): HCP is any paid or unpaid person working in a healthcare setting and providing healthcare services. HCPs may include physicians, nurses, therapists, and nursing assistants (Centers for Disease Control and Prevention, 2019).

Evidence-based practice (EBP): EBP refers to integrating research evidence that incorporates clinicians' expertise and the values of patients (Stannard, 2019).

Transitions theory: Transition theory's focus is on the patient's experiences, their responses, and the impact of transitions on the well-being of patients and their families (Weiss et al., 2017).

The Individual and Family Self-Management Theory: The individual and family self-management theory is a descriptive theory that provides the basis for an in-depth understanding of self-management for patients' post-discharge period (Gan, 2019).

Discharge planning: Discharge planning refers to the process of developing an ongoing individualized program of support and care that meets the patient's needs on leaving the health facility (Gowda, 2019).

Conceptual Underpinning and Theoretical Framework of the Project

The transitions theory and the Individual and Family Self-Management Theory (IFMST) guided the development and implementation of the post-discharge educational intervention program. Weiss et al. (2017) and Gan (2019) applied the IFMST framework and found that the theoretical framework was useful in enhancing self-management practices among patients. The ISFMT framework was suitable for the current project because it helped to analyze the role of HCPs in ensuring that they had post-discharge knowledge specific to SUD patients. Gan (2019) posited that the ISFMT enabled an HCP to assess the impact of physical, environmental, personal, current factors on substance help analyze being discharged. Therefore, obtaining such information contributed to the post-discharge educational intervention for the HCPs at the IHS working with SUD patients. The transition period may inhibit or facilitate patients' transitional process. Post-discharge-knowledge was a vital aspect of nursing therapeutics. Therefore using the ISFMT framework enhanced the HCPs' knowledge and skills in self-management practices essential during the discharge period for SUD patients (Weiss et al., 2017).

Patients prefer a professional HCP perspective on the most appropriate transition period activities during occupational therapy (Lindmark et al., 2019). Therefore using the transitions theory in the educational intervention program enhanced the HCP's knowledge on post-discharge activities vital for SUD patients. Besides, Weiss et al. (2017) further explained the various transition theory aspects like the nature of transition, the nursing therapeutics involved,

conditions for the transition process, and the response pattern applied in the development of the project.

Methodology

Setting and Participants

The EBP project was a quality improvement project. The EBP project was implemented at a Community Health Center in Arizona. The participants were recruited from the clinic, and fourteen individuals took part in the current study project. Purposive sampling was used as the sampling technique, and this sampling methodology enabled the researcher to draw a sample of participants from a target population based on specific characteristics (Ames et al., 2019). To be included, a participant had to be an HCPs employed in the selected facility and had to have more than two years of experience working with SUD patients. The training was conducted online via the Zoom platform. No face-to-face meetings were conducted.

Description of Approach and Project Procedures

The student ensured that the project's objectives were attained and ensured that the EBP project adhered to the pre-determined timeline. During the educational intervention, the student educated the HCPs on the post-discharge strategies suitable for SUD patients, and the use of the Addiction Severity Index (ASI) screening tools. HCPs were educated about psycho-education strategies because it was considered the most effective. The Addiction Severity Index (ASI) is an assessment tool widely used in the evaluation of substance abuse patient during discharge. (Weiss et al., 2017).

The Educational program was structured in a way that responded to the three main topics of the QI project: Assessment guidelines, Medication adherence, and Patient Education.

Specifically, the findings of the literature review led the foundation for the development of the pre and posttest questionnaire. Additionally, the HCPs were also educated about the therapies they might use during post-discharge, like cognitive behavior therapy and supportive group therapies.

The student developed a protocol for the discharge education intervention on SUD patients. Three training sessions spanned four weeks and were done remotely. Each session lasted 15 to 20 minutes to simplify scheduling. HCPs were trained on discharge strategies and skills using PowerPoint presentations. Other technologies used included emails and video conferencing. The educational materials were sent via email, and the sessions were done through video conferencing using the Zoom platform. HCPs were taught about psycho-education, the Addiction Severity Index screening tools, and therapies to be used while discharging SUD patients. Evaluation of the project outcomes was then measured. The project timeline is shown in Appendix A.

