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Video Education Discharge in the Emergency Room to Empower Patients

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Nursing 512: Research

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December 12, 2021

Video Education Discharge in the Emergency Room to Empower Patients

When it comes to low back pain (LBP), approximately 80% of people in the United States have struggled with it throughout their life (Kawi, 2014). Numerous people recover; however, many people will endure a chronic state of pain that persists longer than three months (Kawi, 2014). The unfortunate 20% will have to master coping mechanisms, be proactive in molding their care plan, and change specific modifiable factors to tackle this universal evil (Kawi, 2014).

LBP is a noxious stimulus that is persistent with an increase in the excitability of neurons located in the central nervous system (Allegrì et al., 2016). Over time these standard inputs begin to produce abnormal responses (Allegrì et al., 2016). It becomes essential to be able to identify these stimuli. Back pain can develop in many ways, such as muscles misbehaving by being pulled and strained by the repetition of heavy lifting and abnormal body mechanics. Another aspect that can happen is rupturing disks between spinal vertebrae. Without this cushion, it can put pressure on nerves running through the spinal cord. If a patient lives an active lifestyle, has a higher fitness level, and eats clean meals, a patient is on the right path of recovery (Kawi, 2014). However, LBP can develop into chronic a problem when a patient is not following these lifestyle changes so it's important to educate LBP patients properly.

In research from American College of Emergency Physicians (2021) All Emergency Departments (ED) in the United States of America are confined to a labor act called The Emergency Medical Treatment and Active Labor Act (EMTALA). This labor act requires the ED to inspect and manage all patients seeking medical treatment no matter the circumstance (American College, 2021). EMTALA aims to guarantee that any person with an emergency/urgent medical condition will receive an unbiased evaluation and stabilization before

being transferred or discharged (Lynn & Florea, 2021). Because of this primary mandate, there is an influx of recurrent ED visits, which overpopulates the units. Recurrent patients utilize funds and resources and pull healthcare providers and nurses away from other patients who may need the higher level of care that EDs provide.

The following PICO question is the foundation of this proposed quality improvement project: Among adults treated in an emergency room (P) for back pain, does video discharge education (I) improve comprehension (O) when compared to verbal discharge education only (C)? answer the PICO question: Among patients discharged from the Emergency Department with a diagnosis of Low Back Pain, will video discharge instructions as compared to verbal discharge instructions improve understanding of post-discharge self-care?

Background and Significance

Nursing research and evidence-based practice are indispensable parts of nursing and education. This paper exhibits the evidence to support an evidence-based quality improvement project using video discharge education in the ED and an overview of the proposed project process. The number one rationale for discharge instructions is to ensure that all patients are discharged safely and understand their diagnosis, treatment, follow-up care, and return instructions identified as the four domains of discharge instructions

Discharge education is already a complex challenge in the primary care setting; however, it becomes even more challenging when discussed within the context of an ED. Because of the nature of the ED, patient visits are essentially unplanned or unexpected, which enhances the patient's stress, shifting their focus on the acute situation than on obtaining and comprehending information that is taught at the end of the visit (Wilkin, 2020). Secondly, the ED atmosphere is quite different from other outpatient settings. The ED is often crowded and active, leading health

care professionals, including the nurse practitioner (NP), to briefly educate patients on the four aims of discharge and hastily proceeding to the subsequent patient.

Many patients do not comprehend their ED care or discharge instructions (Wilkin, 2020). With 78% of patients demonstrating poor comprehension, most patients with comprehension deficits failed to perceive them (Wilkin, 2020). It becomes imperative to effectively disarm this challenge of miscommunication between patient and NP to develop a more effective way of fulfilling discharge education because of the staggering percentage of patients not comprehending information given at discharge.

Aims of the Project

Numerous patients are discharged from the ED without understanding the discharge domains (Engel et al., 2016). This lack of understanding can result in incomplete treatment with decreased health outcomes (Engel et al., 2016). In collaboration with Johns Hopkins, the Agency for Healthcare Research and Quality [AHRQ] (2014) published an environmental scan and literature review of the discharge process from the emergency department, stating that "a high-quality ED discharge included three main characteristics:

1. Informs and educates patients on their diagnosis, prognosis, treatment plan, and expected course of illness. Including informing patients of the details of their visit (treatments, tests, procedures).
2. Supports patients in receiving post-ED discharge care. Including medications, home care of injuries, medical devices/equipment use, further diagnostic testing, and further health care provider evaluation.
3. Coordinates care within the context of the health care system (other health care providers, social services, etc.)."(Johns Hopkins, 2014).

This project implements evidence from previous studies into clinical practice to improve communication between provider and patient and increase discharge instruction' comprehension, utilizing the quality discharge characteristics above to guide a proper ED discharge.

