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The Efficacy of Implementing a Collaborative Palliative Pain Panel Team to Reduce Cancer Pain

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Title of Manuscript: The Efficacy of Implementing a Collaborative Palliative Pain Panel Team to Reduce Cancer Pain

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Key Words: cancer; pain; control; interprofessional care team; multidisciplinary care team; collaborative care

Abstract

Background: A palliative care clinic established a collaborative pain team to evaluate patients with severe, poorly controlled cancer-related pain. While the clinic collected data, it did not have a process for analyzing it and could not evaluate the effectiveness of this collaborative team.

Objective: To evaluate the program's efficiency by tracking and analyzing pain scores pre-intervention and post-intervention and to explore the clinical phenomenon of improving cancer pain through a collaborative approach.

Design: Quality improvement program evaluation.

Setting and Subjects: Adult oncology patients receiving care at a palliative care ambulatory clinic in the United States.

Measurements/Results: Quantitative data, including pre- and post-intervention numeric pain scores, were collected and analyzed using a paired *t*-test to evaluate the efficacy of the collaborative pain team. The data analysis yielded a small sample size (n=6). Six patients had pre-intervention scores, and (n=3) patients had pre- and post-intervention pain scores. The collaborative pain team interventions did not demonstrate a statistically significant improvement in pain scores from pre-intervention to post-intervention ($p = 0.211$).

Conclusion: While research suggests that a collaborative pain team would be an effective approach to reducing cancer-related pain, this program evaluation yielded statistically insignificant results. Notably, at least one patient had a *clinically* significant reduction in pain. A limitation of this study was the small sample size; a larger sample size may yield a statistically significant result.

Introduction

More than 14 million individuals have cancer diagnoses, projected to increase to more than 20 million by 2025.[1] Over the years, there have been significant advances in cancer research regarding early detection and treatment interventions. However, progress in treating cancer-related pain has been inadequate and delayed, contributing to increased cancer burden among patients.[1] Pain is considered one of the prevalent and debilitating symptoms of cancer, affecting more than 53 percent of patients in all stages.[2] More than 70 percent of patients with advanced cancer experience uncontrolled moderate to severe pain.[2] Chronic pain among cancer patients significantly impacts the patient's emotional and physical abilities, leading to the development of related disabilities, including physical activity limitation or impairment in family, social, or work roles and responsibilities.[3]

Poor pain control deteriorates overall well-being and quality of life as it contributes to psychological distress among cancer patients and increases associated healthcare costs due to increased hospitalizations, readmissions, and increased need for palliative care services.[3] Implementing a collaborative pain panel team in a clinical setting is crucial as it will facilitate optimum health outcomes and improved quality of life.[4] The multidisciplinary pain team specializes in symptom monitoring, with a focus on pain, which is essential for reducing cancer-related pain through effective therapy implementation.[4] Collaborative efforts from an inter-professional pain panel of palliative care specialists, interventional radiologists, pain physicians, and nurse specialists can adequately and effectively reduce pain in cancer patients through collective medical judgment and evidence-based practice in pain clinics.[4]

A literature review was conducted to determine the effectiveness of a collaborative pain panel in reducing cancer pain levels after interventions with pain specialists. A comprehensive

search of relevant databases was performed to obtain scholarly research articles and gain insight into how effective a collaborative pain panel that includes interventional radiology and pain clinics is in reducing cancer pain. Databases used to obtain articles for the review included PubMed, BioMed Central, Scopus, PubMed Central, and CINAHL. Research articles comprising various methodological designs, including qualitative, quantitative, and mixed methods, were included in the rapid systematic review. Inclusion and exclusion criteria were established to ensure the study's findings were accurate, reliable, valid, and current for application in the clinical practice for effective cancer pain management. Research articles were included if they were 1) peer-reviewed, 2) published in the English language, 3) within the years 2018 to 2023, 4) focused on the effectiveness of collaborative pain panel to reduce cancer pain, and 5) contained a comparison group. Exclusion criteria included studies 1) published in other languages besides English, 2) before the year 2018, 3) focused on other types of pain besides cancer pain, or 4) did not include a collaborative pain panel team for cancer pain management interventions. Each identified research article was thoroughly reviewed and coded for information including author, publication year, purpose, design, inclusion criteria, intervention vs. comparison, results, and conclusion. The sample populations for the articles were reviewed for inclusion and exclusion criteria and size. The data quality in the research studies was evaluated based on the studies' aims and data collection methods. In contrast, the methodology was assessed based on the presence of a comparison group, target population, sample setting, and demographic data.

A total of 200 articles were identified using the search criteria previously outlined. Although there was not a large body of evidence on this subject matter, the literature review did provide insight into the effects of a multidisciplinary and collaborative approach among pain specialists, particularly involving pain clinics and interventional radiology, in lessening pain

levels among cancer patients. Alhazmi et al.[5] analyzed existing literature from multiple databases to highlight the need for comprehensive pain assessment to tailor pain management measures based on the individual needs of cancer patients in all cancer stages. The effects of collaborative telerehabilitation alongside pain management interventions were shown to reduce pain, enhance quality of life (QoL), and reduce hospital length of stay among cancer patients for improved health outcomes.[4-6]

The aim of this quality improvement project was to determine the effectiveness of a collaborative pain panel team in reducing cancer pain levels after interventions. The project involved systematically assessing the patient's pre- and post-intervention pain scores. The primary outcome of interest was if pain scores improved after intervention. Other measures collected included time to intervention and reasons why interventions were not pursued. A non-profit outpatient palliative care clinic affiliated with a large healthcare system located in the Midwestern United States developed a collaborative pain team that includes interventional radiology and pain specialists to evaluate patients with severe uncontrolled cancer-related pain. While the clinic had been collecting data, a process for analyzing the data to evaluate the effectiveness of this collaborative team has not been developed.

Methods

The DNP student collaborated with all stakeholders and completed an organizational assessment (OA), literature review, and strengths, weaknesses, opportunities, and threats analysis (SWOT). The DNP student selected the appropriate phenomenon and implementation model using the OA literature review and SWOT analysis information. The Logic Model for Implementation was utilized for the program evaluation. Developed by Millar et al.,[7], it is typically used for program evaluation as it provides a structured framework to clarify and guide

the planning, execution, and evaluation of interventions. The Logic Model (See figure 1) enables organizations to explain strategies and emphasize connections between what the program seeks regarding resources and what it aims to accomplish. The model first starts with outcomes and utilizes a backward design to ensure that activities will lead to the specific outcome of improving pain scores with a collaborative approach.

The phenomenon model used was Johns Hopkins' evidence-based model, introduced in 2004. It guides treatment in a three-phase Practice Question, Evidence, and Translate (PET) process. This model safeguards that the most up-to-date research findings and best practices are immediately and accurately incorporated into the patient's treatment plan.[8] This model is also used in interprofessional teams and is consistent with this QI project, as evidence, inquiry, and best practices are necessary when planning interventions such as pain injections or IR procedures.

To fully understand the QI project, it is first important to understand how the CPPT providers care for the patients. The palliative care provider evaluates the patients with poorly controlled cancer pain. If the patient is deemed appropriate for the CPPT, the provider will use the template created to document the pre-intervention score, and the palliative care provider will add the patient to the monthly CPPT meeting. The CPPT will work together to identify appropriate interventions. Once the intervention has been determined, a referral is placed by the palliative care provider to the appropriate pain specialist or interventional radiology, and the patient is scheduled accordingly. A follow-up appointment is scheduled 10- 15 days post-intervention, or a phone call is made by the pain specialist's office clinical staff or interventional radiology registered nurse to record post-intervention pain scores using the numerical (0 -10) pain scale.

The DNP student worked with the information technology services and site mentors to develop a template for palliative care providers to document numeric 0-10 pre-intervention pain scores for patients deemed appropriate for the CPPT. The DNP student provided an educational session on using the template with the palliative care team and created a quick reference guide. The project plan aims to assess the effectiveness of the CPPT by comparing pre-intervention and post-intervention pain scores. The goal is to document a reduction in pain scores to demonstrate the intervention's effectiveness. If the office cannot reach the patient, it is documented that a post-intervention pain score was not collected within the 10-15 but can be recorded later should the patient return the call. If the patient does not have an intervention, the following categorical data were collected: (1) no recommendations, (2) hospice, (3) death, (4) lost to follow-up, (5) other, e.g. (no return call or declined). This categorical data provides additional insight into why a patient may not have received an intervention. Time to intervention in days was collected from the patient's medical record and recorded in numerical units of measure. Twelve plus hours would equal one day, and less than 12 hours would not equal a day. Time to intervention in days provides the mean number of days to intervention and helps to identify if there are access issues with interventions. The DNP student created a collection flowsheet to store the data on a password-protected document and computer. The DNP student performed a chart audit from January to March 2024. The DNP student collected and analyzed the data and disseminated the findings. A paired *t*-test was utilized to evaluate the quantitative data. Data were analyzed using IBM® SPSS Statistics version 25. An Institutional Review Board determined that the project was not research.