Protection of Human Subjects

The student obtained email contacts of HCPs working with SUD patients from the HR department after approval from the management at the primary care clinic. Approval for this project was also obtained from Florida International University, as indicated in the IRB's approval letter. Also attached in the email was the informed consent form that described the project objectives, informed the participants of their right to either participate or not, discussed how participants' data would be protected, and that there would be no compensation for participating. Only participants who signed the informed consent form were included in the EBP project. Participant privacy was ensured by allowing access to only authorized personnel. IRB's approval letter and informed consent are shown in Appendix B.

Data Collection

Data collection was done using pre and post-test questionnaires designed and distributed via email using Qualtrics software, (Appendix A). Most of the questions were closed-ended. These questions gauged the knowledge levels of the HCPs regarding discharge procedures for SUD patients. These questions assessed the knowledge of HCPs of discharge guidelines, medication adherence, and patient education, such as the knowledge of using the Addiction Severity Index (ASI) screening tool.

Challenges

A range of different challenges had to be addressed for successful program implementation. These challenges included sustainability and resource challenges, limited technological knowledge, lack of time, cultural and social challenges, and administrative barriers (Jawad et al., 2018).

Limited technological experience posed a challenge to the project implementation. For instance, some users were not experienced in using online means of communication and were nervous during the training, therefore, hindering effective communication. To address this barrier, online tutorials were offered before the actual training.

Hardware issues during the training and software incompatibility were also challenges. Some software applications did not work optimally with some devices. This barrier was minimized by choosing a software application that would run on most machines. The trainees were given the liberty to choose their preferred application. Pre-testing of the applications was done before the initiation of the training.

Data Management and Analysis Plan

The EBP project data were collected remotely and stored in a password-secured laptop that was only accessible to the student. The project data was stored until the end of the project, then destroyed. The analysis was done using MS Excel Software.

Results

The results of the pre/post-test survey were compared to evaluate the project's impact. Inferential statistics were used to analyze and interpret the data. Percentage and frequencies were obtained and then compared between pre-test and post-test. The pre/post questionnaire was used to compare the differences between pre and post-discharge education interventions. All data regarding participant knowledge, perceptions, and practices regarding knowledge of HCP while discharging patients with SUD were collected anonymously.

Demographic Characteristics

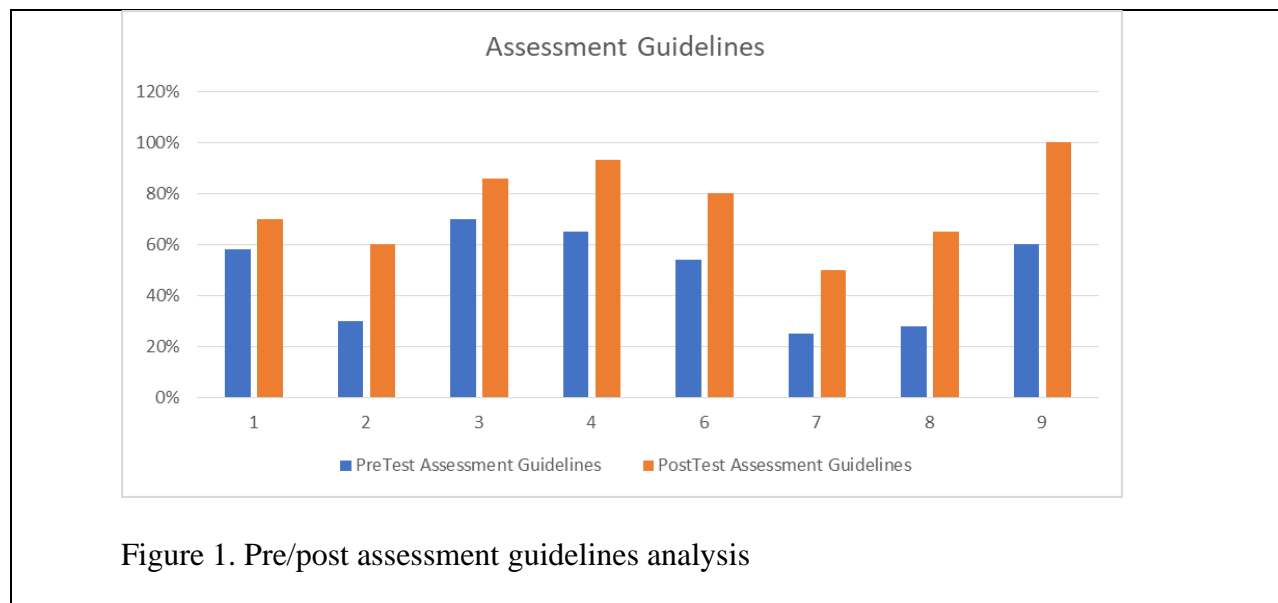
A total of fourteen participants consented to participate in the project, and all of the participants completed the entire program. The demographic characteristics of respondents who completed the course can be found in Table 1. Participants were mostly female $n = 10$ (70%) and Black African American $n = 11$ (80%). The majority of the participants were APRNs $n = 7$ (50%).