Intervention

The proposed project will use an educational video on back pain and its management to replace standard verbal instructions given at discharge. The project's goal is to increase patient knowledge on self-care for LBP. Increased knowledge will be determined by looking at post-educational survey scores between patients that receive verbal discharge instructions and those that receive video discharge instructions. By improving understanding, we can decrease fear and anxiety related to controlling symptoms, reduce unnecessary hospital visits in the future, and reduce the workload of EDs.

Improving Patient Outcomes

Education is the best method for achieving better patient outcomes and decreasing hospital admissions and readmissions (Pugh et al., 2021). Education can reduce the high health care costs for recurrent visits and minimize resource costs (Pugh et al., 2021). When using the standard form of discharge, there is a wide variation in knowledge compared to video education. It has also shown that because of the stressful setting of the ED, other forms of education are better for comprehension (Sheikh et al., 2018). Providing better education can improve ED wait times, resulting in better outcomes, and increase patient safety by medication adherence (Morley et al., 2018).

Another critical factor when determining which forms of education would be better for everyone, is to integrate concepts related to social determinants of health and health literacy (Sheikh et al., 2018). This quality improvement project is solely looking at immediate recall that

may not be correlated to long-term understanding, and more research may be needed to determine the link between immediate and long-term understanding. To compensate for the variables impacting patient education, it become imperative to utilize a theoretical framework on how to educate patients more effectively.

Theoretical Framework

Over the last century, numerous adult learning theories have gained influence. There is no single theory that illustrates how and why adults learn best; however, each issue data on a particular perspective of adult learning (Cummings et al., 2016). Kurt Lewin's change theory and the Health Belief Model (HBM) are prime examples of how change can be addressed and applied as a framework for this project

Change Theory

Kurt Lewin, a Polish intellect who died at a surprisingly young age of 56, is widely recognized for his scholarly prowess and considered the founding father of change management by many (Cummings et al., 2016). Lewin started developing his best-known work, Three-Step Change Model, and the primary concepts that drive change (Burnes and Bargal, 2017).

Three notable concepts operate within the Three-Step Change Model: driving forces, restraining forces, and equilibrium (Petiprin, 2020). Driving forces are those that shift the direction that causes change to occur (Petiprin, 2020). This shift is crucial because it affects the equilibrium and empowers the person/place to go in the desired direction. The forces that resist change or oppose this shift are called the restraining forces (Petiprin, 2020). They overpower a person/place in the inverse direction. Equilibrium exists when both opposing forces are equal, yielding no change (Petiprin, 2020). To adjust equilibrium is to adjust between the driving or

restraining forces. Applying these concepts helps to understand Lewin's classic approach to managing change.

The first step in the Three-Step Change Model is termed "unfreezing." Unfreezing is where a person's lifestyles, customs, or habits are released from the static mold (Burnes and Bargal, 2017). Lewin states that "it is necessary to break open the shell of complacency and self-righteousness in order to change attitudes and behaviors (Burnes and Bargal, 2017)." It is paramount that individual needs and emotions are to be jumbled to reach catharsis. The second step or the "moving" step is when the actual change occurs. Education is thoroughly presented to reach a positive change and the focus of this project (Burnes and Bargal, 2017). The third step is the "refreezing" stage and is where new habits that were presented are now adopted and institutionalized (Burnes and Bargal, 2017).

Health Belief Model

In 1950, a group of social psychologists working within the U.S. Department of Health aspired to explain why people rarely engaged in programs to prevent and detect disease resulting in the development of the theoretical model called the Health Belief Model, which stems from psychological and behavioral theory. This approach remains one of the most widely recognized theories from the field of motivational theory (Rimer & Glanz, 2005). They hypothesized that people's views about whether they were susceptible to disease and their perceptions of the benefits of avoiding it influenced their readiness to act (Rimer & Glanz, 2005). They generated four constructs; however, recent researchers extended upon this theory, concluding that six primary constructs influence people's decisions about preventing, screen for, and controlling illness (Rimer & Glanz, 2005).

The first construct of the Health Belief Model is the concept of, perceived susceptibility, or the belief in the possibility of contracting a condition (Rimer & Glanz, 2005). The second is when a patient understands the state has severe outcomes (perceived severity) (Rimer & Glanz, 2005). To effectively change health behaviors, the individual must believe in both susceptibility and severity. The third construct is the belief that if action is taken, there will be decreased susceptibility to the ailment or severity (Perceived benefit) (Rimer & Glanz, 2005). The Fourth construct ties in another source or barrier to change. For example, if the patient believes the amount of money it costs for prevention outweighs the services, the change will not occur (perceived barriers) (Rimer & Glanz, 2005). The fifth construct or Cue to Action is the amount of exposure a patient gathers through media prompting action (Rimer & Glanz, 2005). The sixth and final construct is the patient's idea of the success rate of acting (Rimer & Glanz, 2005). If the patient thinks that action will result in failure the readiness to act will be argued (Rimer & Glanz, 2005).

