

Title: Engaging Interprofessional Student Teams to Develop and Evaluate an Educational Resource for Cancer Caregivers

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## **FINAL REPORT**

### **Narrative Section**

#### Executive Summary

Caregivers for patients living with cancer who suffer from emotional distress, financial strain, and inadequate medical and nursing knowledge can precipitate adverse outcomes for themselves and/or their care recipients. This study aimed to engage students from different health professions to develop and evaluate a printed educational material intended for cancer caregivers. A total of nine students from nursing, social work, and pharmacy, and twenty-five active cancer caregivers participated in the study. A twenty-page educational material was developed based on caregiver needs and concerns gathered from previous research studies and from responses to a validated questionnaire completed by caregivers. After receiving their copies, the caregivers completed a second validated questionnaire, which provided feedback on the material. The students completed a questionnaire at the end of their time with the research team to evaluate their experience. With aid from the READS Grants Program, all study-related activities requiring financial support have been completed. Next steps include data analysis, manuscript preparation, and making the educational material available to all caregivers in the cancer center.

#### Tangible Output

All project goals—identifying cancer caregiver needs, creating a printed educational material (see Appendix 1), and evaluating its helpfulness—have been completed by a team of interprofessional students with guidance from the principal investigator (PI). A manuscript detailing the study’s methodology and findings is forthcoming.

#### Additional Outcomes

When the study was conceived, it was meant to complement a novel interprofessional clinical experience called Clinical Collaborative Practice (CCP). Developed by Case Western Reserve University’s Office of Interprofessional and Interdisciplinary Education and Research, CCP aimed to provide health professions and social work students throughout Northeast Ohio with seminars on interprofessional learning and opportunities to work on clinically based

teamwork projects, while completing standard electives, rotations, or other clinical experiences at partner sites. For the inaugural CCP cohort, which began in fall 2023, Cleveland Clinic was one of two sites, the other one being an outpatient medical facility in Akron, Ohio. All nine learners involved in the study took part in weekly hour-long seminars given by CCP's director, Dr. Tyler Reimschisel. While working on their clinically based teamwork project (i.e., the cancer caregiver educational material), the students, along with the PI, learned about key concepts of interprofessional learning during the seminars, including psychological safety, deconstructive feedback, and emotional intelligence. Based on discussions between the PI and the students, they appreciated learning about these concepts on top of working on the project.

Another additional outcome was the students presenting twice at the weekly seminars, in fall 2023 and spring 2024, providing updates on the teamwork project. They thoroughly prepared for both presentations, which included PowerPoint slideshows (see Appendix 2 and Appendix 3), and were well-received by the rest of the CCP group.

As a final outcome, the Advance Practice Providers (APP) in the study (also known as APP fellows; nurse practitioners completing a year-long fellowship-level training in oncology and palliative care), wrote and submitted an abstract detailing their experience working on the teamwork project. Their work was subsequently presented as a poster at 2024 JADPRO (Journal of the Advance Practitioner in Oncology) Live on November 15 and 16, 2024 in Grapevine, Texas.

## How Each Project Objective Was Met

1. To identify knowledge gaps in caregiving through a review of previous research and a survey of active cancer caregivers.

From September 2023 to July 2024, the PI met weekly with students for CCP-related activities, especially for the teamwork project. Students consisted of four APP fellows (who were present for the entire time), one social work masteral student (from September 2023 to April 2024), and four pharmacy doctoral students (rotated for one month at a time in October 2023, November 2023, January 2024, and April 2024). From September 2023 to December 2023, the students read and discussed research articles on cancer caregiver needs, interventions for cancer caregivers, and existing printed and online resources. Upon approval of the research protocol by Cleveland Clinic's Institutional Review Board (IRB) in November 2023, accrual of study participants began. To add to information gathered by students from the literature, a questionnaire called Supportive Care Needs Survey-Partners and Caregivers was administered to study participants. This was a validated and widely used 45-item tool measuring unmet needs of cancer caregivers across the cancer trajectory. Caregivers were also asked what specific areas of day-to-day caregiving they needed further information on. As enrollment became slow and with looming financial and time constraints, the target number of participants was reduced from a planned convenience sample of 50 caregivers to 25 caregivers. Accrual and completion of the first questionnaire was subsequently done from December 2023 to May 2024. Information gathered was used as basis for the educational material's content.

