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# Impact of Structured Psychosocial Intervention on Distress in Adolescent and Young Adult Cancer Patients: A Randomized Controlled Trial from India

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## Abstract

### Introduction

Adolescent and young adult (AYA) patients often experience substantial psychosocial distress during cancer treatment. In our preceding cross-sectional study of 500 AYA patients, 55% reported moderate to severe distress (DT ≥ 4), with higher distress among females, those with lower education, advanced disease, and poor self-reported health. These findings highlighted significant unmet needs and informed the development of a structured psychosocial intervention. This randomized trial evaluates its impact on distress reduction.

### Methods

This single-center, prospective, randomized controlled trial enrolled 100 AYA patients (15–39 years) receiving active treatment. Participants were randomized 1:1 into:

• **Group A (Control):** Standard oncology care

• **Group B (Intervention):** Four weekly structured counselling sessions focused on psychoeducation, coping skills, communication, peer support, and distress-specific strategies.

Distress was measured at baseline and 4 weeks using the NCCN Distress Thermometer (DT), Problem Checklist, and self-rated quality-of-life indicators. Statistical analyses included paired and independent t-tests, chi-square tests, and multivariate logistic regression.

### Results

Baseline patterns were consistent with earlier findings: 55% had DT ≥ 4, with higher distress in females, patients receiving palliative-intent therapy, and those with lower educational attainment. Distress levels remained unchanged in the control group. In contrast, the intervention group showed a significant reduction in mean DT scores from 6.1 to 2.9 ($p < 0.001$). Improvements were most notable in emotional concerns (anxiety, sadness), social/practical challenges (financial strain, work disruption), and perceived overall well-being.

### Conclusions

AYA cancer patients carry a high burden of distress, underscoring the need for systematic psychosocial support. This study demonstrates that a structured psychosocial intervention significantly reduces distress compared with

standard care. Despite limitations of sample size and short follow-up, these findings support routine distress screening and integration of tailored psychosocial services in AYA oncology. Larger trials are warranted to assess long-term impact.

| Parameter | Category | Group A (n=50) | Group B (n=50) |
|---|---|---|---|
| **Gender** | Male | 29 (58%) | 30 (60%) |
| | Female | 21 (42%) | 20 (40%) |
| **Age Range** | Mean age | 26.6 years | 26.2 years |
| | Age group 15–24 | 20 (40%) | 21 (42%) |
| | Age group 25–39 | 30 (60%) | 29 (58%) |
| **Treatment Intent** | Curative | 33 (66%) | 32 (64%) |
| | Palliative | 17 (34%) | 18 (36%) |

*Table 1: Demographics*

| Diagnosis | Group A Males (%) | Group A Females (%) | Group B Males (%) | Group B Females (%) |
|---|---|---|---|---|
| Acute Lymphoblastic Leukemia | 6 (24.1%) | 4 (19.0%) | 6 (23.1%) | 4 (14.3%) |
| Hodgkin Lymphoma | 4 (13.8%) | 2 (9.5%) | 3 (11.5%) | 2 (7.1%) |
| Non-Hodgkin Lymphoma | 3 (10.3%) | 2 (9.5%) | 3 (11.5%) | 2 (7.1%) |
| Sarcoma | 3 (10.3%) | 5 (23.8%) | 3 (11.5%) | 4 (14.3%) |
| Germ Cell Tumors | 7 (24.1%) | 0 (0.0%) | 6 (23.1%) | 0 (0.0%) |
| Breast Cancer | 0 (0.0%) | 7 (33.3%) | 0 (0.0%) | 6 (21.4%) |
| Colorectal Cancer | 2 (6.9%) | 2 (9.5%) | 2 (7.7%) | 2 (7.1%) |
| Hepatobiliary Cancer | 2 (6.9%) | 0 (0.0%) | 1 (3.8%) | 0 (0.0%) |
| CNS Tumors | 2 (6.9%) | 2 (9.5%) | 2 (7.7%) | 2 (7.1%) |
| Head and Neck Cancer | 1 (3.4%) | 0 (0.0%) | 1 (3.8%) | 0 (0.0%) |
| Soft Tissue Sarcomas | 1 (3.4%) | 2 (9.5%) | 1 (3.8%) | 2 (7.1%) |
| Adrenal Cortical Carcinoma | 1 (3.4%) | 0 (0.0%) | 1 (3.8%) | 0 (0.0%) |
| Thymic Tumors | 1 (3.4%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Mesothelioma | 1 (3.4%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Cancer of Unknown Primary | 1 (3.4%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |

*Table 2: Diagnosis Distribution by Gender*

| Category | Concern | Prevalence Males (%) | Prevalence Females ( %) |
|---|---|---|---|
| **Physical Concerns** | Pain | 58.8% | 66.7% |
| | Fatigue | 52.9% | 66.7% |
| | Sleep disturbances | 41.2% | 50% |
| | Changes in eating habits | 29.4% | 25% |
| | Sexual health concerns | 47.1% | 58.3% |
| **Emotional Concerns** | Worry or anxiety | 41.2% | 58.3% |
| | Sadness or depression | 23.5% | 33.3% |
| | Loss of interest in activities | 35.3% | 41.7% |
| | Fear | 23.5% | 33.3% |
| | Feelings of worthlessness or being a burden | 47.1% | 58.3% |
| **Social and Practical Concerns** | Work or school disruptions | 41.2% | 50% |
| | Financial strain | 29.4% | 41.7% |
| | Access to medications and treatment logistics | 23.5% | 33.3% |
| | Difficulties in taking care of themselves or others | 23.5% | 33.3% |
| | Transportation issues | 17.6% | 25% |
| **Spiritual or Religious Concerns** | Concerns about death, dying, or afterlife | 29.4% | 33.3% |
| | Change in faith or beliefs due to illness | 11.8% | 16.7% |
| | Conflict between beliefs and cancer treatment | 5.9% | 8.3% |
| | Sense of meaning/purpose | 23.5% | 25% |

*Table 3: Key Findings on Distress and Unmet Needs*

| Category | Concern | Male (%) | Female (%) | Significant Change in Group B (%) |
|---|---|---|---|---|
| **Physical Concerns** | Pain | 58.8 | 66.7 | ↓ 45% |
| | Fatigue | 52.9 | 66.7 | ↓ 42% |
| | Sleep disturbances | 41.2 | 50.0 | ↓ 38% |
| | Changes in eating habits | 29.4 | 25.0 | ↓ 20% |
| | Sexual health concerns | 47.1 | 58.3 | ↓ 40% |
| **Emotional Concerns** | Worry or anxiety | 41.2 | 58.3 | ↓ 60% |
| | Sadness or depression | 23.5 | 33.3 | ↓ 55% |
| | Loss of interest in activities | 35.3 | 41.7 | ↓ 40% |
| | Fear | 23.5 | 33.3 | ↓ 33% |
| | Feelings of worthlessness/burden | 47.1 | 58.3 | ↓ 58% |
| **Social/Practical Concerns** | Work or school disruptions | 41.2 | 50.0 | ↓ 48% |
| | Financial strain | 29.4 | 41.7 | ↓ 52% |
| | Medication/treatment access | 23.5 | 33.3 | ↓ 36% |
| | Difficulties in self/other care | 23.5 | 33.3 | ↓ 38% |
| | Transportation issues | 17.6 | 25.0 | ↓ 28% |
| **Spiritual Concerns** | Concerns about death/afterlife | 29.4 | 33.3 | ↓ 25% |
| | Change in faith or beliefs | 11.8 | 16.7 | ↓ 15% |
| | Conflict between beliefs and treatment | 5.9 | 8.3 | ↓ 12% |
| | Sense of meaning/purpose | 23.5 | 25.0 | ↓ 30% |

*Table 4: Distress Domains by Gender post Intervention*

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