Theory Influence on Advance Practice

Over the past century, psychologists and researchers have developed various theories to illustrate how individuals receive, organize, and use skills and knowledge (Aliakbari et al., 2015). In the ever-evolving healthcare system, whether changes in best practices, advances in modern technology, or the need to educate, change must inevitably happen. Healthcare can employ the work of Lewin's three-step change theory and the Health Belief Model.

In the crucial initial step of Lewin's theory, willingness or motivation requires identification and serves as the beginning of developing this project's framework. As an advanced practice nurse, showing guidance and preparing team members for change education is an essential step. First what is needed is to break down the customs of using the standard verbal

discharge instructions for providers and nurses. This unfreezing needs to happen to evoke a change. Then once someone is motivated to change it becomes imperative to show the importance of using video discharge education over verbal discharge instructions. Preparing involves educating team members and noting the pros of the change (Driving force) and cons that oppose the driving force (restraining forces) (Connelly, 2020). If the pros surpass the cons, then the change should be executed. However, when the cons overshadow the pros, then the change will not happen. The third and final step is where the nurse practitioner “refreezes” the new custom of video discharge. leading to a new standard of care (Connelly, 2020).

The first construct has already been met when applying the HBM to the project. The patient is present in the ED for LBP and has completed the need of susceptibility. However, to effectively change health behaviors, the individual must believe in susceptibility and severity. So, it's crucial to provide patients with the outcomes of not treating LBP through the discharge instructions (verbal and video). Another aspect that will be included in the discharge instructions is that when action is taken (medication, non-pharmacological treatments), it decreases the susceptibility of low back pain. This consists of a real story of someone with LBP (fifth construct) and the benefit they saw in their account. In addition, it is also crucial to address barriers and list success rates of treating LBP. Finally, thoughts of failure must be diminished and guided through the discharge instructions.

Literature Search

Databases were searched to identify research studies relating to discharge instructional methods in the ED, including PubMed, Google Scholar, and Cumulative Index to Nursing and Allied Health Literature (CINAHL). Thirty-five articles were screened, and nine articles that met the criteria for studies relating to video or verbal discharge instructions were included in the literature review. There are multiple themes throughout this research process: low back pain patients, video discharge vs. verbal discharge instructions, and discharge survey tools. The data accumulated were full-text and peer-reviewed articles ranging from metanalysis to randomized control studies. Most pieces of literature collected were published within the past five years. However, an environmental scan of the discharge process was included even though it did not meet the five-year limit because it included the criteria for a quality ED discharge set of instructions that will be utilized when developing the intervention (Johns Hopkins, 2014). The following keywords were used in various combinations when searching for empirical literature: emergency room, ED, patient education, patient discharge, patient discharge instructions, adults, video, verbal, back pain, low back pain, and lumbago.

Low Back Pain Patients

Patients diagnosed with low back pain (LBP) are frequent users of ED services (Ginsberg et al., 2021). They represent approximately six percent of all ED visits annually (Ginsberg et al., 2021). A cross-sectional study by Ginsberg et al. (2021) surveyed 836 ED patients discharged from the ED after management for LBP. Ginsberg et al. (2021) estimated that approximately 20-30% of patients with the chief complaint of LBP had increased returns to the ED for further treatment within 30 days. Because of the high proportions of return visits, educating patients on managing their treatment becomes imperative.

Rhon et al. (2021) assessed the benefit of using technology education media for patients initially treated for low back pain in a randomized controlled trial involving 208 individuals between 18 and 50 consulting in a hospital-based primary care clinic (Rhon et al., 2021). Participants were randomized to either a guided video-based educational session or a typical verbal educational session (Rhon et al., 2021). When juxtaposing the results, there were no significant differences between the two groups on receiving higher levels of treatment such as opioid prescriptions, advanced imaging, analgesic patches, spine injections, and physical therapy (Rhon et al., 2021). However, the researchers further concluded that when video-based educational sessions were conducted early, it decreased patients seeking LBP healthcare in the following year (Rhon et al., 2021).

