

Factors Associated with Health-Related Quality of Life in Patients with Breast Cancer-Related Lymphedema Undergoing Prospective Surveillance

Sun Woo Kim^a, Ji Young Lim^a, Seonghee Kim^a, Seoyeong Lim^a, Ji Hye Hwang^b

^a Department of Physical and Rehabilitation Medicine, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea

^b Department of Physical and Rehabilitation Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea



INTRODUCTION

- Many studies have reported that breast cancer-related lymphedema (BCRL) is associated with a poor quality of life (QoL) and has physical and psychosocial impacts on patients. **In highlighting the importance of QoL, there has been an emphasis on the regular evaluation of QoL and the implementation of comprehensive approaches from the perspective of patients in addition to efforts to reduce the size of the lymphedema.** This study aimed to examine the factors associated with QoL to develop effective interventions for BCRL patients.

METHODS

Outpatient setting (Lymphedema Rehabilitation Clinic)



Outcome measures

Lymphedema-specific QoL (LYMQOL – Domain)



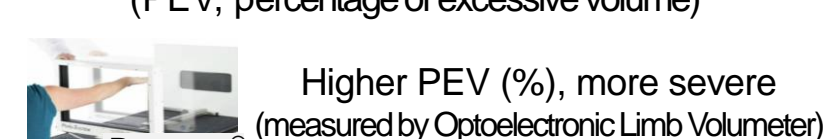
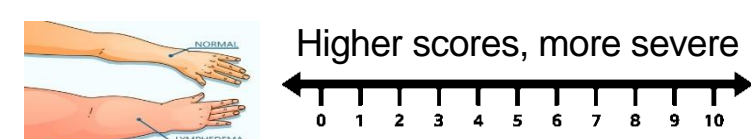
Lymphedema Severity

Perceived Severity

Limb Volume

How swollen do you think your arm is?
Please mark the score (0–10)

The ratio of the difference between both arms (PEV)
(PEV, percentage of excessive volume)