2. To develop and distribute a printed educational resource addressing cancer caregiver concerns.

Seven students (i.e., four APP fellows, one social work masteral student and two pharmacy doctoral students) participated in writing the 20-page cancer caregiver educational material, with guidance from the PI and a research coordinator. Discussion on the structure and content of the material took place in parallel with study enrollment. Students then volunteered to work on specific sections. Sections of the material included the cancer care team, cancer treatment modalities, identifying and managing common symptoms, various cancer center- and community-based resources, caregiver self-care, and navigating difficult conversations. Multiple drafts were reviewed and revised in an iterative fashion, which happened from January 2024 to July 2024. Once the final draft was done and approved by the IRB, it was sent to Cleveland Clinic's Art and Photography Team (APT) for editing, layout, and printing. APT completed all the needed steps to print the materials; it was unnecessary to contract with an outside vendor as originally planned. Based on the reduced number of study participants, a total of 65 copies were printed in August 2024.

3. To evaluate the helpfulness of the printed educational resource from the perspective of active cancer caregivers.

A validated questionnaire called Patient Education Materials Assessment Tool, was utilized to evaluate the helpfulness of the cancer caregiver educational material. The tool consisted of 24 items that focus on an educational material's understandability and actionability. Two additional open-ended questions were added, asking about the material's strengths and areas for improvement. Following receipt of the educational material, each of the 25 caregivers were sent an email with a link to the questionnaire.

#### How Well Project Goals Were Met

1. To identify knowledge gaps in caregiving through a review of previous research and a survey of active cancer caregivers.

The students eagerly participated in weekly sessions where articles on cancer caregiver needs and concerns were discussed. They were initially assigned articles by the PI. On subsequent sessions, they searched for articles themselves, particularly studies highlighting various interventions for caregivers. The students also learned about proper citation of articles, which would eventually aide in manuscript preparation. After the IRB approved the research protocol, accrual of study participants commenced. This process took longer than planned, prompting adjustment of the targeted number of participants in the study. All twenty-five participants completed the first questionnaire of caregiver needs.

2. To develop and distribute a printed educational resource addressing cancer caregiver concerns.

Ideas on the cancer caregiver educational material's structure was discussed in the weekly meetings as early as October 2023, when the team talked about published interventions to address cancer caregiver concerns and needs. Over the next several months, as ideas for content became clearer based on study participants' responses to the first questionnaire, discussion on how the material would look and read became more robust and detailed. The team eventually determined assignments on which students would work on specific sections of the material. The social work student focused on difficult conversations, community-based resources and self-care, while the pharmacy students concentrated on cancer treatment modalities. The APP fellows worked on the cancer care team and symptom management, while everybody contributed to the material's introduction. A full draft was completed in May 2024, which was reviewed and edited by the research coordinator, APT, and finally, the IRB. The material was ready for printing by August, 2024.

3. To evaluate the helpfulness of the printed educational resource from the perspective of active cancer caregivers.

At the end of the three-month data collection period (August 2024 to November 2024), 23 out of 25 caregivers had completed the second questionnaire; two were lost to follow-up. At first glance, feedback from caregivers had been mostly positive. Further details will be provided in the study's manuscript. Of note, eight out of the nine students in the project completed an evaluation form at the conclusion of their time with the team to evaluate their experience. One student did not respond after multiple attempts were made. A broad look at the evaluation forms showed mostly positive feedback. Further details will be provided in the study's manuscript.

## Lessons Learned

1. No matter how thoroughly planned this project's budget and timeline were, delays beyond anticipation and control occurred. The main reason for the delay was obtaining IRB approval. The research protocol was completed in May 2023, which was then reviewed by the cancer center's Protocol Review and Management Committee to ensure scientific merit and as a prerequisite for IRB review. This was completed in July 2023. Understandably busy due to the immense volume of new research protocol applications coming from every corner of Cleveland Clinic, the IRB process ran from July 2023 to November 2023. Our protocol was returned and resubmitted multiple times for specific details that the IRB required, which incurred time and financial compensation for our research coordinator that went beyond what was originally budgeted. Once the educational material was completed, it had to go through the IRB as well, which took place from July 2024 to August 2024. To overcome such delays, discussions about the educational material's structure, organization and content had to keep moving while awaiting IRB approval and while accruing caregivers. Everyone's time was valuable, so weekly meetings with students were all carefully planned and intended to keep the project moving forward.
2. Unforeseen challenges will occur. Apart from time delays, the back-and-forth with the IRB consumed a large amount of the research coordinator's time, which took a larger chunk of the budget than previously planned. Due to these financial and time limitations, a decision was