Results

Quantitative data were collected and analyzed using a paired *t*-test to evaluate the efficacy of the collaborative pain team using pre-intervention and post-intervention numerical pain scores. The data was collected over four weeks, which resulted in a small number of `three had documented pre- and post-intervention scores. Statistical analysis of the pre-and post-intervention pain scores indicated that CCPT proved to be clinically insignificant (p=.211) > 0.05 (Table 1). Categorical data collected included (1) no recommendations, (2) hospice, (3) death, (4) loss to follow-up, and (5) other (e.g., no return call or declined). Data frequencies were evaluated for the categorical variables, and it was identified that 33% of patients did not undergo an intervention. Reasons for not undergoing an intervention results included lack of recommended intervention and death (Table 2). Descriptive data was collected using a mean score to determine the time to intervention in days. The results of the descriptive data analysis of time to the intervention were eight days at a minimum and 88 days at a maximum, with a mean score of 49.25 days to intervention (Table 3).

Discussion

This program evaluation formally assessed the efficacy of a CPPT in improving uncontrolled cancer pain. However, the evaluation did not yield the desired outcome due to a small sample size (n=6) and missing data, which resulted in insignificant evidence (p=.211, > 0.05). While the results are not statistically significant, they provide clinically important information. None of the patients had a higher pain score post-intervention, which is promising as it shows that the intervention is not leading to increased pain. The data also revealed that of the three patients with pre- and post-intervention scores, one patient experienced a 50% reduction in pain. Treating cancer pain has been a priority for this clinic, and developing a team

of specialists to treat poorly controlled cancer pain has become the new focus of this palliative care team.

While originally designed as a program evaluation, the project encountered several limitations. Initially, the palliative care team assumed they were capturing all necessary data. However, upon closer examination, it was discovered that pain scores were not consistently documented. There was also confusion regarding where to collect specific data and whether it was being collected. Efforts were made to reduce duplicated work and improve efficiencies by identifying what information was already being documented by other team members.

An additional challenge arose in the external collaborative pain clinic, where providers could not access shared electronic medical records (EMR). As a result, the external office sent notes via email, which were scanned into the chart, making it difficult to locate information in the medical records. Furthermore, there was uncertainty within the palliative care team regarding the collection methods for some data.

Despite these challenges, collaboration with interventional radiology and internal pain clinics benefited from the project. These collaborations provided access to shared EMR and facilitated follow-up phone calls to collect post-intervention pain scores. However, the team has yet to resolve the challenge of automating reporting.

Conclusions

According to Escobar et al.,[9] the treatment of oncological pain is complicated and involves a collaborative approach between palliative care services and pain clinics. Significant advancements have been made in the treatment and overall survival of cancer, but the management of oncological pain is lacking.[8] During data collection, it was identified that pertinent information was not recorded, which could have improved the project evaluation

outcomes. The study's findings should be interpreted within the limitations of a small sample size. We suspect a larger (or increased) sample size may demonstrate that a CPPT is an effective intervention for improving cancer-related pain.

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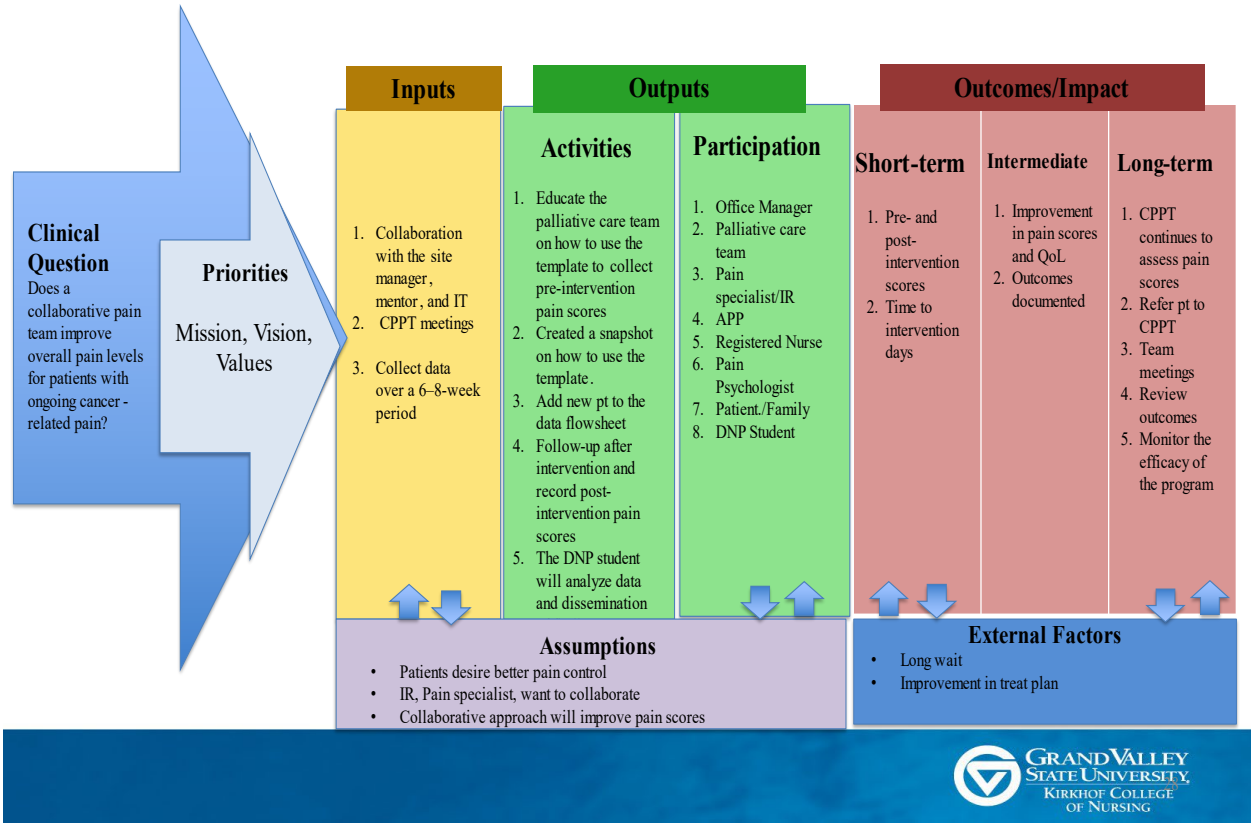
This project had no funding.

Author(s') disclosure statement

The authors declare that they have no conflicts of interest.

Figures

Figure 1. Program Evaluation Logic Model



Tables

Table 1 Paired Sample

		Paired Differences 95% Confidence Interval of the Difference Upper	t	df	Significance One-Sided p	Significance Two-Sided p
Pair 1	Pre-Intervention Score Post-Intervention Score	8.83775	1.000	2	.211	.423