Sociodemographic and Clinical variables

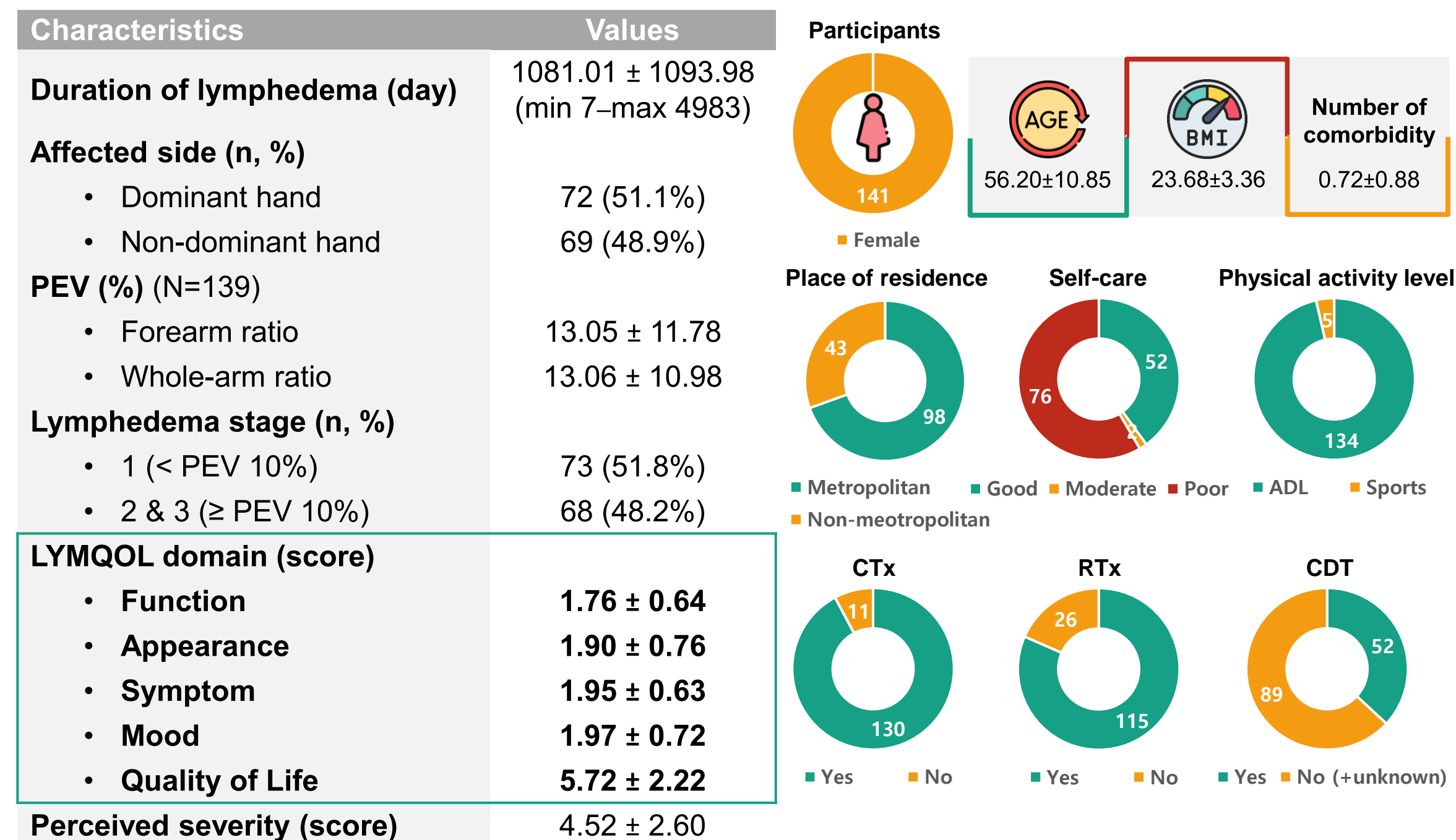
- Age, Body Mass Index, Residency, Comorbidities, Self-care, and Physical activity level
- Duration of lymphedema, Affected side, Stage of lymphedema (Stage 2-3: \geq PEV10%)
- Breast cancer treatment (presence and frequency)
- Intervention for lymphedema (Complex Decongestive Therapy, CDT)

Data analysis

- The participants' characteristics were analyzed using descriptive and frequency analysis.
- To examine the associated factors and their impacts on the QoL in patients with BCRL, multiple regression analysis was conducted. The statistical significance was set at $p < 0.05$.

RESULTS

Table 1 & Figure 1. Demographics of Breast Cancer-Related Lymphedema (N=141)



Values are presented as number (%) or Mean \pm Standard deviation. PEV, Percentage of Excessive Volume (measured by optoelectronic limb volumeter); Lymphedema stage, clinical classification; Comorbidity, hypertension, diabetes, hyperlipidemia, BMI: Body Mass Index; Self-care, guideline-compliant compression stocking wear (Good: guideline-compliant, Moderate: occasionally, Poor: not at all); ADL, Activities of Daily Living; CTx, Chemotherapy; RTx, Radiotherapy; CDT, Complex Decongestive Therapy.

- The women were aged 33–84 years with a mean of 56.2 (SD 10.9) and more than two-thirds lived in metropolitan areas. Approximately forty percent of the women had experienced BCRL for more than 3 years. According to the PEV value, the stage of lymphedema was evenly distributed. They perceived the severity of their limb condition as moderate. More than half reported that they did not engage in any self-management of their lymphedema. All most patients had undergone cancer treatments, but, more than two-thirds did not receive CDT for lymphedema treatment.

- BCRL patients had a mean score of 1.91 (SD 0.62) on the domains of LYMQOL, which is close to slightly affected by lymphedema, except for the QoL score. **The score of their QoL was a mean of 5.72 (SD 2.22).** LYMQOL demonstrated high reliability and validity, both exceeding 0.9. Significant moderate to strong correlations were observed among the LYMQOL domains.

