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# EFFICACY OF COMBINED CHANNA STRIATA AND CURCUMIN SUPPLEMENTATION TO ENHANCE QUALITY OF LIFE AMONG NSCLC PATIENTS UNDERGOING CHEMOTHERAPY: A RANDOMIZED, DOUBLE-BLIND, CONTROLLED TRIAL

**Ammayasyiro Uzhma[1,2]*, Noni Novisari Soeroso[1], Setia Putra Tarigan[1,2], Muhammad Ichwan[3], Taufik Ashar[4], Guntur Berlian[5], Asep Aripin[5]**

[1]Department of Pulmonology and Respiratory Medicine, Faculty of Medicine, Universitas Sumatera Utara, Jl. Dr Mansyur No.5 Medan, Sumatera Utara 20155, Indonesia

[2]Department of Pulmonology and Respiratory Medicine, Adam Malik Hospital, Jl. Bunga Lau No. 17, Kemenangan Tani, Medan Tuntungan, Medan, Sumatera Utara 20136, Indonesia

[3]Department of Pharmacology and Biomedicine, Faculty of Medicine, Universitas Sumatera Utara, Jl. Dr Mansyur No.5 Medan, Sumatera Utara 20155, Indonesia

[4]Department of Environmental Health, of Medicine, Universitas Sumatera Utara, Jl. Dr Mansyur No.5 Medan, Sumatera Utara 20155, Indonesia

[5]Mega Medica Pharmaceuticals, Jl Peta Selatan, Komp. Ruko Megah Blok A No.48, Kalideres, Jakarta Barat, Jakarta 11840, Indonesia

*uzhmaamma@gmail.com

**ABSTRACT**

Chemotherapy remains a cornerstone treatment for non-small cell lung cancer (NSCLC), but treatment-related toxicities frequently contribute to nutritional deterioration and impaired quality of life (QoL). Nutritional supplementation may help support patients during treatment. This study evaluated the efficacy of combined Channa striata extract and Curcumin supplementation in improving health-related quality of life among patients with NSCLC undergoing chemotherapy. This study aimed to assess the effects of combined Channa striata extract and Curcumin supplementation on changes in health-related quality of life among patients with non–small cell lung cancer receiving chemotherapy. A randomized, double-blind, placebo-controlled trial was conducted among newly diagnosed NSCLC patients receiving chemotherapy. Participants were randomly assigned to receive either a combination of Channa striata extract and Curcumin (Striatamin®, PT Mega Medica) or placebo during two chemotherapy cycles. Quality of life was assessed using the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC QLQ-C30) at baseline and after treatment. Thirty-two patients were enrolled, with 16 patients in each group. On the EORTC QLQ-C30 functional scale, social functioning improved significantly in the intervention group compared with the control group after the second chemotherapy cycle (45.06 ± 25.65 vs. 33.33, $p = 0.049$). The intervention group also demonstrated a significantly greater improvement in global health status than the control group (12.49 ± 12.57 vs. 8.27, $p = 0.041$). Although numerical improvements were observed in several symptom domains, no significant differences were found between groups on the symptom scale ($p > 0.05$). Administration of a combination of Channa striata and Curcumin up to the second chemotherapy cycle was shown to improve quality of life, particularly in the social functioning domain, and to significantly enhance overall health in patients with NSCLC.

Keywords: channa striata; curcumin; non-small cell lung cancer; quality of life

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## INTRODUCTION

According to Globocan 2020 data, lung cancer ranks as the third most common new cancer case in Indonesia (8.8%), after breast cancer (16.6%) and cervical cancer (9.2%). Notably, lung cancer is the most common type of cancer among men, accounting for 14.1% of cases.(Bray Bsc et al., 2024) Anti-cancer treatments continue to develop in accordance with recommended Evidence-Based

Medicine Guidelines. However, issues remain regarding the benefits and side effects of cytotoxic chemotherapy. The 5-year survival rate for lung cancer has been reported to be around 15% for all stages, with patients with early-stage disease experiencing longer survival. Of all lung cancer types, non-small cell lung cancer (NSCLC) is the most common, accounting for 80% of all lung cancers. Currently, chemoradiotherapy is used as the first-line treatment for patients with NSCLC to aid rehabilitation and recovery. Unfortunately, it is also associated with numerous toxicities, such as nausea, vomiting, poor appetite, anorexia, anemia, and weight loss. Furthermore, this type of toxicity often leads to poor nutritional status and quality of life. Furthermore, it can lead to treatment-related morbidity and mortality. If left untreated, it can lead to cancer cachexia and death.(Bray Bsc et al., 2024).