Table 1. *Demographic Characteristics of the participants (n = 14)*

	n	Percent
Gender		
Male	4	28.6%
Female	10	71.4%
Race		
White	3	21.4%
Black or African American	11	78.6%
Age		
Under 50	8	57.1%
50 or above	6	42.9%
Position		
APRN	7	50.0%
RN	5	35.7%
No Response	2	14.3%

Assessment Guidelines

After the interventions, 70% gauged their knowledge level of discharging SUD patients between 7 and 10, on a scale of 1-10 where 10 is the highest level of practical knowledge in managing patients with drug abuse, and 0 represents the lowest level of practical knowledge in this respect. For example, participants demonstrated a higher level of knowledge in the use of the Addiction Severity Index (ASI) screening tool during discharge. In addition, as opposed to before the intervention, where only 54% were conversant with at least one screening tool, 100% were now conversant with at least one screening tool for substance abuse. Figure 1 shows the change in assessment guidelines before and after the intervention.



Medication Adherence

At the pre-test, participants were asked to indicate what they considered medication adherence to prevent relapse. Sixty-five percent of the participants were aware that medication

adherence referred to when the patient takes the medication as prescribed at least 80 % of the time. However, 40% of the participants did not use any standardized tool to assess patient's adherence and discharge instructions. The majority of the participants (70%) considered it necessary to assess patients with substance abuse willingness to continue care after discharge. Seventy percent of participants cited lack of knowledge about unintended consequences as the main reason patients with substance abuse fail to concord with medication.

After the intervention, all the participants (100%) indicated that they would utilize a standardized tool to assess patient's adherence and discharge instructions. All participants considered it necessary to assess patients with substance abuse willingness to continue care after discharge. Unlike before the program, where only 65% of the participants were aware that medication adherence referred to when the patient takes the medication as prescribed at least 80 % of the time, 78% were now aware. Figure four shows the difference in knowledge pre and post-intervention