Platts-Mills et al. (2018) conducted a randomized control trial of 75 participants treated and discharged from the ED with LBP. The inclusion criteria were a moderate to severe pain score, > four out of 10, and ADLs affected (Platts-Mills et al., 2018). Patients selected were then organized into three arms. “1: usual care, 2: a brief educational video only, or 3: a brief educational video plus a protocol-guided follow-up telephone call from a physician 48–72 hours after discharge (Platts-Mills et al., 2018).” Platts-Mills et al. (2018) results showed better outcomes than Rhon et al. (2021), with fewer patients receiving a prescription for an opioid. Further stated that video education dropped the pain score on average of 2.2 at the one-month ED follow-up (Platt-Mills et al., 2018). Supplying a video of how to care for LBP at home can decrease low back pain compared to the standard discharge (Platts-Mills et al., 2018).

Verbal vs. Video Discharge Instructions

Verbal Instructions

Engel et al. (2016) explored ED patients' discharge comprehension on the four domains stated above. The researchers conducted a cross-sectional study on 140 discharged adults in two EDs in southeastern Michigan (Engel et al., 2016). After verbal discharge education only, the results revealed that 22% of patients demonstrated comprehension in all four domains. Seventy-eight percent showed poor understanding in at least one domain. Seventy-one percent of patients failed to recall information in two or more domains, and four percent of the study group demonstrated poor comprehension in all four domains (Engel et al., 2016).

Hoek et al. (2020) conducted a comprehensive meta-analysis of various communication tools to provide discharge instructions in the ED. A meta-analysis of 12 studies related to verbal discharge instructions revealed similar findings to Engel et al. (2016). (Hoek et al., 2020). Researchers investigated the recall of verbal discharge instructions, and results differed widely, ranging from eight percent to 94%, with the most accurate recall on the discharge domain of diagnosis (82%) and all discharge instructions correctly recalled by 43% (Hoek et al., 2020). The study participants were evaluated on their knowledge of prescribed medications (Hoek et al., 2020). Thirty-seven percent of the patients answered none of the questions correctly, 57% of patients could recall the purpose of the medication, and 62% could identify when to receive the medication (Hoek et al., 2020). Finally, only eight percent of patients could correctly answer all medication use questions (Hoek et al., 2020).

Similarly, Sheikh et al. (2018) suggests that verbal discharge education may be insufficient to ensure that patients are appropriately educated. A dual-phase study that included live observations of discharge instructions and a subsequent in-person patient survey was

conducted (Sheikh et al., 2018). Researchers selected a convenience sample of 100 patients, with a mean age of 46 years old, released from the emergency department (Sheikh et al., 2018).

Almost one-third, 28.6%, of patients had no or inferior comprehension of their diagnosis (Sheikh et al., 2018). Thirty-two and a half percent of patients had no or inadequate knowledge of their treatment plan, 24.4% of patients had no incomplete knowledge of their follow-up plan (Sheikh et al., 2018). The least understood domain was the return to ED instructions, with 63.8% of patients having no or inadequate knowledge of when to return to the ED for reassessment (Sheikh et al., 2018).

Video Instructions

A metanalysis investigated the recall of video discharge instructions in seven studies (Hoek et al., 2020). Findings of the studies indicated that discharge instructions improved memory significantly when video media was used as education after the ED visit. However, studies displayed a broad range of correct recall varying from 54% to 89% (Hoek et al., 2020).

Wischer et al. (2018) examined the possible outcomes of using video education instead of the standard discharge method for patients. An interprofessional team developed and produced a two-part video to teach patients (Wischer et al., 2018). Pre- and post-video knowledge scores were collected, with a pre-video knowledge mean of 88.97% and a post video percentage mean of 96.62% (Wischer et al., 2018). Study results confirmed that these paired samples indicated significantly different scores, suggesting that video instruction significantly affected patients' knowledge, and most patients stated that they believed the videos helped them improve their understanding and confidence in their care (Wischer et al., 2018).

All studies using video discharge instructions revealed significant data improvement of the four discharge domains. The improvement in understanding between verbal and video

discharge instruction was striking. However, there are identified gaps, limitations, and barriers. Population size varied greatly among studies, limiting generalizability to a broader population. In all studies, patients were excluded from research if they were non-English speaking raising the question of racial or cultural influences on study results (Engel et al.,2016; Sheikh et al., 2018 & Wischer et al., 2018).

Several studies compared participant educational levels and discharge instruction understanding (Engel et al.,2016; Sheikh et al., 2018 & Wischer et al., 2018). Health literacy differences may require various forms of education, including video discharge instructions. Hoek et al. (2020) stated that patients with low health literacy had less understanding of discharge instructions than those with high literacy, and patients who did not complete high school tended to have less knowledge of their discharge diagnosis and treatment plan through a standard discharge method (Hoek et al., 2020). However, Sheikh et al. (2018) addressed another vital point among patients with higher educational levels. Most patients in their study had a baseline knowledge of 88.9%, which minimized the degree of improvement on the post-assessment; however, there was a statistically significant improvement with post education at 98.1% despite a higher baseline level (Sheikh et al., 2018). Hoek et al. (2020) illustrated that when a patient is educated through video education, they have a higher percentage of understanding and following through with the information given. Video education does promote better results among all levels of patients, with documented significant improvement among all health literacy levels. However, further studies are needed to identify how patients with different levels of education understand verbal or video discharge instructions as a primary endpoint of the research.