Table 2 Categorical

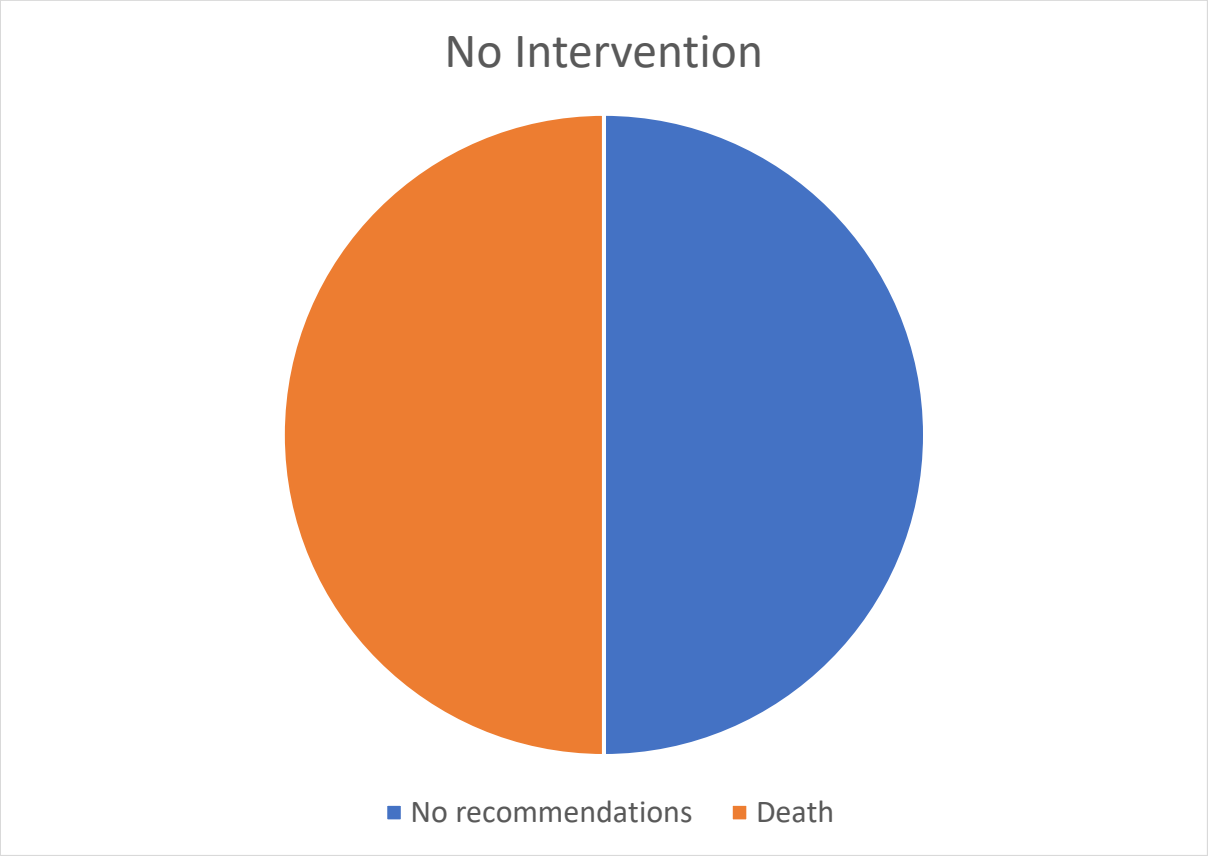
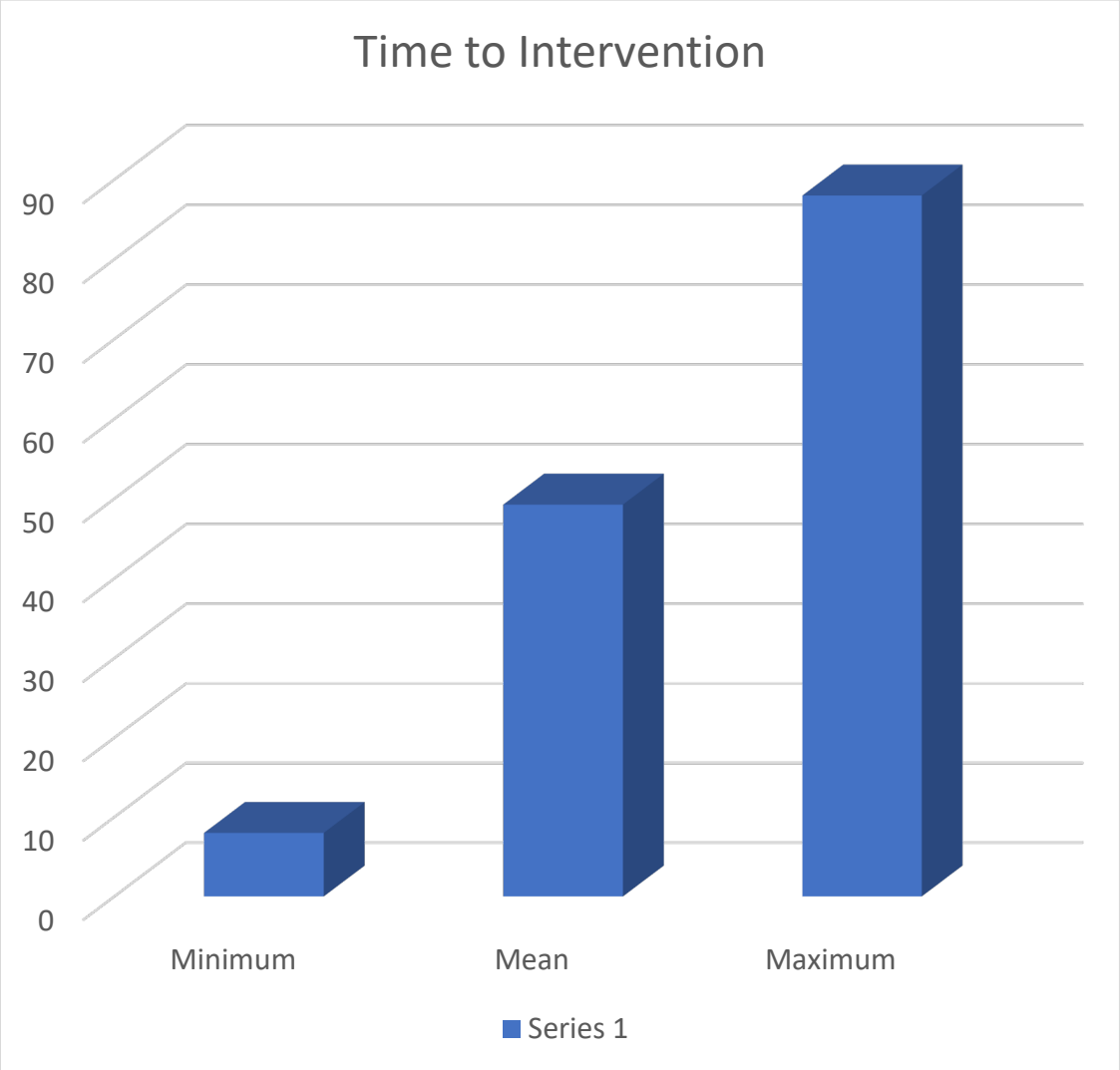


Table 3 Descriptive Time to Intervention



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The Efficacy of Implementing a Collaborative Palliative Pain Panel Team to Reduce Cancer Pain

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DNP Project Defense

April 15, 2024

GRAND VALLEY STATE UNIVERSITY
KIRKHOF COLLEGE OF NURSING

Acknowledgments

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  -Dr. Nicole Harpold, DNP, AGPCNP
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  -Dr. XXX XXX, DNP, A-GNP
  -Kristen Van Stensel, MSN APRN, AGCNS-BC, DON
- Site Team Members
  -XXX XXX
- Dr. Susan Strouse PhD, RN, Center for Nursing Research Director
- GVSU Faculty & HRSA Team

Objectives

1. Explore the clinical phenomenon of improving cancer pain
2. Describe the model/framework
3. Outline the clinical practice question
4. Discuss the findings of the organizational assessment
5. Review the literature on cancer-related pain management
6. Describe the project's purpose, type, and design
7. Highlight key findings and outcomes
8. Discuss the sustainability plan
9. Review DNP Essentials

Introduction and Background

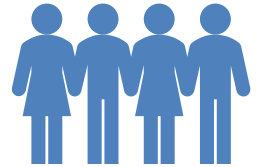
Background

- More than 14 million cancer diagnoses (Liu et al., 2023)
- Projected to increase to > 20 million by 2025 (Liu et al., 2023)
- Delays in treating cancer-related pain increases burden (Liu et al., 2023
- Cancer pain is prevalent and debilitating, effecting > 53% (Ayaden et al.,2022)
- More than 70% experience uncontrolled pain (Ayaden et al.,2022)
- Significantly impacts the quality of life (QoL) and increases healthcare costs (Wang et al., 2021)