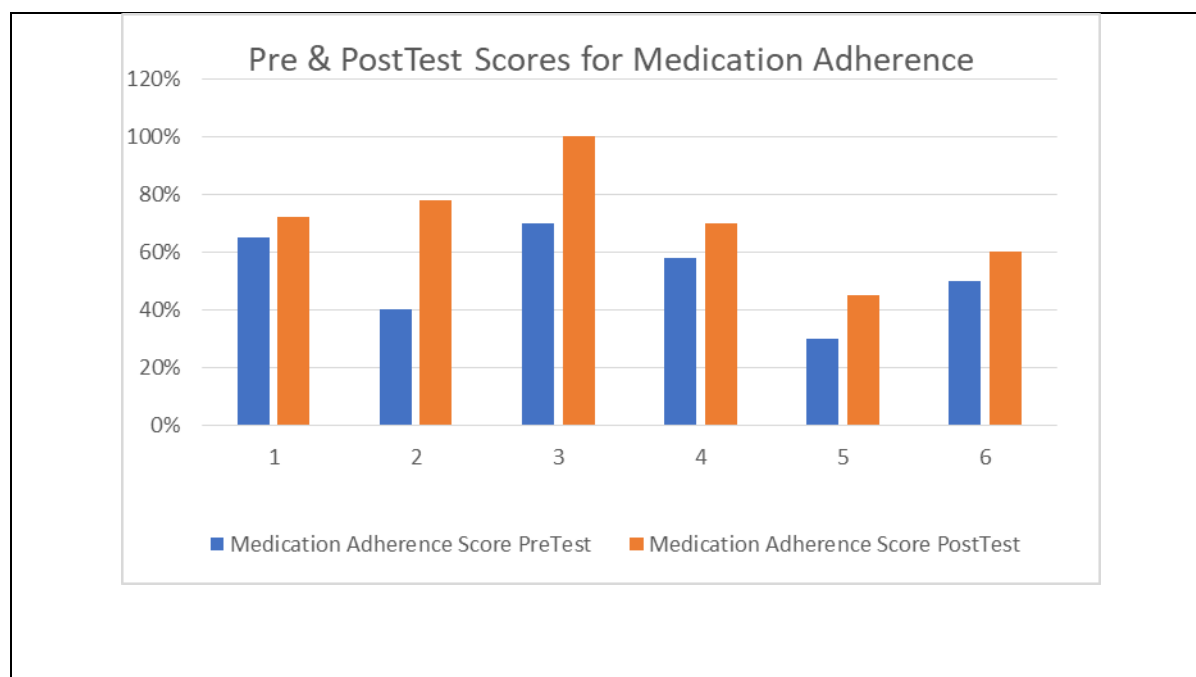
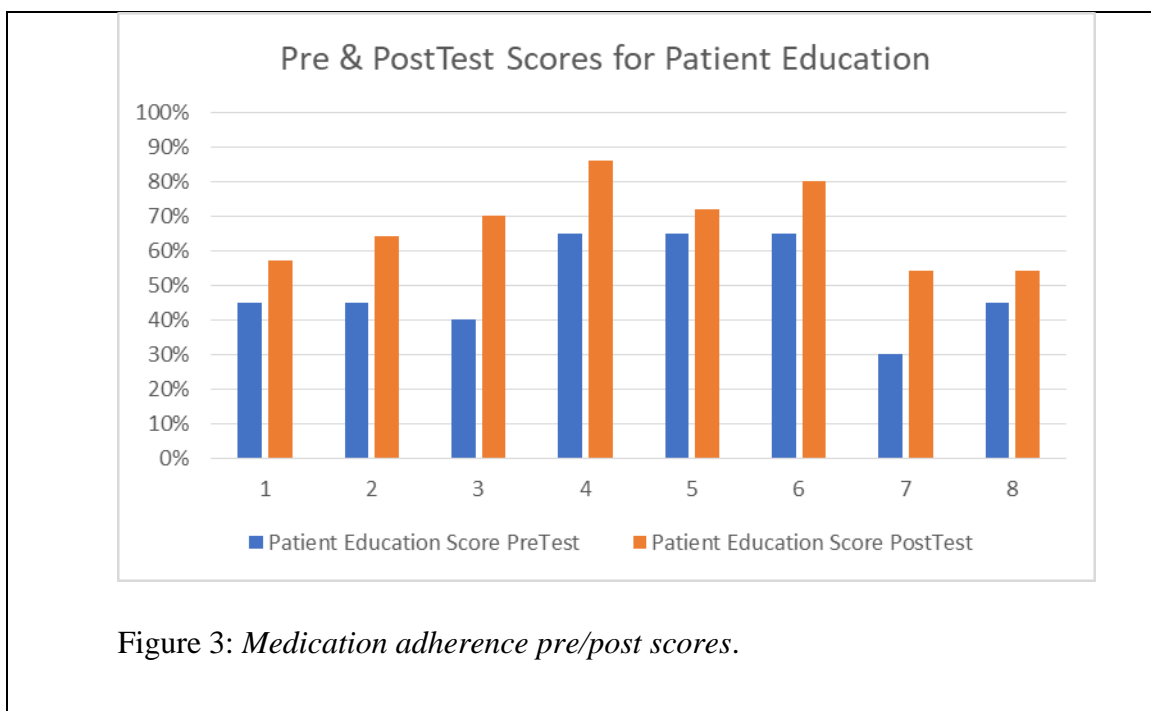


Figure 2: *Medication adherence pre/post scores.*

Patient Education

In assessing knowledge on patient education, the participants were asked how often they provided patient education about substance abuse and healthcare and its consequences. At the pre-test, half of the participants frequently provided patient education but not always. The majority of the participants (65%) strongly agreed that patients should have an active role in creating a treatment plan and should be involved in decision making. 65% of the participants also agreed that patient education should include discussing lifestyle, medication side effects, follow-up and adherence, and medication prices.

