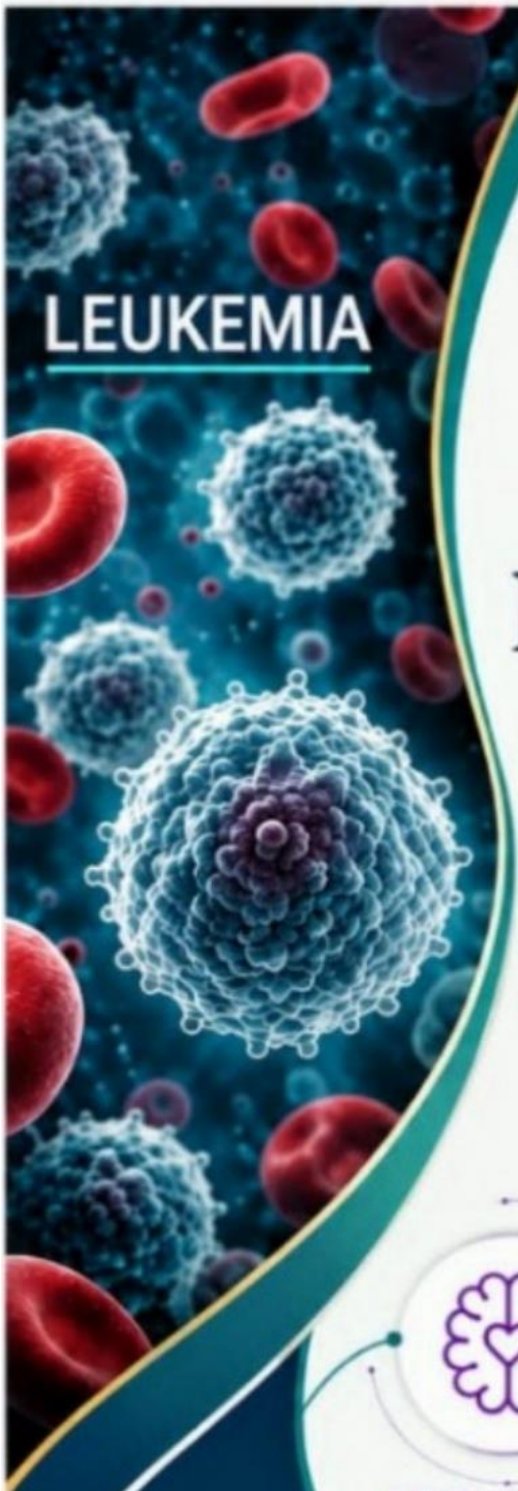


The Psychological and Economic Impact on Leukemia Patients and Their Companions

at Dongola Oncology Center



PSYCHOLOGICAL IMPACT

ECONOMIC IMPACT

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CHAPTER ONE: INTRODUCTION

Background :

Leukemia is a group of blood cancers that begin in the bone marrow and interfere with the production of healthy blood cells. Receiving care may require specialized investigations, repeated hospital visits, ongoing treatment, and continuous follow-up. These demands can affect patients psychologically and economically, as well as the family members or other companions who support them [1].

At Dongola Oncology Center in Northern State, Sudan, patients and companions may face expenses related to medical care, medicines, investigations, transportation, accommodation, food, and time away from work. These costs can place pressure on household resources and may affect emotional well-being and access to continued care. The local experiences of patients and companions need to be assessed rather than assumed.

Understanding these challenges may help nurses and healthcare providers identify needs for psychological support, health education, social assistance, and referral services. The study will therefore assess the psychological and economic impact associated with receiving leukemia healthcare at Dongola Oncology Center.

Problem Statement :

Leukemia care can create psychological stress and direct or indirect financial costs for patients and the people accompanying them. However, locally collected evidence describing these experiences among patients and companions attending Dongola Oncology Center is limited in the material reviewed for this proposal. This study will document reported psychological distress, economic expenses, and the support systems used by participants.

Theoretical Framework:

The study is informed by Neuman's Systems Model, which views individuals as systems affected by intrapersonal, interpersonal, and extrapersonal stressors [2], and by the stress-and-coping framework associated with Lazarus and Folkman. In this study, relevant stressors may include travel distance and costs, accommodation, separation from family, disruption of domestic roles, and uncertainty associated with illness and care. These frameworks guide the study's attention to psychological, social, and economic needs.

Justification:

The study may help nurses recognize common psychological concerns and practical difficulties reported by participants. Information about transport, accommodation, treatment-related expenditure, and barriers to attending appointments may inform discussions about patient-support services. The findings may also provide locally collected evidence and identify questions for future research.

General Objective:

To assess the psychological and economic impact on leukemia patients and their companions at Dongola Oncology Center.

Specific Objectives:

1. To describe the socio-demographic and relevant clinical characteristics of leukemia patients and their companions at Dongola Oncology Center.
2. To assess reported psychological distress, including anxiety, depressive symptoms, sleep disturbance, and loneliness, among patients and companions.
3. To identify direct and indirect expenses associated with healthcare, including medical costs, transportation, accommodation, food, and lost income.

4. To explore associations between reported psychological distress and relevant socio-economic factors.
5. To identify coping strategies and support systems used by patients and companions during care.