Organizational Setting

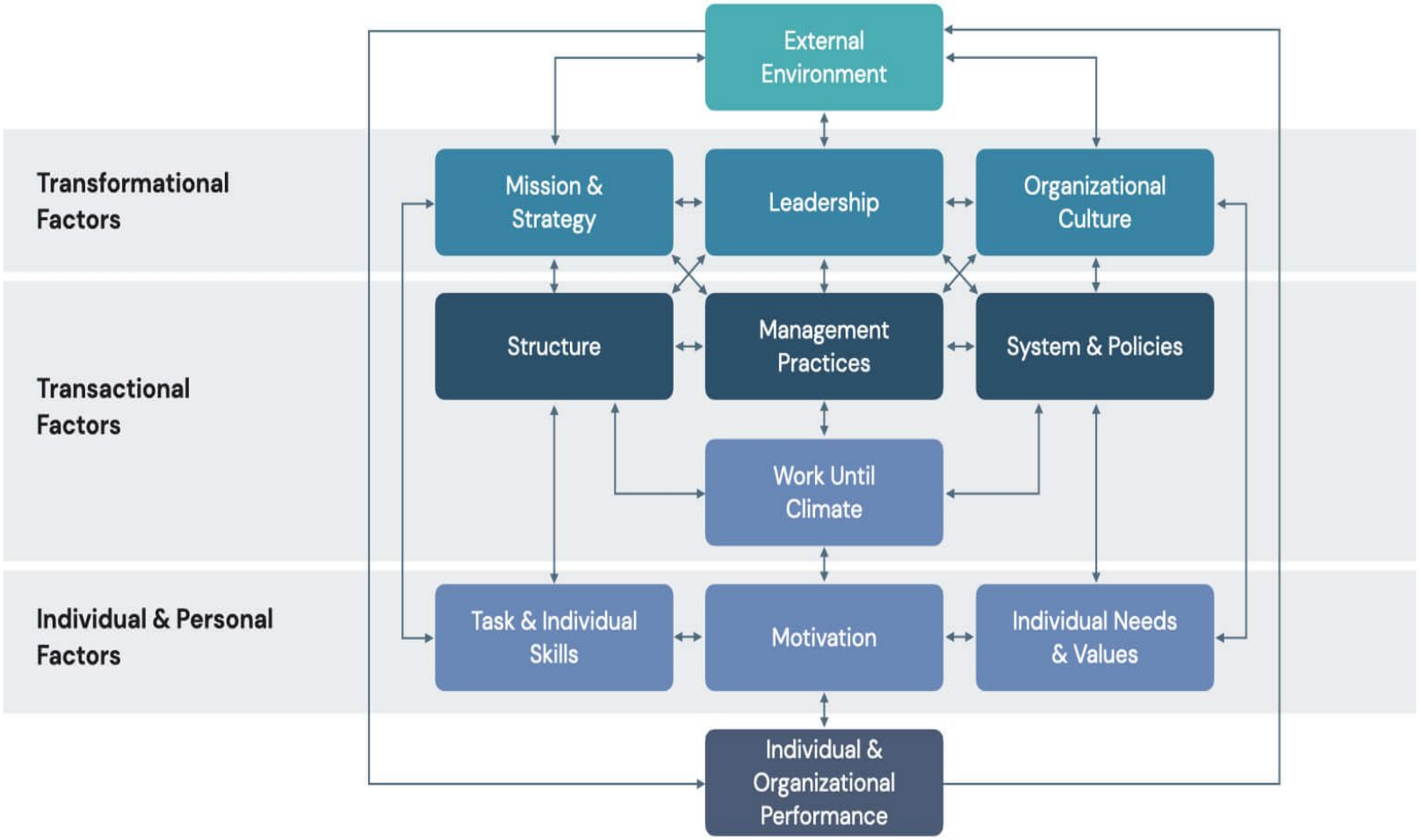
Outpatient palliative care clinic affiliated with a large not-for-profit organization

Collaborative Team



Collaborative approach to improve cancer-related pain

Burke & Litwin (1992) Model of Organizational Performance and Change



Twelve Integrated Factors

Factor	Definition	Factor Influence
External Environment	Represents the external factors that the organization cannot control but can influence its performance.	• New partnership with pain specialists • The Mid-west area has limited pain clinics and long wait lists • Clinics are driven by insurance type. • Similar issues with interventional radiology (IR) regarding access.
Mission and Strategy (Transformational)	Reflects the organization's purpose, values, and long-term objectives.	• Mission to improve health outcomes through partnerships (XXX, 2023)
Leadership	Encompasses the styles and effectiveness of leadership within the organization.	• Leadership on board with the palliative care implementation of a collaborative pain panel team.
Organizational Culture	Refers to the shared values, beliefs, and norms that shape the organization's behavior.	• Supportive, values teamwork, complete transparency • Team-based care fits collaborative care team panel for improving cancer pain
Structure (Transactional)	Describes the organization's formal structure, including its hierarchy and decision-making responsibilities.	• Lack of workflow process • Palliative Care presents patient history and imaging.
Management Practices	Encompasses the policies and procedures that guide the organization's daily operations.	• Improve quality and efficiency within the departments and, occasionally, within the organization.

Twelve Integrated Factors

Factor	Definition	Factor Influence
Systems Policies and Procedures (Transactional)	Processes and procedures that support the department and organization's operations.	• **Lacking standard work for the program**
Work Unit Climate	Describes the working conditions and the overall environment within individual work units	• The medical director is passionate about this patient population and is dedicated to advocating and improving outcomes.
Task and Individual Skills	Represents the skills and capabilities of employees, as well as the tasks they perform.	• Multidisciplinary team with various skill sets and degrees to provide the patients with the necessary treatment and resources.
Individual Needs and Values	Reflects the personal needs and values of individuals within the organization.	• Stakeholders are enthusiastic about the opportunity to offer alternative options for cancer-related pain.
Motivation (Individual/personal)	Encompasses the factors that drive individuals to perform at their best	• **Opportunity to share this approach with other palliative care teams if the data is promising.**
Individual and Organizational Performance (Individual/personal)	Represents the outcomes of the organization, both at the individual and overall levels.	• **Collecting and tracking data, improvement from pre- and post-pain scores after interventions.**

SWOT Analysis

Strengths

- Large organization with resources for patients and family support.
- **Providers and staff are excited about the collaboration.**
- Internal stakeholders onboard
- Support from leadership
- **Shared EMR**
- **Cost-effective (in time** cost)
- Minimal time for pain panel meetings

Weaknesses

- Considerable number of stakeholders within the organization.
- **New program**
- **New leadership**
- Concerns with role confusion.
- **RN workload**

Opportunities

- **More access to interventions by adding pain clinics and IR.**
- **Decreased wait times for procedures.**
- **Improvement in treatment plans for better pain control.**
- Conservative treatment is minimally invasive.
- Better patient outcomes improve pain scores and patient and family satisfaction with pain management.

Threats

- Patient reluctance to see a new provider or see multiple providers for pain control.
- External stakeholders
- Transportation issues
- **Long wait times**
- **Provider**

Organizational Assessment Findings

- Favorable
- Shared EMR
- Cost effective
- Easy data collection tool
- Beneficial to stakeholders
  - Patient and their families
  - Palliative care providers and staff
  - Project mentor

Purpose & Aim of the Literature Review

- The primary aim of the rapid systematic literature review was to determine the effectiveness of a collaborative pain panel in reducing cancer pain levels after interventions with pain specialists.
- The literature review provided insight into the effect of a multidisciplinary and collaborative approach among pain specialists, particularly involving pain clinics and interventional radiology, in lessening pain levels among cancer patients.

PRISMA Process

A comprehensive search of relevant databases

PubMed, BioMed Central, Scopus, PubMed Central and CINAHL

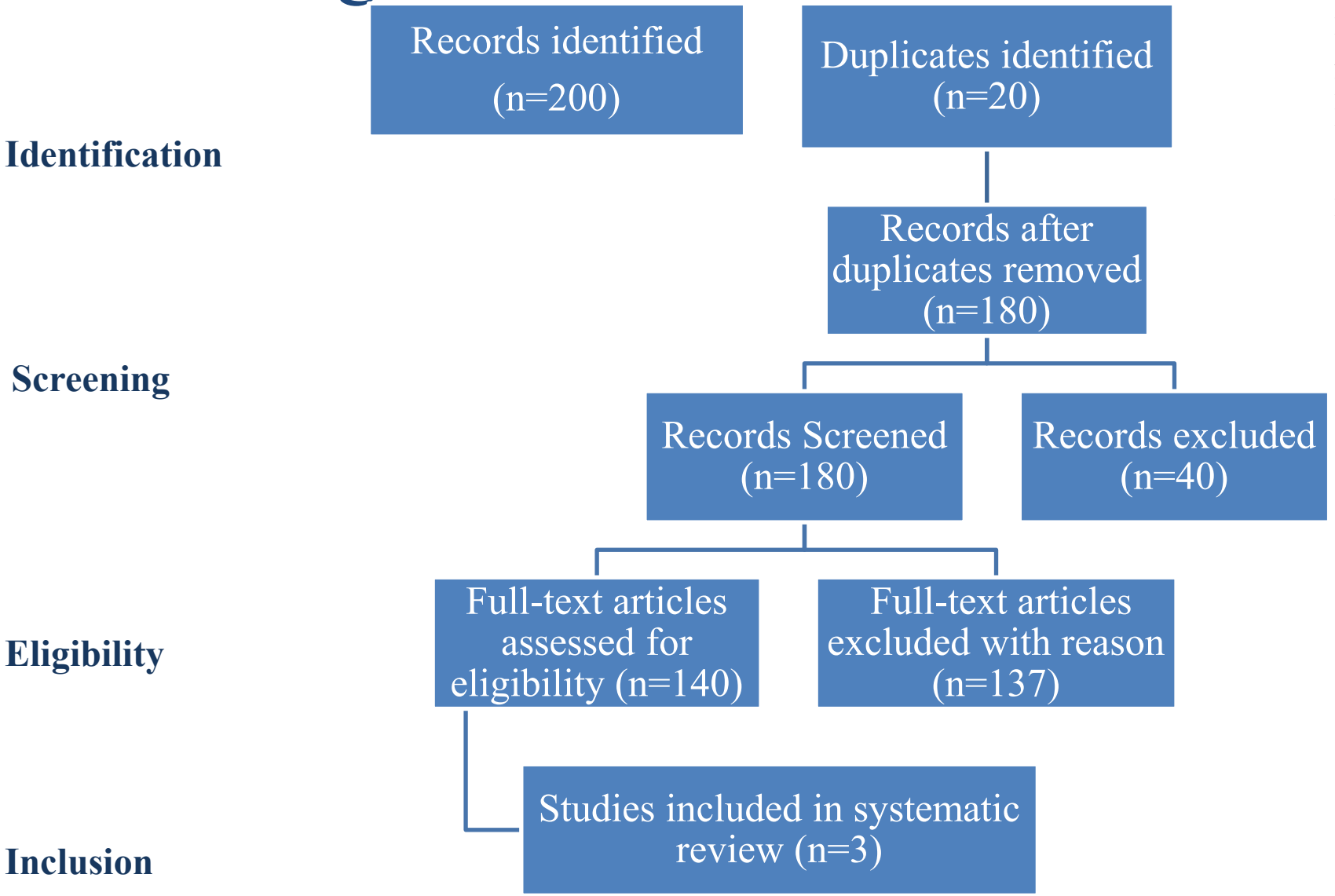
Keywords and phrases "cancer," "pain," "control," "reduced pain," "pain management," "interventional radiology," "integrative care team," "interprofessional care team," "multidisciplinary care team," and "collaborative care"

