Using Technology to Optimize Collaborative Care Management of Depression in Urban & Rural Cancer Centers: The SCOPE Study

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BACKGROUND

- Up to 25% of patients with cancer develop clinical depression, most of whom do not receive adequate treatment [1]
- Collaborative Care Management (CoCM) is a cost-effective, population-based approach to managing depression among patients with cancer [2]
- CoCM limitations: (1) Maintaining patient-provider engagement, (2) Long-term tracking of patient reported outcomes (PROs) such as PHQ-9 and GAD-7, (3) Limited avenues to encourage treatment adherence

Objective: Develop and test a web-based application and registry to enhance delivery and outcomes of CoCM in patients with cancer & depression

METHODS

Preliminary data among patients in study ≥ 3 months

Participants (n=48): Patient at Fred Hutchinson Cancer Center receiving treatment for cancer, PHQ-9 ≥ 10 with 1+ cardinal symptom(s) ≥ 2, receiving CoCM

Procedures: Hybrid Type 1 Effectiveness-Implementation Study. Participants randomized to:

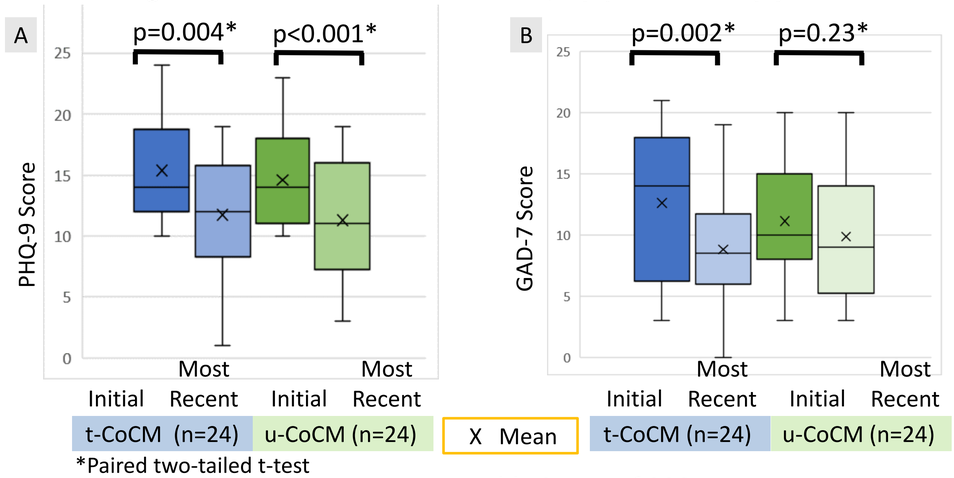
(1) t-CoCM (technology-enhanced CoCM)

(2) u-CoCM (usual CoCM)

- t-CoCM group used a web-based SCOPE App with features such as mood logging, PHQ-9 and GAD-7 surveys, Behavioral Activation activity scheduling & tracking, and safety planning
- SCOPE App data was available in the web-based SCOPE Registry for clinical social workers and consulting psychiatrists to review.
- PROs and Safety Plan could be assigned by social work
- Data were collected from the SCOPE App & Registry and EPIC electronic health records

RESULTS

Figure 1: Initial and most recent PHQ-9 (A) and GAD-7 (B) scores



*Paired two-tailed t-test

Figure 2: SCOPE App Home Tab

https://sites.uw.edu/scopestudy/

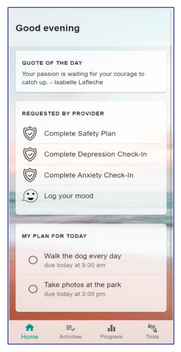


Table 2: Use of SCOPE App Features

SCOPE App Feature	Users N=24	Median # (range) among Users
Logged 1+ mood rating	20	14 (1-113)
Brainstormed 1+ activity*	12	10 (2-29)
Scheduled 1+ activity	7	182 (40-1205)
Completed 1+ activity	6	14 (6-251)

*Most Common Life Areas: Recreation/Interests/Creativity (9), Education/Career/Contributing (7), Mind/Body/Spirituality (6), Relationship/Social Life (6), Responsibilities (5)

Table 1: Participant demographic & clinical characteristics

Category	Total (N=48)	t-CoCM (n=24)	u-CoCM (n=24)
Female (%)	36 (75)	22 (91.7)	14 (58.3)
Age - Mean (SD)	56.8 (12.5)	55.8 (13.3)	57.7 (11.9)
White Race (%)	42 (87.5)	21 (87.5)	21 (87.5)
Months in Study - Mean (SD)	5.9 (2.3)	5.7 (2.2)	6.1 (2.4)
Number of Patient Reported Outcomes (PROs) - Mean (SD)			
PHQ-9**	7.7 (6.9)	9.2 (7.1)	6.3 (6.6)
GAD-7**	7.8 (7.1)	9.4 (7.4)	6.2 (6.6)
Change in PHQ-9 & GAD-7 Scores (initial to most recent) - Mean (SD)			
PHQ-9	-3.5 (4.9)	-3.6 (5.6)	-3.3 (4.1)
GAD-7*	-2.5 (5.2)	-3.8 (5.2)	-1.3 (5.0)

Unpaired two-tailed t-test comparing t-CoCM vs. u-CoCM, *p<0.1, **p<0.05

Participant cancer diagnoses include: breast (22), prostate (3), heme (2), HNL (2), melanoma (2), multiple myeloma (2), neuroendocrine (2), rectal (2), AML (1), cervical (1), CML (1), fallopian tube (1), GI-pancreatic (1), GI-non-pancreatic (1), giant cell (1), GIST (1), GU (1), ovarian (1), sarcoma (1)

DISCUSSION

Preliminary data show increased PRO tracking (Table 1) and suggest larger improvement in anxiety (Table 1, Figure 1) in the t-CoCM group compared to the u-CoCM group

Limitations:

- Small sample size (n=48)
- SCOPE App activity scheduling feature still being modified

Future Directions:

- Monitor outcomes over 9 months
- Track SCOPE App & Registry adaptations over course of study
- Integrate SCOPE App & Registry with electronic health record

CONCLUSION

Preliminary data suggest technology may enhance delivery of CoCM and decrease distress for patients with cancer and depression. Further adaptations are needed to optimize implementation.

ACKNOWLEDGEMENTS/REFERENCES

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