Finally, it becomes imperative to develop a standard workflow for education and post-tests to ensure compliance. Wischer et al. (2018) states that 65.1% completed all educational

videos before the questions, while 34.9% fast-forwarded through some videos. The study would have been more valuable if it had taken the option away for fast-forwarding and presented education better that flowed with the plan of care.

Discharge Survey Tools

Learning and understanding are complex. There were multiple systems of data collection used in these studies and determining which tool may be more effective to evaluate the best form of discharge education was not consistent across studies.

Participants completed an audiotaped interview that assessed their subjective understanding of the information provided by their medical team at discharge (Engel et al., 2016). Patients had to recall the four domains of discharge, rating their perceived comprehension on a 5-point scale (poor to excellent) for each discharge domain and evaluating their satisfaction with the care (Engel et al., 2016). During this interview, participants were allowed to refer to their discharge instructions (Engel et al., 2016). This interview was developed by qualitative research experts who met bi-weekly throughout data collection to measure inter-rater reliability (Engel et al., 2016). This interview was extensively tested with feedback given to change the questions (Engel et al., 2016).

In Wischer et al.'s study (2018), participants were enrolled in a self-directed, untimed short seven-question test written at a seventh-grade reading. The test was developed using content experts and reviewing the literature (Wisher et al., 2018). Patients completed this test prior to video education and immediately following the video session. After scoring the correct answer, the rationale was provided for the patient (Wischer et al., 2018).

Sheikh et al. (2018), participants were enrolled in a survey that had 13 questions utilizing a combination of open and focused questions regarding the four domains of discharge (Sheikh et

al., 2018). During the discharge education, a medical student observed the interaction between provider and patient and documented the instructions given by the provider (Sheikh et al., 2018). Immediately after the provider completed discharge instruction, the medical student conducted a brief, standardized, in-person survey with the patient (Sheikh et al., 2018).

All studies assessed the four domains of discharge by using various survey tools among specific populations. Sheikh et al. (2018) states that there was no standardized survey tool in the literature to assess patient understanding of ED discharge instructions.

Another issue that needs to be addressed in future studies is that the reviewers were not in the room during the education session in Engel et al. (2016). Researchers were solely looking at the EMR and comparing retrospective data (Engel et al., 2016). They had to assume that the patients were educated in the same manner on all aspects of the discharge parameters. Sheikh et al. (2018) addressed this by having a medical student in the room during discharge education. However, this approach also fails to consider that a student could not fully understand the instruction or was biased based on his knowledge about the illness.

Engel et al. (2016) used the audiotaped interview at the end of their visit; however, the questions asked were subjective comprehension and what the patient perceived as correct. Hoek et al. (2020); Sheikh et al. (2018) did not review the perceived understanding.

There are few studies comparing video discharge to verbal instructions in the ED. There are limited studies related to back pain patient understanding of discharge instruction and no studies of back pain patients in a comparison study of verbal versus video discharge instructions and assessment of understanding as an outcome measure. Implementing a standardized video discharge process utilizing a standard set of guidelines is essential to improve understanding of discharge instructions.

Methodology

The Plan-Do-Study-Act (PDSA) is the evidenced-based practice model for this QI project because it is a valuable instrument for testing change within the science of improvement (Institute of Healthcare Improvement [IHI], 2021.) There are four stages in the PDSA improvement model: plan, do, study, act. Each stage has distinct parameters and functions as a guide for quality improvements projects. This model will be at the forefront of this quality improvement project as the method is described methodology.

Plan

The purpose of the quality improvement plan is to answer the PICO question: Among Emergency Department patients diagnosed with low back pain (LBP), will the use of video discharge instructions as compared to verbal discharge instructions improve the patient's understanding of discharge instructions across the four domains. The expected outcome for the study will be that discharge instructions provided through a video platform will enhance patient understanding compared to understanding of verbal discharge instructions. This is supported by previous studies (Engel et al., 2016; Sheikh et al., 2018 & Wischer et al., 2018). In addition, The Agency for Healthcare Research and Quality [AHRQ] and Johns Hopkins, (2014) quality emergency department discharge criteria will be used as the evidence-based framework to evaluate the quality of discharge.

Upper-level and mid-level administration will be needed to execute this evidence-based project. The nurse manager will be necessary to support and assist the primary investigator with the project. Upper-level administration will approve the project and will support the acquisition of required resources such as tablets to play the educational video. Another crucial aspect is

getting three willing participating healthcare providers that work shifts covering all seven-day shifts.