Methodological designs: qualitative, quantitative, and mixed methods

Inclusion criteria -1) peer-reviewed, 2) published in the English language, 3) within the years 2018 to 2023 4) focused on the effectiveness of collaborative pain panel to reduce cancer pain, and 5) contained a comparison group.

Exclusion criteria- 1) Not published in English, 2) Before 2018, 3) Not cancer pain, or 4) Did not include a collaborative pain panel team for cancer pain management interventions.

PRISMA Figure



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and MetaAnalyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097
For more information, visit www.prisma-statement.org.

Synthesis of Primary Search Results

Comprehensive Pain Assessments

(Alhazmi et al.,2021)

Improved Pain After Intervention

(Alhazmi et al.,2021; Cheville et al. 2019; Yang et al., 2020)

Decreased Hospital Length of Stay

(Cheville et al., 2019)

Collaborative Approach to Improve Quality of Life in Cancer Patients

(Cheville et al. 2019; Yang et al., 2020)

Strengths & Limitations of Primary Results

- RCT
- Low dropout rates
- Complete reporting
- Limited statistical data
- Sample size
- Short recruitment
- Bias

Secondary Search Methods

The primary purpose of the secondary search

1) peer-reviewed, 2) published in the English language,
3) within the years 2018 to 2023

The two articles explored interventions requiring a collaborative approach and improving quality of life

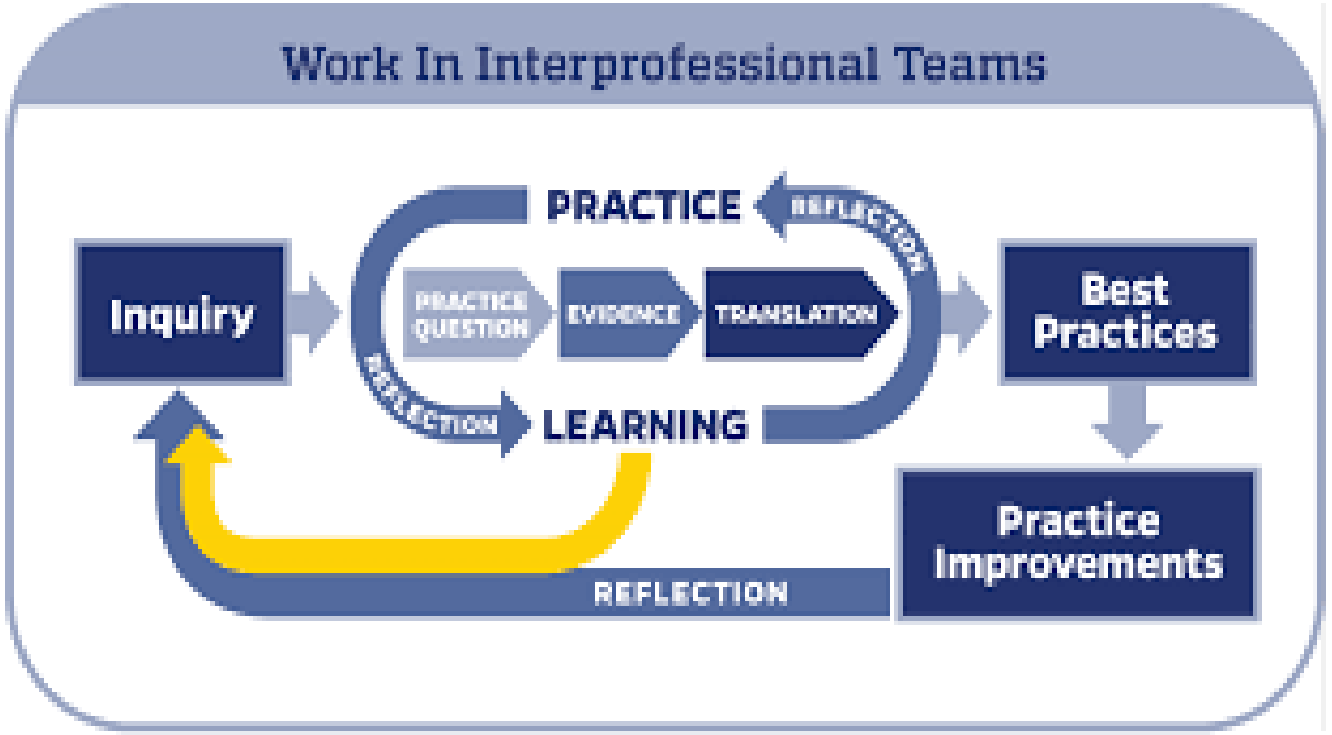
(Chapman et al., 2020; Liu et al., 2023)

Synthesis of Secondary Search Results

Use of a Collaborative Approach (Chapman et al., 2020)

Improved Quality of Life (Chapman et al., 2020; Liu et al., 2023)

Model for Phenomenon



John Hopkins Evidence Based Practice Model
www.hopkinsmedicine.org/evidence-based-practice/ijhn_2017_ebp.html

Johns Hopkins Phenomenon

Inquiry	Practice question	Evidence	Translate to best practice	Practice Improvement	Reflection
The initial **inquiry** started with the palliative care clinic's interest in evaluating the use of a collaborative team approach to managing cancer pain with the pain specialists advising on appropriate interventions for pain control.	**Practice question:** How do we measure the effectiveness of what the PC clinic is doing?	The DNP student reviewed the literature to identify **evidence** for a collaborative approach to treating cancer pain.	The DNP student **translated** the findings from the literature review into **best practice** recommendations.	The **practice improvement** was to collect pre-intervention and post-intervention pain scores and time to intervention. This data would provide evidence regarding the collaborative program's efficacy.	**Reflection** is incorporated through meetings to discuss the most appropriate intervention based on the latest evidence. Intervention outcomes are evaluated, and practices are adjusted accordingly.

Clinical Practice Question

Does a collaborative pain team improve overall pain levels for patients with ongoing cancer-related pain?

Project Plans and Methods

DNP Project Purpose and Objectives

Purpose

- Evaluate the program's efficacy
- Track and analyze pain scores and time to intervention
- Development of a sustainability plan

Objectives

- Complete analysis of pre-and post-intervention pain scores
- Complete analysis of time to intervention data
- Disseminate QI project findings and sustainability plan to GVSU faculty advisors, and project site mentor and provide the clinic with an executive summary of the findings and sustainability plan

DNP Project Design and Type

- QI Project
- Program evaluation of the effectiveness of a collaborative pain panel team.
- IRB Determination of ‘Not Research’

Participants and Setting

- Adult oncology patients
- Palliative care oncology clinic
- Pain panel team

Key Stakeholders

Key Stakeholders	Analysis
Office Manager	Responsibility is to have effective communication and follow-through with staff. Responsible for the clinic's outcomes, including positive patient outcomes and experiences and a positive environment for staff. Make sure roles are clearly defined.
Providers	Provide quality patient care and select the best intervention for treatment and education related to evidence-based information on treatment for cancer pain. Collect patients' data and information for the panel to review. Schedule and perform interventions within their department.
Registered Nurse	To oversee and assist in the assessment and documentation of pain scores pre- and post-intervention—follow-up phone calls.
Patient/Family	Family support and patients are keeping appointments for procedures. Better pain management.
Pain Psychologist	Initial patient assessment as procedures may require an evaluation before insurance approval and any procedure requiring permanent implantation.
Interventional Radiology	Schedule and perform interventions within their department.
Grand Valley DNP Student	Gather data analysis and review data. Evaluate the program.

