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The Effects of a Teletherapy Follow-Up Education Program on the Quality of Life and Self-Care Management of Lymphedema Among Breast Cancer Patients: A Doctoral Capstone Experience

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Introduction

Breast cancer patients are at a life-time risk of developing many various conditions such as lymphedema. Breast cancer-related lymphedema (BCRL) can be characterized by swelling of the arm, shoulder, hand, breast, and trunk on the same side where the patient received breast cancer treatment and often leads to tension, weakness, pain, infection, loss of function, and decreased quality of life (Deveci et al., 2019; Deveci et al., 2020). The complex long-term requirements of BCRL management are associated with patient burden, reduced quality of life, and poor compliance (Brown et al., 2014). McCaulley and Smith (2014) reported that continued follow-up may be difficult for some patients because of a lack of motivation, financial stress, transportation, and availability for appointments. If left untreated, symptoms of lymphedema can be debilitating.

Purpose: to investigate the effects of a teletherapy follow-up education program designed for BCRL patients as an appropriate model of care in hopes of promoting higher compliance in long-term self-care for lymphedema management to increase overall quality of life.

Methods

Primary Objective: evaluate the effect of a teletherapy follow-up education program on the participants' quality of life in lymphedema management.

Secondary Objective: determine whether an increase occurred in compliance and independence in following recommended lymphedema management protocols within the home setting.

Hypothesis: Participants in the intervention group will have different outcomes than the control group participants (H_A : median difference $\neq 0$).

Participants: Eight female subjects (mean age = 61.88 years)

Treatment Groups:
Control: resumed care as usual.
Intervention: weekly, hour-long teletherapy session covering lymphedema-related topics conducted on Microsoft Teams.

Outcome Measures: Lymphoedema Quality of Life (LYMQOL), At-Home Self-Care Compliance Survey, Volumetric Measure (mL), Range of Motion (ROM) – shoulder flexion and abduction, & Pain Values (scale from 0-10).

Results

At-Home Self-Care Compliance Survey

Supporting Factors: time management, motivation, and family support

Barriers: lack of time, pain, fatigue, and interference of cancer treatments (i.e., chemotherapy or radiation).

Descriptive table of participants included in the study stratified by treatment group

| | Overall | Control | Intervention | p |
|---------------------------------------|----------------------------|----------------------------|----------------------------|------|
| n | 16 | 8 | 8 | |
| Volume (mL) (median [IQR]) | 3033.99 [2270.98, 3359.90] | 2270.98 [2007.55, 2949.96] | 3365.06 [3110.50, 3482.02] | 0.99 |
| Pain (median [IQR]) | 1.50 [0.00, 4.00] | 0.50 [0.00, 2.12] | 3.00 [0.75, 4.25] | 0.90 |
| LYMQOL | | | | |
| Function (median [IQR]) | 1.20 [1.10, 1.50] | 1.20 [1.10, 1.25] | 1.50 [1.25, 1.55] | 0.88 |
| Mood (median [IQR]) | 1.30 [1.20, 1.75] | 1.25 [1.20, 1.70] | 1.70 [1.15, 1.75] | 0.59 |
| Symptoms (median [IQR]) | 1.80 [1.30, 2.00] | 1.90 [1.23, 2.00] | 1.80 [1.40, 2.25] | 0.64 |
| Appearance (median [IQR]) | 1.40 [1.00, 1.60] | 1.30 [1.15, 1.45] | 1.60 [1.00, 1.90] | 0.78 |
| Quality of Life (median [IQR]) | 8.00 [7.00, 8.00] | 7.75 [7.00, 8.00] | 8.00 [7.50, 8.50] | 0.18 |
| ROM | | | | |
| Abduction (median [IQR]) | 141.00 [124.50, 164.25] | 141.00 [124.00, 148.25] | 145.50 [127.50, 178.00] | 0.22 |
| Flexion (median [IQR]) | 140.00 [135.75, 151.25] | 140.00 [125.50, 147.75] | 141.00 [136.00, 151.25] | 0.28 |

Note: IQR = Interquartile Range (75% - 25%). One-way Wilcoxon signed rank test do not show any significant relationships within the data comparing the control and intervention group.

A Wilcoxon test was conducted to test the improvement between the control and intervention group and compare medians. The statistical analysis of the Wilcoxon test demonstrated no significant difference between the intervention group and control group in all outcomes.

Discussion

There was no indication that a teletherapy follow-up education program can influence the quality of life and self-care management of lymphedema; however, this program did not demonstrate any negative outcomes in participants' reports. Subjects who received the education program made minimally clinical improvement in various outcomes and voiced overall positive experience of the program.

Patient Interviews

"very important information . . . I would recommend and I appreciate all the outside resources that you provided".

"very informative . . . learning new things and how things work".

"Overall, the program was good. The more you learn what's going on with your body, it helps you understand what's happening outside of your body".

"A group or in-person program to provide additional support and build connections with other patients." "Increasing virtual check-ins such as sending reminder texts or emails to help promote a higher accountability."

These findings support that teletherapy interventions may not be an appropriate method in providing substantial change in lymphedema care but can be useful as a supplemental education tool. Teletherapy interventions may provide additional support in the improvement of the long-term self-care of other chronic conditions, but further research is warranted for lymphedema.

Limitations: External variables were not controlled (i.e., participants were actively receiving other cancer). Due to the small sample size, having a normal statistical distribution, having the results generalized to the sample population, or providing the opportunity to find any significance within the data was not possible.

Conclusion

Limited amount of research exists that directly addresses whether a teletherapy component can enhance quality of life and self-care management of lymphedema among breast cancer patients. Occupational therapists possess the skill and knowledge to address the gap in care seen in post-treatment needs of cancer patients battling post-complications such as lymphedema.

Future research should focus on addressing cancer patients' needs and creating protocols to increase support, quality of life, and compliance of self-care skills. Researchers should explore more options in teletherapy as a feasible supplementary tool to increase compliance in long-term self-care among BCRL patients to promote better quality of life.

References

References available upon request