CHAPTER TWO: LITERATURE REVIEW

1. Yucel, Zhang, and Panjabi (2021) reviewed 71 publications concerning the health-related and economic burden experienced by family caregivers of people with acute myeloid leukemia and other hematological malignancies. The review described psychological and physiological stress, sleep problems, reduced health-related quality of life, and effects on family relationships, supporting the importance of assessing caregiver needs [1].
2. Parker and colleagues'2022 systematic review of financial burden in hematological malignancies included 20 studies. Across the included studies, 15%–59% of patients reported financial burden, with out-of-pocket costs commonly related to medication, clinical appointments, and travel. Financial burden was associated with poorer quality of life in some studies [2].
3. Ouchveridze and colleagues (2022) reviewed 55 studies of financial toxicity among patients with hematological malignancies. Across studies, 20%–50% of patients reported some form of financial toxicity, including lost work productivity, food and transportation costs, and depletion of savings. Lower income, unemployment, younger age, and rural residence were among the commonly reported risk factors [3].
4. Zigmond and Snaith (1983)

   Title: The Hospital Anxiety and Depression Scale.

   Aim: The study aimed to develop a tool for assessing anxiety and depression among hospital patients.

   Methodology: The researchers developed the Hospital Anxiety and Depression Scale (HADS) to identify symptoms of anxiety and depression.

   Relevance to the Current Study: This study supports the assessment of psychological distress among leukemia patients and their companions at Dongola Oncology Center[4].

CHAPTER THREE: METHODOLOGY

1. Study Design

A quantitative, descriptive cross-sectional, facility-based study will be conducted. Data will be collected once from each participant during the approved data-collection period. This design can describe reported experiences and explore associations but cannot establish temporal order or causation.

2. Study Area

The study will be conducted at Dongola Oncology Center, Northern State, Sudan. The final submission should use the facility's officially approved name and describe the relevant services available at the site.

3. Study Population

The study population comprises adult patients with a confirmed diagnosis of leukemia who attend Dongola Oncology Center for leukemia-related care, and adult companions who accompany or support those patients during care. Participants must meet the approved inclusion criteria and provide informed consent.

4. Sample Size

The total study population consists of 100 leukemia patients receiving healthcare at the Oncology Center in Dongola. The sample size was calculated using Yamane's formula with a 5% margin of error.

Sample size formula:

$N = N / [1 + N(e)^2]$

Where:

-n = required sample size

-N = total study population (100 patients)

-e = margin of error (0.05)

Calculation:

$N = 100 / [1 + 100(0.05)^2] = 100 / 1.25 = 80.$

Therefore, the proposed sample size for this study is 80 leukemia patients.

5. Sampling Technique

Eligible participants will be recruited from the Oncology Center in Dongola after obtaining the necessary ethical approval and administrative permission. The objectives and procedures of the study will be explained to each eligible patient, and informed consent will be obtained before data collection begins. Participation will be voluntary, and the confidentiality of all collected information will be maintained throughout the study. Patients who meet the inclusion criteria and agree to participate will be recruited until the required sample size of 80 patients is reached.

6. Data Collection

Data will be collected using a structured interviewer-administered questionnaire. Before use, the questionnaire should be reviewed by the supervisor and relevant clinical or research experts and pilot-tested as required. The final questionnaire should contain items corresponding to each study objective and distinguish patient responses from companion responses.

7. Study Variables

Independent/explanatory variables: treatment-related expenses, travel expenses, accommodation costs, lost income, and family or social support.

Outcome variables: reported psychological effects, including anxiety, depressive symptoms, sleep disturbance, and loneliness, and reported economic effects, including financial difficulty, treatment costs, and travel expenses.

Background variables: age, sex, marital status, education, residence, treatment duration, and participant type (patient or companion).

The operational definitions and questionnaire items should be specified before data collection.

8. Data Analysis

Data will be checked, coded, and entered into SPSS or an equivalent statistical program. Descriptive statistics will summarize participant characteristics and study variables. Categorical variables will be presented as frequencies and percentages. Continuous variables will be summarized using means and standard deviations when approximately symmetric, or medians and interquartile ranges when skewed. Any inferential tests should be selected according to the variables, data distribution, and study objectives.

9. Ethical Considerations

Administrative approval will be obtained from the relevant university, health authorities, and Dongola Oncology Center before data collection. Informed consent will be obtained from all participants. Participation will be voluntary, and participants may withdraw at any time without affecting their care. Privacy and confidentiality will be protected, and direct personal identifiers will not be included in the analysis dataset. Data will be used for academic research purposes only. Recruitment and data collection will begin only after all required approvals are obtained.

CHAPTER FOUR: WORK PLAN

The following three-month schedule is provisional and should be adjusted to the academic calendar and the timing of ethical and administrative approvals.

Activity	Month 1	Month 2	Month 3
Proposal review and supervisor approval	✓		
Ethical and facility permissions	✓	✓	
Questionnaire review and pilot		✓	
Data collection			
Data entry and analysis			
Report writing and submission			

Budget :

A detailed budget was not provided in the source file. Any required budget should be prepared using locally verified estimates for transport, printing and photocopying, communication, stationery, and other approved study-related expenses. Do not insert estimated amounts without checking actual costs and the university/center requirements.

REFERENCES :

1. Yucel, E., Zhang, S., & Panjabi, S. (2021). Health-related and economic burden among family caregivers of patients with acute myeloid leukemia or hematological malignancies. Advances in Therapy, 38, 5002–5024. https://doi.org/10.1007/s12325-021-01872-x
2. Parker, C., Berkovic, D., Ayton, D., Zomer, E., Liew, D., & Wei, A. (2022). Patient perceived financial burden in haematological malignancies: A

systematic review. Current Oncology, 29(6), 3807–3824 . https://doi.org/10.3390/curroncol29060305

3. Ouchveridze, E., Banerjee, R., Desai, A., Aziz, M., Lee-Smith, W., Mian, H., Berger, K., McClune, B., Sborov, D., Qazilbash, M., Kumar, S., & Mohyuddin, G. R. (2022). Financial toxicity in hematological malignancies: A systematic review. Blood Cancer Journal, 12, Article 74. https://doi.org/10.1038/s41408-022-00671-z
4. Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. Acta Psychiatrica Scandinavica, 67(6), 361–370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x