Proposed Budget & Resources

Expenses for Implementation of Project	
1 RN (Data Collection) at $36/hour $36/hour x 5 hours/week (260 hours/year)	$9,360 annually
Total Expenses	$9,360
Cost Mitigation if avoidance of hospitalization or shorter LOS	
Average cost for hospitalization per day	$1,800
Average length of stay (LOS)	12 days x $1,800 = $21,600
Total Cost Savings	**$12,240**

(Fortner et al., 2023)

Budget & Resources Cont.

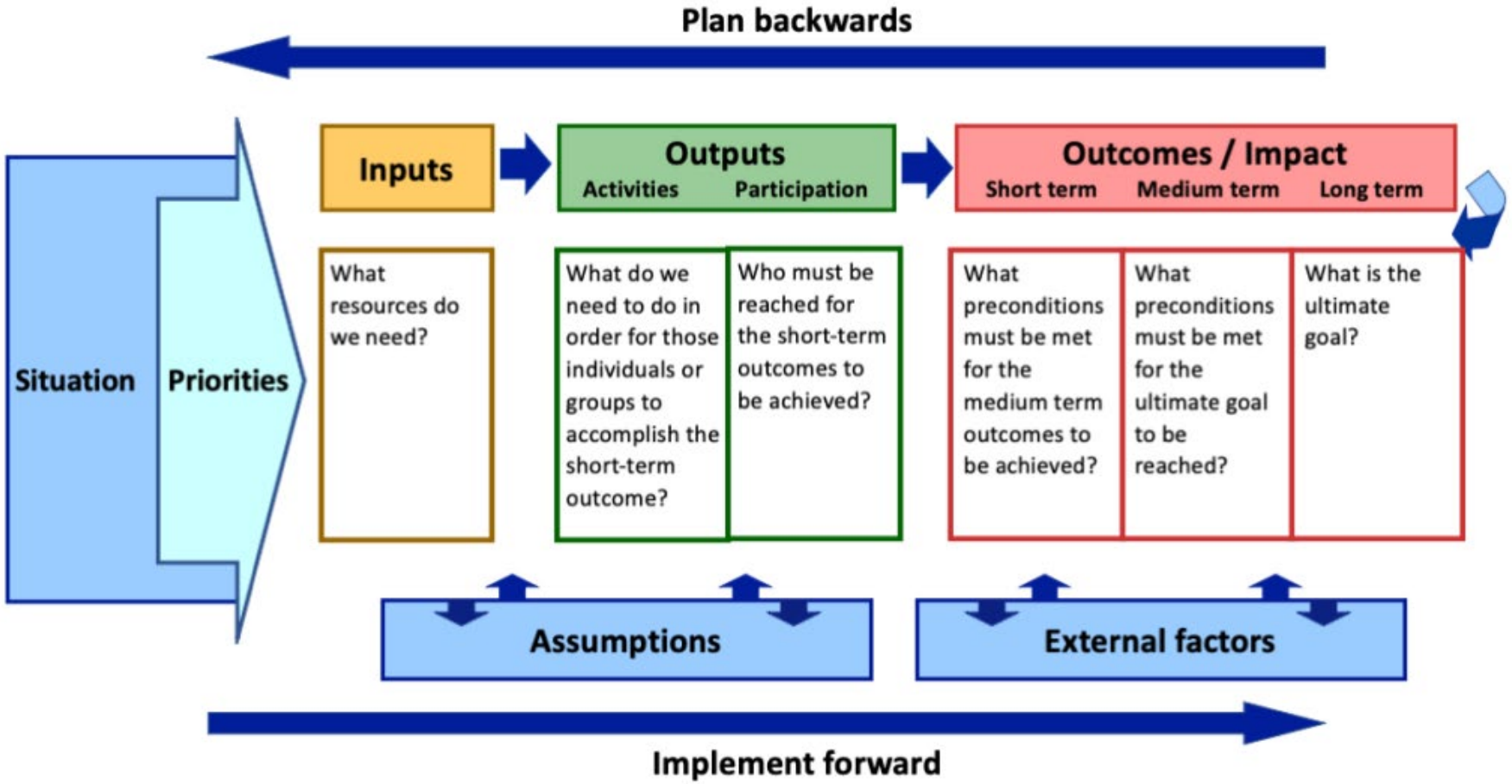
In-kind Donation	
1 DNP student 200 at $36/hour	$7,200
1 Site Mentor 20 hours at approximately $58/hour	$1,160

1 Office Manager 3 hours at approximately $36/hour	$108
1 TIS Specialist 4 hours at approximately $25/hour	$100
Total Expenses	**$8,568**

Implementation Framework

- Logic Model (Millar et al., 2001)
- Used for program evaluations
- Systematic approach toward the desired outcome
- Provides clarity for stakeholders

Implementation Framework Diagram



Clinical Question
Does a collaborative pain team improve overall pain levels for patients with ongoing cancer-related pain?

Priorities

Mission, Vision, Values

Inputs

1. Collaboration with the site manager, mentor, and IT
2. CPPT monthly meetings
3. Collect data over a 4-6-week period

Outputs

Activities

1. Provided education to the PC team on how to use the template including a quick reference guide.
2. Chart audit to collect pre- and post-intervention pain scores and days to invention
3. Data analysis and dissemination

Participation

1. Office Manager
2. Palliative care team
3. Pain specialist/IR
4. APP
5. Registered Nurse
6. Pain Psychologist
7. Patient./Family
8. DNP Student

Outcomes/Impact

Short-term

1. Pre- and post-intervention scores must be documented to determine efficacy.

Intermediate

1. Improvement in pain scores and QoL
2. Outcomes documented 10-15 days after intervention.

Long-term

1. Ongoing assessment and document pre- & post-intervention pain scores.
2. Continue to refer patients to CPPT
3. Team meets to discuss outcomes and new cases..

Assumptions

- Patients desire improvement in cancer pain
- IR and pain specialist wants to collaborate
- Collaborative approach will improve pain scores

External Factors

- Long wait times for interventions
- Improvement in the treatment plan

Implementation Strategies

Logic Model Situation	The clinic has been collecting data, but they currently do not have a process for analyzing the data and are currently unable to evaluate the effectiveness of this collaborative team.
Logic Model Priorities	A space to discuss patients with complex or refractory pain to determine appropriate intervention.
Logic Model Input	OA, literature review collaboration with CPPT, including the manager, IT site mentor, collection of data for 4-6weeks
Logic Model Outputs	Education, evaluation, referral, documentation of pre-intervention scores, planning intervention, discussing outcomes with all stakeholders, documentation post-intervention The DNP student will analyze data and disseminate findings.
Logic Model Outcomes	**Short-term**: Pre- and post-intervention scores must be recorded for data collection to measure the program's efficacy. **Intermediate**: Improved pain scores and QoL. Outcomes documented 10-15 after intervention. **Long-term**: Collect data to monitor efficacy and develop a sustainability plan

Evaluation and Measures

Evaluation & Measure	Analysis Plan
Pre-intervention and post-intervention pain scores using a numerical tool (0 -10)	A paired *t-test* will be used to evaluate the data
Categorical data include: (1) no recommendations, (2) hospice, (3) death, (4) loss to follow-up, (5) other, e.g. (no return call or declined)	Provide a frequency for each reason the patient may not receive an intervention
Time to intervention data (days)	Mean score

- Data analyzed in collaboration with a graduate statistician using SPSS.

Snapshot Guide

The patient XXXXXXX was discussed at the Palliative Complex pain panel on ***
Pre- Intervention pain score-The patients PCQC score is 7 (2/13/2024 10:00 PM)

Location of pain ***
Post intervention pain score *** and date ***
Procedure type/Type of intervention angelaInterventions
Office location Angelaofficelocation
Intervention completed yes/no If no WHY angelanointer
Summary of outcomes ***

- Epidural
- Never block
- Trigger point injection
- Medial Branch Block
- Radiofrequency Ablation
- Spinal Cord Stimulator
- ***

Snapshot Guide Cont.