made to reduce the convenience sample from 50 to 25. In addition, AACE's generosity in extending the grant's deadline by six months was an unforeseen blessing, one that allowed completion of all study-related procedures that required funding before the end of 2024.

3. It was a joy working with students, particularly with their diverse backgrounds. They brought unique ideas, perspectives, and skillsets, all focused towards a common goal. Everyone respected and heard each other, and demonstrated willingness in volunteering for tasks, such as coming up with weekly group "icebreaker" questions, looking for research articles, communicating with study participants, and working on sections of the educational material.
4. Speaking with caregivers in the study, it was clearly evident that what they were doing was extremely difficult and draining in many aspects. They craved for help, wished that the educational material was available at the onset of their cancer journey, and grateful for the chance to help future caregivers.
5. Close communication with the PI's mentor, Dr. Patricia Mullan was key. They communicated monthly from September 2023 to October 2024 via teleconferencing (i.e., Zoom). Dr. Mullan offered wise counsel on key issues, like how to keep students engaged, how to improve study accrual, and keeping AACE informed of key project developments.

#### Impact on Principal Investigator's Career

This study was the PI's very first grant-supported research project. As a result, it proved to be, and continues to be, a rich learning experience. From study conception to grant application to budget setting to working with stakeholders to leading all study-related procedures, each step had challenges to overcome and moments to grow wise from. The PI gained precious knowledge and insight into grant-supported projects and consequently feels well-positioned for future projects. He also acquired abundant knowledge about the needs and concerns of cancer caregivers. By virtue of this experience, the PI has already been recruited as a co-investigator for a multi-site survey-based study on oncologists' perspectives on their involvement in caregiver concerns, well-being, and education.

#### Future Publication

The remaining members of the research team (i.e., PI, research coordinator, mentor, and two "former" APP fellows now on staff at the cancer center) have started working on data analysis. Once completed, the team will proceed with manuscript preparation, followed by submission to the Journal of Cancer Education for consideration. In addition, the team will utilize feedback obtained from study participants to revise the educational material, and work towards having it available to all caregivers in the cancer center.

## Financial Section

### Proposed Costs

	<b>Rate/Hour or Cost/Unit</b>	<b>Number of Hours/Units</b>	<b>Amount</b>
<b>Personnel</b>			
1. Consultant (Dr. Patricia Mullan)			\$300.00
2. Research Coordinator			
a. Administrative tasks	\$53.27	8	\$426.16
b. Study procedures	\$53.27	75	\$3995.25
<b>Other</b>			
3. Printing of educational resource	\$2.45	110	\$269.50
4. Printing machine setup charge			\$5.00
Total Project Cost:			\$4995.91

### Actual Costs

	<b>Rate/Hour or Cost/Unit</b>	<b>Number of Hours/Units</b>	<b>Amount</b>
<b>Personnel</b>			
1. Consultant (Dr. Patricia Mullan)			\$300.00
2. Research Coordinator			
a. Administrative tasks	\$45.29	25	\$1132.25
b. Study procedures	\$45.29	75	\$3396.75
<b>Other</b>			
3. Printing of educational resource	\$2.63*	65	\$170.70
4. Printing machine setup charge			\$0.00
Total Project Cost:			\$4999.70

\*Cleveland Clinic's Art and Photography Team printed 65 copies of the educational booklet for \$170.70. This amount was divided by 65 and rounded off to \$2.63 per unit.

## **Appendices**

1. Final version of educational material
2. Clinical Collaborative Practice Project Updates 1 (November 29, 2023)
3. Clinical Collaborative Practice Project Updates 2 (April 15, 2023)
4. Poster presented by Advance Practice Providers at 2024 JADPRO Live on November 15 and 16, 2024 in Grapevine, TX