The length of the project is estimated to be 14 weeks. This project will demand eight weeks to prepare, organize and train all staff, wait for tablet deliveries, adjust Sheikh et al.'s questionnaire tool, develop a low back pain standardized discharge instructional video on the four aims of discharge, and produce a script to use when presenting information verbally. Education of staff will be achieved by using a PowerPoint. Training will occur at selected times across days of the week and be done multiple times throughout the eight weeks to ensure total attendance. Anyone involved and unable to complete a training session will be individually educated.

The initial action will be to get permission granted from the hospital system and the Institutional Review Boards (IRB) of the participating University and Roseman University of Health Sciences to proceed with the study. In addition, authorization to use the Sheikh et al. (2018) questionnaire needs to be obtained. Actions to obtain permission and address all copyright laws for instrument use will be reaching out to Sheikh et al. (2018) team through email. The email will petition for the use of the questionnaire for use in the quality improvement project and its post-survey data information that has been gathered will be sent to Sheikh et al. and their team in an anonymous way to prevent a violation of rules surrounding collection of personal health information.

A power analysis was conducted using the ClinCalc.com website to calculate a sample size that will determine if the findings are significantly different (ClinCalc LLC, 2019). A two-groups study using a continuous variable with an α of 0.05 and a power of 80%. The population was calculated based on the annual number of LBP patients seen as a percentage of the total

patient visits. The annual number of patient visits to the University ED is an average of 60,000 patients. Based on the findings from studies in the literature review, an average of six percent of patients annually present to ED for a chief complaint of LBP for an estimated annual number of 3,600 annual patient visits. Nevertheless, because the data-gathering stage of this quality improvement project is limited to four weeks, the total population of estimated LBP patients will be 300. The minimal sample size was calculated to be 37 based on the power analysis.

Project Design (DO)

The study is a descriptive quasi-experimental design with two independent groups receiving either verbal discharge instructions or video discharge instructions for LBP. A purposive sampling strategy will be used to select a sample of patients being discharged with a diagnosis of LBP. Patients will be asked to participate if they are adults and speak English. Exclusions will include children, non-English speaking patients and patients who are unable to receive discharge instructions independently or have a guardian. In addition, only patients seen between the hours of 0700-1900 will be approached to participate in the project. Participants will sign an informed consent form prior to being assigned to an intervention group. Simple random sampling will be used to divide the patients into two intervention groups until the sample size of 38 is reached. Data will be gathered from an equal number of verbal discharge patients with LBP. A discharge instructional video for low back pain will be produced and developed by a team of provider A verbal discharge instructional script for low back pain, synchronized with educational instructions displayed in the video, will also be developed, and learned or read verbatim by the education providers, pharmacists, nurses, and video editors to expand education on the discharge domains. These exact instructions will eliminate bias from the verbal teaching

session. The project will use four functioning tablets with an adjustable, rolling stand for proper video viewing of a six-minute video on low back pain and its management.

Any patient being discharged with a diagnosis of LBP will be asked to participate in the project. The registration personnel will inform the charge nurse when a patient registers with a chief complaint of LBP. The assigned nurse will then request and present a consent form to the patient to participate in the study upon discharge with the diagnosis of LBP, clarifying that they will leave with complete knowledge of the four domains of discharge no matter which group they get assigned to. If the patient consents, the patient will be directed to complete the post-educational survey after being randomized into either the verbal or video discharge group and receiving discharge instructions.

This project will gather data for approximately four weeks at the main campus of the University ED. Data will be collected by trained day shift RN's helping with back pain patients with the help of the ED nurse manager and the three participating providers. Data collection will occur from 0700 – 1900. Data collection will be every day of the week for 14 full 12-hour for each group. In addition, the IT department will also be available remotely to troubleshoot tablet players.

Data Collection (Study)

Sheikh et al. (2018) state that there was no standardized survey tool in the literature to assess patient understanding of ED discharge instructions. To combat this, they developed a survey that had 13 questions utilizing a combination of open and focused questions regarding the four domains of discharge (Sheikh et al., 2018). The Sheikh et al., (2018) his survey will be used as the post-discharge questionnaire. As the instrument is used more frequently, reliability and

validity will increase. A Chi-Square test will be done to ensure that the differences between group demographics is insignificant.

Demographic data including age, sex, education level, and income will be gathered for comparison. In addition to patient demographics, incidence rates of patients with low back pain coming to the emergency department and patient satisfaction scores will also be collected.