The patient XXXXXXX was discussed at the Palliative Complex pain panel on ***
Pre- Intervention pain score-The patients PCQC score is 7 (2/13/2024 10:00 PM)

Location of pain ***
Post intervention pain score *** and date ***
Procedure type/Type of intervention angelaInterventions
Office location Angelaofficelocation
Intervention completed yes/no If no WHY angelanointervention
Summary of outcomes ***

- no recommendations
- Hospice
- death
- Loss to follow-up
- other no return call or declined

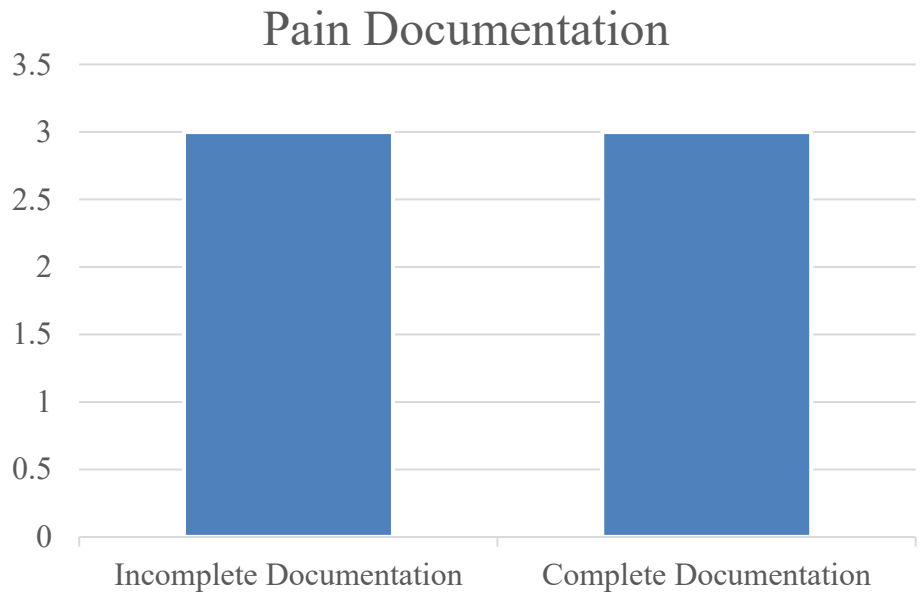
Data Collection Flowsheet

MRN	Pre-Intervention Pain Score	Post-Intervention Pain Score	Intervention Complete Yes or NO	If NO, why (1) no recommendations, (2) hospice, (3) death, (4) loss to follow-up	Referral to (1) IR, (2) outside pain clinic, (3) Internal pain clinic	Time to intervention days

Results

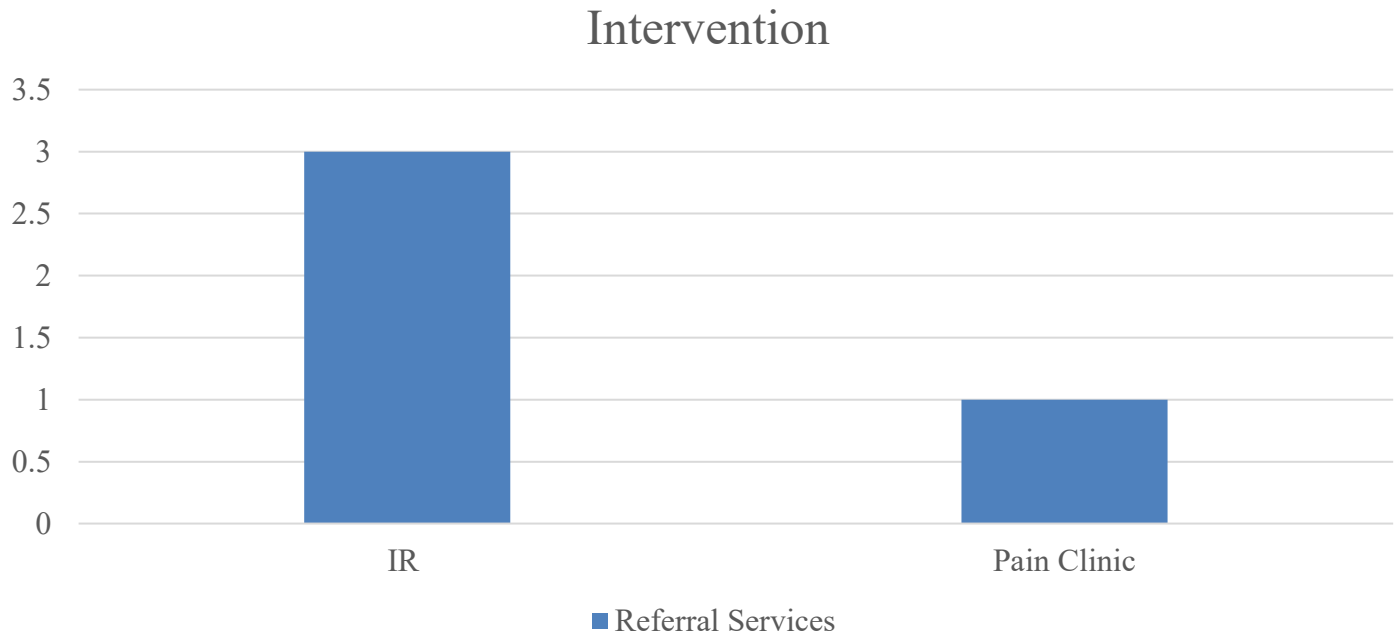
Implementation Pain Documentation

- Chart audit was performed January-March 2024
- Total patients added to the CPPT (n=13)
- 7 patients were excluded
- Patients qualified for inclusion (n=6)
- Only 50% of patients had completed documentation



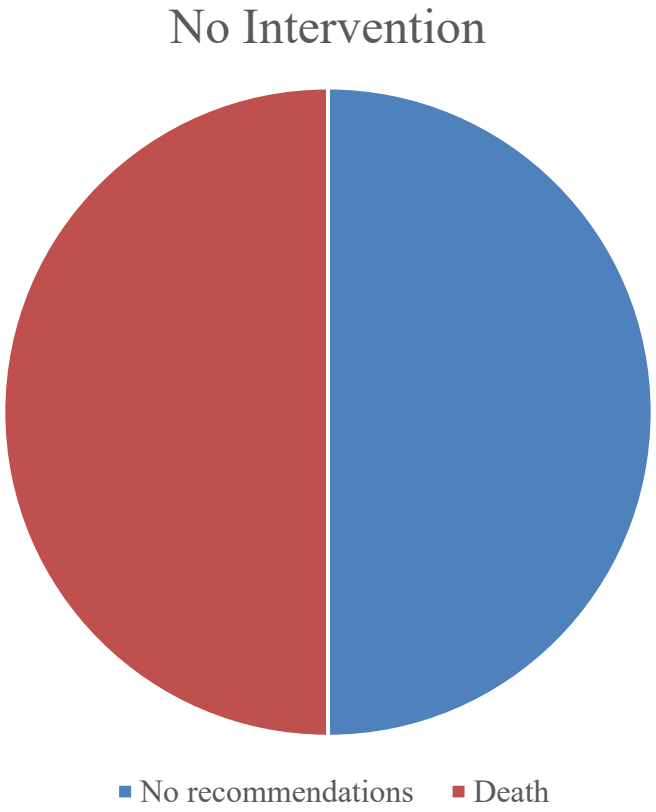
Intervention

Patients (n=4) were recommended for interventions.