At post-test, eighty-six percent of participants strongly agreed that patients should have an active role in creating a treatment plan and should be involved in decision making. 80% of the participants also agreed that patient education should include discussing lifestyle, medication side effects, follow-up and adherence, and medication prices. Figure 3 indicates the pre and post analyses scores on patient education.

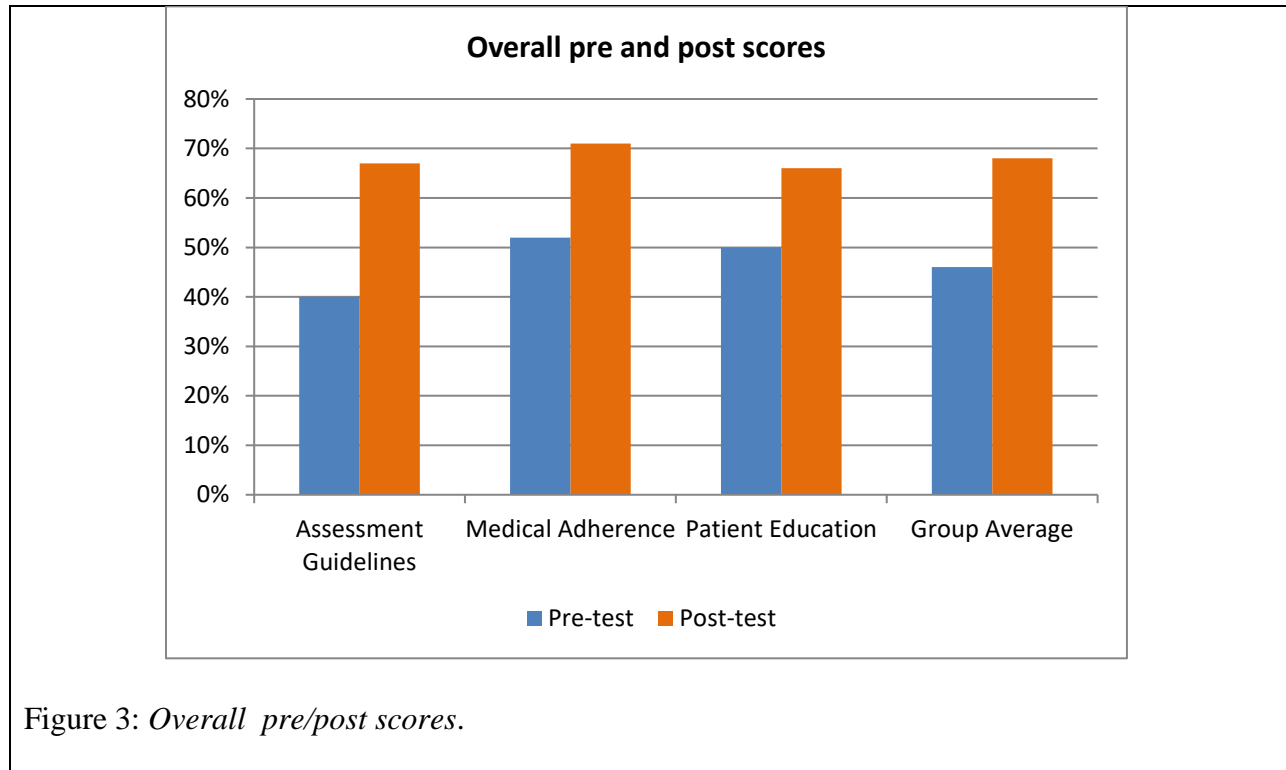


Summary

In general, there was an improvement in the average scores between the pre-and post-test questionnaires (Table 2 and Figure 3). As a group, overall scores improved by 22 percentage points after the educational intervention. Regarding background knowledge of assessment guidelines, average scores increased by 27 percentage points on the post-test. Scores related to medication adherence and patient education increased by 19 and 16 percentage points, respectively.