The principal outcome is to evaluate the patient's understanding of discharge instructions in the four domains. Evaluation of the post-educational survey will be rated on a 4-point scale. The scale ratings included: no, poor, adequate, and excellent understanding. The three physician reviewers will blindly evaluate understanding using a pre-specified rubric.

“A *No understanding* will be defined as a lack of relationship between what the patient was told and what they reported. A *poor understanding* will be defined as a significant misunderstanding that could potentially harm the patient. An *adequate understanding* will be defined as a misunderstanding that was not expected to result in harm. An *excellent understanding* was defined as having no gaps in knowledge (Sheikh et al., 2018).”

The total number of patients responding in each of the four domains will be added together for each domain within each group. Each of the four discharge domains will be analyzed individually using a two-way ANOVA analysis to evaluate a connection between different patients' characteristics and levels of understanding. In addition, a Chi-square test will also be used to test for statistical significance

There is minimal risk to the population as they will receive their survey after education. No harm or action will be done to the patient. The survey will be completed in Qualtrics XM, and an individual identifier and the data will be uploaded into SPSS, where patients' names and

answers will be separated. There will be no linkage between patient names and the identifiers used to complete the anonymous survey

Evaluation (Act)

The final two weeks of the project will be for evaluation and analysis. Both positive and negative feedback from everyone involved in the project will be collected at this time. The project conclusions will be collected and reviewed by the QI team and results will be presented to the hospital.

Current literature states that video discharge instructions drastically improve understanding (Engel et al., 2016; Sheikh et al., 2018 & Wischer et al., 2018). The hope is that his project will be adopted or have adequate data to adapt to any failures in the process. If adaptations are needed because the data was not significant, the team will start planning for the next cycle of the PDSA by addressing all gaps in the study. Failure to gather data from an adequate sample, training to do the study the same way are possible gaps in this MSN project. If the data is significant the results can inform the decision to extend video discharge instructions beyond back pain and start developing video education for the top 10 diagnoses in the ED. In addition, creating videos in different languages will further open the door to provide better care to people that do not speak English as their primary language. If successful, this can then be expanded for use in other departments throughout the University.

Conclusion

Many patients feel helpless after their diagnosis and desire more education about taking control of their illness (Engel et al., 2016). It becomes imperative to call attention to the need and investigate new ways of presenting education in the ED supporting a fundamental purpose of healthcare. The focus of this evidence-based MSN project is to enhance patient comprehension

after an ED visit by employing video discharge education rather than the traditional verbal discharge method. The goal is to empower patients by providing education on caring for their ailment to increase favorable outcomes

References

- Aliakbari, F., Parvin, N., Heidari, M., & Haghani, F. (2015). Learning theories application in nursing education. *Journal of Education and Health Promotion, 4, 2*.
<https://doi.org/10.4103/2277-9531.151867>
- Allegri, M., Montella, S., Salici, F., Valente, A., Marchesini, M., Compagnone, C., ... Fanelli, G. (2016). Mechanisms of low back pain: a guide for diagnosis and therapy, *5, 1530*. doi: 10.12688/f1000research.8105.1
- American College of Emergency Physicians. (2021). *EMTALA Fact Sheet*. ACEP. Retrieved December 10, 2021, from <https://www.acep.org/life-as-a-physician/ethics--legal/emtala/emtala-fact-sheet/>
- Back pain. (2018, August 4). Retrieved February 6, 2020, from <https://www.mayoclinic.org/diseases-conditions/back-pain/symptoms-causes/syc-20369906>
- Burnes, B., & Bargal, D. (2017). Kurt Lewin: 70 Years on. *Journal of Change Management, 17(2)*, 91–100. <https://doi.org/10.1080/14697017.2017.1299371>
- ClinCalc LLC. (2019, July 24). *Sample Size Calculator*. CliniCalc.
<https://clincalc.com/stats/samplesize.aspx>
- Connelly, M. (2020, September 12). *The Kurt Lewin Model Of Change*. Change Management Coach. https://www.change-management-coach.com/kurt_lewin.html.
- Cummings, S., Bridgman, T., & Brown, K. G. (2016). Unfreezing change as three steps: Rethinking Kurt Lewin’s legacy for change management. *Human Relations, 69(1)*, 33–60. <https://doi.org/10.1177/0018726715577707>

Engel, K. G., Heisler, M., Smith, D. M., Robinson, C. H., Forman, J. H., & Ubel, P. A. (2016).

Patient comprehension of Emergency Department care and instructions: Are patients aware of When They Do Not Understand? *Annals of Emergency Medicine*, 53(4), 454–461. <https://doi.org/10.1016/j.annemergmed.2008.05.016>

Ginsberg, Z., Ghaith, S., Pollock, J. R., Hwang, A. S., Buckner-Petty, S. A., Campbell, R. L.,

Rappaport, D. E., & Lindor, R. A. (2021). Relationship between pain management modality and return rates for Lower Back Pain in the Emergency Department. *The Journal of Emergency Medicine*, 61(1), 49–54.