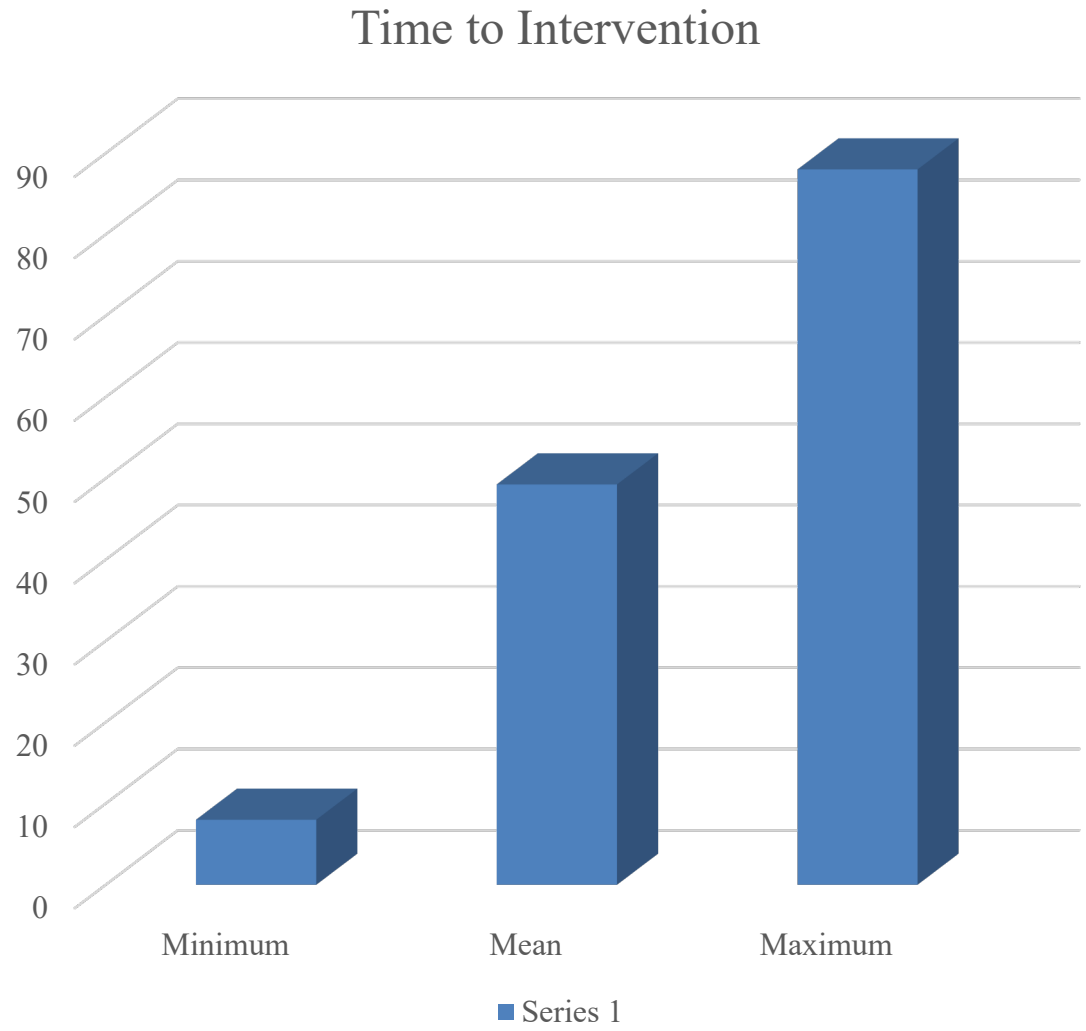
No Intervention

- Participants (n=2)
- Two participants coded
  - ➢No recommendation
  - ➢Death
  - ➢33 % not completed



Time to Intervention Days

- Participant (n=4)
- 8 days minimum
- 88 days maximum
- Mean score 49.25 days



CPPT Impact on Pain Scores

- Quantitative data was collected and analyzed
- The null hypothesis is as follows (H^0): There is no significant difference between the pre-and post-intervention pain scores.
- The alternative hypothesis is as follows (H^1): Pre- and post-intervention pain scores differ; therefore, we failed to reject the null hypothesis.
- *P*-value (p=.211) > 0.05 statistically insignificant

SPSS Paired t-test Data

Paired Samples Test

		Paired Differences					t	df	Significance	
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			One-Sided p	Two-Sided p
Pair 1	Pre_Intervention_Score - Post_Intervention_Score	1.66667	2.88675	1.66667	-5.50442	8.83775	1.000	2	.211	.423

Discussion

- Small sample size (n=6)
- Missing Data
- *P*-Value (p=.211) > 0.05 statistically insignificant
- Clinically important intervention

Sustainability Plan

- Clear objectives and mission
- Challenges
- Ongoing process improvement
- Hire RN
- Leadership Support

Ethical Considerations

- Compliant with HIPAA
- ALL PHI data was de-identified before being viewed or accessed by the collaborating statistician.
- The data collection sheet and computer were each protected with unique passwords
- Upon project completion, the data will be permanently destroyed
- IRB Determination of ‘not research’ received

IRB Determination Letter

GRAND VALLEY STATE UNIVERSITY
www.gvsu.edu

Date: December 13, 2023

To: Nicole Harpold
From: Office of Research Compliance & Integrity
Project Title: The Efficacy of Implementing a Palliative Complex Pain Panel Team to Reduce Cancer Pain
Project Number: 24-149-H
Submission Type: IRB Research Determination Submission

Action: Not Research
Effective Date: December 13, 2023
Review Type: Administrative Review

Thank you for your submission of materials for your planned scholarly activity. It has been determined that this project does not meet the definition of research* according to current federal regulations. The project, therefore, does not require further review and approval by the IRB.

Scholarly activities that are not covered under the Code of Federal Regulations should not be described or referred to as "*research*" in materials to participants, sponsors or in dissemination of findings. While performing this project, you are expected to adhere to GVSU's code of conduct and any discipline-specific code of ethics.

A summary of the reviewed project and determination is as follows:
The purpose of this project is to evaluate the effectiveness of a collaborative team approach to managing cancer-related pain in a single clinic. The activity is systematic in nature, but is not designed to be generalizable beyond the clinic being studies. As such, this study does not meet the federal definition of research and does not require IRB review or approval.

This determination letter is limited to IRB review. It is your responsibility to ensure all necessary institutional permissions are obtained prior to beginning this project. This includes, but is not limited to, ensuring all contracts have been executed, any necessary Data Sharing Agreements and Material Transfer Agreements have been signed, and any other outstanding items are completed.

If you have any questions, please contact the Office of Research Compliance and Integrity at (616) 331-3197 or rci@gvsu.edu. Please include the project title and project number in all correspondence with our office.

*Research is a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge (45 CFR 46.102 (d)).

Office of Research Compliance and Integrity | 1 Campus Drive | 049 James H Zumberge Hall | Allendale, MI 49401
Ph 616.331.3197 | rci@gvsu.edu | www.gvsu.edu/rci

Timeline

May-August 2023

- Organization assessment
- Literature review

Nov-Dec 2023

- Initial meeting with statistician
- IRB determination received

Jan.–1 March 2024

- Data collection from January through March 2024
- Follow-up meeting with the statistician in March 2024

March 2024

- Data analysis completed

April 2024

- Final project defense
- Dissemination at healthcare organization Scholar Day
- Executive summary provided to the organization
- Data will be deleted from the organization's computer

DNP Essentials Reflection

Essential	
Essential I. Scientific Underpinnings for Practice	• Applied appropriate phenomenon model • Conducted a robust literature review • Evaluated available evidence to determine evidence-based of the program's intervention
Essential II. Organizational and System Leadership for Quality Improvement and System Thinking	• Completed org. assessment using The Burke & Litwin Model of Organizational Assessment. • Utilized evidence-based implementation strategies, including the Johns Hopkins Model and Logic Model

DNP Essentials Reflection

Essential	
Essential III. Clinical Scholarship and Analytical Methods for Evidence-Based Practice	• Selected appropriate org. assessment to evaluate areas for improvement • Utilized appropriate implementation strategies • Robust literature review of best practice in cancer pain treatment • Systematic analyses of program evaluation and patient outcomes • Development of a sustainability plan
Essential IV. Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care	• Developed a smartphrase and template to secure and collect data.

DNP Essentials Reflection

Essential	
Essential V. Health Care Policy for Advocacy in Health Care	• Completion of DNP quality improvement project
Essential VI. Interprofessional Collaboration for Improving Patient and Population Health Outcomes	• Collaborated with the palliative care team and the CPPT to evaluate the program's efficacy and ensure sustainability. • Collaborated with Technology Information Services (TIS) to develop a template for collecting data • Collaborated with the site mentor to develop a reference for how to navigate the template • Provided training to the palliative care providers on how to use the template.

DNP Essentials Reflection

Essential	
Essential VII. Clinical Prevention and Population Health for Improving the Nation's Health	• All deliverables focused on improving uncontrolled pain among cancer patients. • Focus on the sustainability of the program to offer treatment opinions
Essential VIII. Advanced Nursing Practice	• Ensure safe, quality patient-centered care with the best patient outcomes • Integrated learning from program evaluation based on literature review into my current clinical practice

Implication for Practice

- Need for more robust data collection
- Larger sample size
- Comprehensive pain assessment
- Access to pain specialist
- Continuous quality improvement

Summary

- Nonprofit Palliative Care Clinic developed a CPPT to improve cancer pain
- Logic Model to guide program evaluation to determine the efficacy of the pain panel team
- QI project with data collected between January and March 2024
- Analyzed pre– and post-intervention pain scores, and time to intervention.
- Clinically important but not statistically significant results.
- Executive summary to the Palliative Care Team by April 30, 2024
- Project uploaded to ScholarWorks

Handouts

1. 12-Factors Table
2. SWOT Analysis
3. PRISMA Diagram
4. Phenomenon Model (Johns Hopkins)
5. Stakeholders Table
6. Budget
7. Implementation Framework (Logic Model)
8. Data Collection Flowsheet
9. Results
10. Proposal Defense Slides

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Questions