Table 2. Change in knowledge of scores

	Pre-test	Post-test	Change in percentage points
Assessment Guidelines	40%	67%	27
Medication Adherence	52%	71%	19
Patient Education	50%	66%	16
Group Average	46%	68%	22



Discussion

Overall, average scores improved after the completion of the educational intervention. Improved knowledge on discharging substance abuse also influenced perceptions on different aspects and was associated with improved confidence in utilizing at least one screening tool for screening for substance use. The improved post-test scores suggest that knowledge on various domains, including the substance use assessment guidelines, medication adherence, and patient education, was improved. The improved education levels translated to higher uptake of assessment guideline tools when discharging substance use patients. This shows that an education intervention improved the knowledge of the healthcare practitioners in discharging substance use patients.

Limitations

One limitation of this project was the absence of a control group. Without a control group, it is not possible to be certain that the change occurred due to the intervention or not. Another limitation is related to sampling biases. All participants were recruited at the same clinical site. As a result, the generalizability of these results is limited. Furthermore, the project assessed proxy outcomes that may or may not translate to the actual reduction in patient readmissions.

Implications for Practice

The next step in this quality improvement project should be expanding HCP training to other departments. In particular, the training should be delivered during the onboarding and transition period. HCPs' knowledge should be regularly tested, and if problems are detected, then

additional training sessions should be held. After each training session, it is important to conduct feedback from participants and use this feedback to improve future sessions.

In order to sustain the intervention, in the long run, a systematic plan must be followed. The centerpiece of this plan should be a systematic approach to maintaining the change. Specifically, it is important to put specific steps into the quality improvement plan. This plan, for example, should provide for the quality improvement committee to review the project outcomes at a specified interval by analyzing the readmission and relapse cases of SUD patients and making appropriate adjustments to facilitate further reductions in rates of these events. In addition, the plan should include regular testing of nursing staff's knowledge about patient discharge education.

The most straightforward implication for the advanced practice nursing is that training of the HCP should become a standard procedure. Also, the quality improvement process should not stop here and activities should be undertaken to identify additional improvements. From the policy perspective, advanced practice nurses should be advocated for additional reimbursement to cover education and quality improvement activities. In addition, policies should be implemented to ensure that organizational knowledge does occur. For example, an organization can create an internal wiki-type website that healthcare providers can use to share knowledge with each other.

Conclusions

The discharge from psychiatric facilities to the community or family setting poses an essential phase in a SUD patient's life. Knowledge of proper and informed discharge by the health care providers (HCPs) for the SUD patients is therefore inevitable, not only to reduce the cases of SUD relapses and readmissions but also to improve the quality of life of SUD patients. Through improved HCPs knowledge on discharging SUD patients, this project reduced the

substance abuse relapse cases. In addition, it had a significant impact on the quality of life of SUD patients. The success of the training to improve the knowledge levels of the HCPs on discharging substance abuse patients highlighted the critical need for such training to all HCPS.

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APPENDICES

Appendix A: Letter of Support

February 2nd, 2021

Charles P. Buscemi, PhD, APRN, FNP-BC, CWCN

Clinical Associate Professor

Nicole Wertheim College of Nursing & Health Sciences

Florida International University

Dear Dr. Buscemi,

Thank you for inviting Winslow Indian Health Care Center to participate in the DNP project of Jacqueline Ustache. I understand that this student will be conducting this project as part of the requirements for the Doctor in Nursing Program at Florida International University. After reviewing the proposal of the project titled "Improving Health Care Provider Knowledge when Discharging Patients with Substance Abuse. A Quality Improvement Project." I have warranted her permission to conduct the project in this company.

We understand that the project will be developed in our setting and will occur in two sessions in a four-week time frame and will probably be implemented afterward. We are also aware of our staff participation in supporting the student to complete this project, including warrant the student access to our emails, give consent, deliver the pre-test questionnaire, provide the educational intervention, and four weeks after providing the post-test to the recruited participants. We will provide a peaceful environment to safeguard our participant privacy as well as adequate support to conduct the educational activity.