<https://doi.org/10.1016/j.jemermed.2021.01.022>

Hoek, A. E., Anker, S. C., van Beeck, E. F., Burdorf, A., Rood, P. P., & Haagsma, J. A. (2020).

Patient discharge instructions in the Emergency Department and their effects on comprehension and recall of discharge instructions: A Systematic Review and Meta-analysis. *Annals of Emergency Medicine*, 75(3), 435–444.

<https://doi.org/10.1016/j.annemergmed.2019.06.008>

Institute for Healthcare Improvement [IHI] 2021. Science of improvement: Testing changes.

<http://www.ihi.org/resources/Pages/HowtoImprove/ScienceofImprovementTestingChanges.aspx>

Johns Hopkins. (2014, October). *Improving the Emergency Department Discharge Process:*

Environmental Scan Report (No. 14). Agency for Healthcare Research and Quality.

<https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/systems/hospital/edenvironmentalscan/edenvironmentalscan.pdf>

- Kawi, J. (2014). Chronic Low Back Pain Patients Perceptions on Self-Management, Self-Management Support, and Functional Ability. *Pain Management Nursing*, 15(1), 258–264. doi: 10.1016/j.pmn.2012.09.003
- Lynn, J., & Florea, J. (2021). *Why it's important to follow EMTALA, the "anti-dumping" law*. Why it's important to follow EMTALA, the "anti-dumping" law | Providence Oregon. <https://oregon.providence.org/forms-and-information/w/why-its-important-to-follow-the-emtala-anti-dumping-law/>.
- Morley, C., Unwin, M., Peterson, G. M., Stankovich, J., & Kinsman, L. (2018). Emergency department crowding: A systematic review of causes, consequences and solutions. *PLOS ONE*, 13(8), e0203316. <https://doi.org/10.1371/journal.pone.0203316>
- Petiprin, A. (2020, July 19). *Lewin's Change Theory*. Nursing Theory.org. <https://nursing-theory.org/theories-and-models/lewin-change-theory.php>.
- Platts-Mills, T. F., Hollowell, A. G., Burke, G. F., Zimmerman, S., Dayaa, J. A., Quigley, B. R., Bush, M., Weinberger, M., & Weaver, M. A. (2018). Randomized controlled pilot study of an educational video plus telecare for the early outpatient management of musculoskeletal pain among older emergency department patients. *Trials*, 19(1). <https://doi.org/10.1186/s13063-017-2403-8>
- Pugh, J., Penney, L. S., Noël, P. H., Neller, S., Mader, M., Finley, E. P., Lanham, H. J., & Leykum, L. (2021). Evidence based processes to prevent readmissions: more is better, a ten-site observational study. *BMC Health Services Research*, 21(1). <https://doi.org/10.1186/s12913-021-06193-x>
- Rhon, D. I., Mayhew, R. J., Greenlee, T. A., & Fritz, J. M. (2021). The influence of a MOBILE-based video Instruction for Low back pain (MOBIL) on initial care decisions made by

- primary care providers: a randomized controlled trial. *BMC Family Practice*, 22(1).
<https://doi.org/10.1186/s12875-021-01549-y>
- Rimer, B. K., & Glanz, K. (2005). *Theory at a glance: A guide for health promotion practice*. Bethesda, MD: US Department of Health and Human Services, National Institutes of Health, National Cancer Institute.
- Sadeghi, R., Hashemi, M., & Khanjani, N. (2018). The impact of educational intervention based on the health belief model on observing standard precautions among emergency center nurses in Sirjan, Iran. *Health Education Research*, 33(4), 327–335. <https://doi-org.roseman.idm.oclc.org/10.1093/her/cyy020>
- Sheikh, H., Brezar, A., Dzwonek, A., Yau, L., & Calder, L. A. (2018). Patient understanding of discharge instructions in the emergency department: Do different patients need different approaches? *International Journal of Emergency Medicine*, 11(1).
<https://doi.org/10.1186/s12245-018-0164-0>
- Wilkin, Z. L. (2020). Effects of video discharge instructions on patient understanding. *Advanced Emergency Nursing Journal*, 42(1), 71–78.
<https://doi.org/10.1097/tme.000000000000279>
- Wischer, J. L., Oermann, M. H., Zadvinskis, I. M., & Kinney, K. C. (2018). Effects of iPad video education on patient knowledge, satisfaction, and cardiac rehabilitation attendance. *Quality Management in Health Care*, 27(4), 204–208.
<https://doi.org/10.1097/qmh.000000000000185>