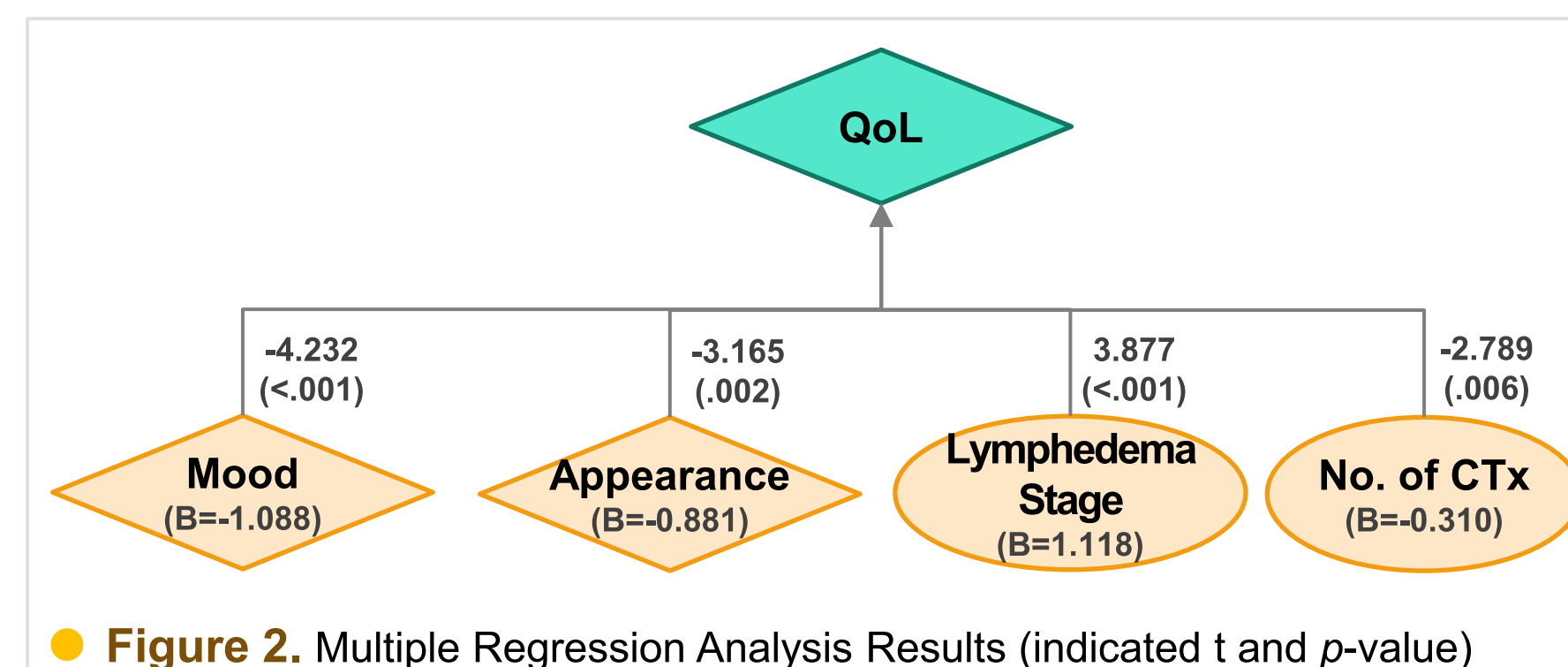


Figure 2. Multiple Regression Analysis Results (indicated t and p-value)

- The multiple regression analysis examining factors influencing the QoL in women with BCRL revealed that **mood, appearance, the stage of lymphedema, and the number of chemotherapy sessions were significant factors. This model explained 47.6% of the variance in QoL** ($F = 26.471, p < .001$) (Figure 2).

CONCLUSIONS

- Our primary results showed as **their mood and appearance worsened, the number of chemotherapy sessions increased, and the stage of lymphedema was lower, the QoL for patients with BCRL decreased.** This finding supports previous evidence of the negative effects of arm lymphedema on body image and appearance, and psychosocial factors. The risk of mild lymphedema progressing to a severe stage may cause psychological stress and increase the burden of management, potentially affecting QoL. In addition, the chemotherapy might have a prolonged impact on their general health conditions and QoL.