This project intends to evaluate if a structured educational program targeting providers and staff will improve their knowledge when discharging patients with substance abuse. The project will be conducted with the previous consent of potential participants working in our facilities. Prior the implementation of this project, the Florida International University Institutional Review Board will evaluate and approve the procedures to conduct this project. Evidence suggests that knowledge of proper discharge interventions for these vulnerable patients is critical. Furthermore, increasing providers' and staff's awareness of proper discharge interventions of SUD patients will not only improve their quality of life but also reduce readmission, relapse, and health care costs.

The educational intervention will be online and will last 20-25 minutes. Educational materials will be given to each participants via email. Any data collected by Jacqueline Ustache will be kept confidential. Participants will be sent pre/post-test via Qualtrics anonymously.

We expect that Jacqueline Ustache will not interfere with the normal office performance, behaving in a professional manner and following the office standards of care. As CEO of Winslow Indian Health Care Center, I support the participation of our providers and staff in this project and look forward to work with you.

Sincerely,

Normanda Nez | Administration Office Assistant

Administration/Office of Chief Executive Officer

Winslow Indian Health Care Center

500 North Indiana Avenue | Winslow, Arizona 86047

Ph: (928)289-6100 Fax: 928-289-3447



Appendix B: IRB Approval Letter

Office of Research Integrity

Research Compliance, MARC 414

MEMORANDUM

To: Dr. Charles Buscemi**CC:** Jacqueline Ustache**From:** Maria Melendez-Vargas, MIBA, IRB

A handwritten signature in black ink, appearing to be "M. Melendez-Vargas".

Coordinator

Date: February 22, 2021**Protocol Title:** “Improving Health Care Provider Knowledge when Discharging

Patients

with Substance Abuse: A quality Improvement Project”

The Florida International University Office of Research Integrity has reviewed your research study for the use of human subjects and deemed it Exempt via the **Exempt Review** process.

IRB Protocol Exemption #: **IRB-21-0062** IRB Exemption Date: **02/22/21** TOPAZReference #: **110057**

As a requirement of IRB Exemption you are required to:

- 1) Submit an IRB Exempt Amendment Form for all proposed additions or changes in the procedures involving human subjects. All additions and changes must be reviewed and approved prior to implementation.
- 2) Promptly submit an IRB Exempt Event Report Form for every serious or unusual or unanticipated adverse event, problems with the rights or welfare of the human subjects, and/or deviations from the approved protocol.
- 3) Submit an IRB Exempt Project Completion Report Form when the study is finished or discontinued.

Special Conditions: N/A

For further information, you may visit the IRB website at <http://research.fiu.edu/irb>.

MMV/em

Appendix C: Pretest-posttest questionnaire



PRETEST-POSTTEST

How to Improve Health Care Provider's Knowledge when Discharging Patients with Substance Abuse.

Introduction:

The aim of this questionnaire is to improve Health Care Provider's Knowledge through an educational program when discharging patients with substance abuse.

Kindly answer these questions to the best of your knowledge. Your response will help to assess knowledge gaps in areas which need improvement. The structure of the questions is such that they assess your understanding of managing patients who abuse drugs, assessment of patient concordance with discharge instructions, patient education and follow up care.

Demographic:

Gender: Female _____ Male _____

Age: _____

Ethnicity: _____

Position: _____

Questionnaire:

Assessment of guidelines knowledge

1. Have you received any form of training on managing patients with history of drug abuse, and drug addiction upon discharge? (*Indicate with a tick [✓] next to your answer(s)*)

Yes Not sure None

2. Based on question 1 above, how can you gauge your knowledge on a scale of 0-10? (where 10 is the highest level of practical knowledge in managing patients with drug abuse, and 0 represents the lowest level of practical knowledge in this respect).

0-3 4-6 7-10

3. Please respond to the following statements: (*Indicate with a tick [✓] next to your answer*)

Statement	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
I understand how substance abuse may affect patient concordance with medicines prescribed upon discharge.					
I am knowledgeable about how certain substances of abuse may exhibit pharmacokinetic interaction with medicines prescribed upon discharge.					
I am aware that some medicines dispensed upon discharge may cause new addiction and dependence.					
I usually probe for substance abuse in patients when discharging them.					

4. Do you agree that the opioid crisis was brought about by reckless prescribing? (*Indicate with a tick [✓] next to your answer(s)*)
- Yes
- Not sure
- No
- I've never heard of the opioid crisis
5. Which of the following substance abuse assessment and screening tools are you conversant with? (*Indicate with a tick [✓] next to your answer(s)*)
- The CAGE questionnaire
- the alcohol use inventory (AUI)
- the substance abuse subtle screening inventory (SASSI)
- the addiction severity index (ASI)
- the diagnostic interview schedule-IV (DIS-IV)
6. In patients with a history of intravenous substance abuse, discharge management should include: (*Indicate with a tick [✓] next to your answer(s)*)
- Giving extra syringes and needles to prevent spread of diseases such as HIV.
- Providing comprehensive plan for weaning out from the substance abuse.
- Assigning a follow up counsellor to provide counselling services regularly.
- Testing for deficiency of essential nutrients in the body and providing supplements.
7. In your opinion, should rehabilitative medications such as naloxone, nicotine, and disulphiram be given to patients upon discharge depending on the substance they abuse? (*Indicate with a tick [✓] next to your answer(s)*)

Yes, substance abusers can self-administer these substances

No, these medications should be given only as DOTs

I'm not sure

8. Patient with substance abuse are more likely to be re admitted after discharge than patient that don't use drugs? *(Indicate with a tick [✓] next to your answer(s))*

True

False

Not Sure

Medication and Follow up care adherence knowledge

9. In your opinion, what could be considered medication adherence to prevent relapse?

(Indicate with a tick [✓] next to your answer(s))

When patients take their medication as prescribed less than 80 % of the times

When patient take the medication as prescribed at least 80 % of the times

When patients forget to take their medication often.

When patients fail to take their medication

10. Do you use any standardized tool to assess patient's adherence and discharge instructions?

Yes

Not sure

No

11. Do you consider it important to assess patient with substance abuse willingness to continue care after discharge? *(Indicate with a tick [✓] next to your answer(s))*

Yes

Not sure

Not at all

12. In your opinion, which would be the best method to assess patient continuity of care to prevent relapse? *(Indicate with a tick [✓] next to your answer(s))*

- Patient self-report
- Compliance with medications
- Support System
- Transportation

13. In your opinion, why are patients with substance abuse fail to concord with medication?

(Indicate with a tick [✓] next to your answer(s))

- lack of knowledge about unintended consequences
- Perceived believe of unnecessary treatment
- Memory impairment, forget
- Mistrust on providers decision
- Drug prices, lack of insurance

- Side effects and adverse drug interactions with the substances being abused.

14. Which of the following is considered a consequence of non adherence to any of the medication given upon discharge? *(Indicate with a tick [✓] next to your answer(s))*

- Decrease in hospitalizations and healthcare costs
- Increase in side effect
- Harm to patient's health
- Increase in rates of hospital readmission

Patient education

15. How often do you provide education about substance abuse and healthcare its consequences? *(Indicate with a tick [✓] next to your answer(s))*

Always Frequently

Rarely Never

16. How often do you provide education about the need to quit substance abuse? *(Indicate with a tick [✓] next to your answer(s))*

Always Frequently

Rarely Never

17. How often do you involve patients in the process of decision making?

Always Frequently

Rarely Never

18. Please, answer the following statements (Indicate with a tick [✓] next to your answer)

Statement	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Patients should have and active role in creating the treatment plan					
Patients should be included in the decision making					
Patients should be provided decision making skills					

Patients should be reminded to be adherence and to follow up					

19. Patient education should include: (Indicate with a tick [✓] next to your answer(s))

- Discussing lifestyle
- Medication side effects
- Follow up and adherence
- Medication prices

20. Which interventions can help patients to be more adherence? (*Indicate with a tick [✓] next to your answer(s)*)

- Assessing for adherence in every encounter
- Providing automated reminders (use of technology)
- Providing interactive educational activities
- Providing polypharmacy