This study is driven by an interest in evaluating the synergistic efficacy of *Channa striata (snakehead fish)* and *Curcumin* in minimizing the risk of malnutrition and optimizing patients' quality of life. The combination of these two supplements is projected to enhance therapeutic outcomes by integrating of the specific mechanisms of action of each active ingredient.(Musliha et al., 2024; Wan Nur Baitty Wan Mohd Tajuddin et al., 2019; Wu et al., 2021). Although nutritional supplementation has been widely investigated in cancer patients, evidence regarding the efficacy of combined *Channa striata* and Curcumin supplementation in patients with non-small cell lung cancer (NSCLC) undergoing chemotherapy remains limited. Previous studies have primarily focused on the anti-inflammatory, antioxidant, and nutritional properties of each component separately, while clinical data evaluating their synergistic effects on quality of life during chemotherapy are still scarce. Given the high prevalence of malnutrition, cachexia, and treatment-related deterioration in quality of life among NSCLC patients, further investigation is warranted to determine whether this combination may provide additional supportive benefits during cancer treatment. Therefore, this study aimed to evaluate the efficacy of combined *Channa striata* extract and Curcumin supplementation in health-related quality of life among patients with non-small cell lung cancer undergoing chemotherapy.

## METHOD

### Study Design and Setting

This study was an experimental clinical trial using a double-blind randomized controlled trial design with a pre-test and post-test control group approach. in the Pulmonology and Respiratory Medicine departments at Adam Malik Hospital and rof. Dr. Chairuddin P. Lubis Universitas Sumatera Utara Hospital, after obtaining ethical approval from the Institutional Ethics Committee of the Faculty of Medicine, Universitas Sumatera Utara with number: 542/KEPK/USU/2025.

### Study Subjects

This experimental study involved newly diagnosed patients with non–small cell lung carcinoma. Baseline assessments included the EORTC QLQ-C30 questionnaire to evaluate health-related quality of life. Patients in the intervention group received a combination of *Channa striata* and *Curcumin* extract (Striatamin ®, PT Mega Medica), while the control group received a placebo during two cycles of chemotherapy. Quality of life were reassessed after the intervention. This study evaluated the efficacy of Striatamin, a formulation containing 500 mg of *Channa striata* extract and 50 mg of *Curcumin* extract. Over a four-month period (July–November 2025), the treatment group received a dosage of two capsules three times daily, while the control group was administered a placebo.

The inclusion criteria in this study were patients with a newly diagnosed non-small cell lung carcinoma (NSCLC), actively consuming *Channa striata* extract and Curcumin extract supplements until the completion of the second cycle, aged between 40 and 60 years, with no history of hypersensitivity to freshwater fish, particularly *Channa striata*, no known allergy to Curcumin-containing products, and willingness to participate in the study by providing informed consent. The exclusion criteria included lung cancer patients with a performance status greater than 4 and patients who developed allergic reactions to the study supplements during the trial period.

**Data Collection**

Eligible patients were recruited consecutively from the outpatient and inpatient Pulmonology and Respiratory Medicine clinics at H. Adam Malik General Hospital and Prof. Dr. Chairuddin P. Lubis Universitas Sumatera Utara Hospital between July–November 2025. Following written informed consent, demographic and clinical characteristics were obtained from patients' medical records and direct interviews. Health-related quality of life was assessed using the validated European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire Core-30 (EORTC QLQ-C30). Participants were then randomly allocated into intervention and placebo groups using a computer-generated randomization sequence. Follow-up assessments of quality of life were performed after the first and second chemotherapy cycles. Data collection was conducted by trained research staff who were blinded to treatment allocation to minimize measurement bias.

**Statistical Analysis**

Data analysis was performed using parametric or non-parametric statistical tests according to data distribution. Within-group comparisons were conducted to evaluate differences before and after intervention, while between-group comparisons were used to assess differences between treatment and control groups. A p-value <0.05 was considered statistically significant.

## RESULT

### Characteristics

In this study, male subjects predominated in both the intervention (n=15; 93.8%) and control (n=13; 81.2%) groups. In contrast, females represented a smaller portion, with 1 subject (6.2%) in the intervention group and 3 (18.8%) in the control group. The median age was slightly higher in the intervention group (57 years) compared to the control group (55 years). This gender disparity is consistent with GLOBOCAN reports from 2020 and 2022, reflecting the higher incidence of lung cancer among men. This is primarily linked to smoking behaviors, as men often start smoking earlier in life, leading to a longer duration of exposure compared to women. The age distribution observed in this study is consistent with the findings of Lanwei Guo et al. (2024), which indicate that lung cancer incidence begins to rise significantly in individuals aged 40 and continues to increase through age 60.(Guo et al., 2024; Yan et al., 2022)

Table 1.
Clinical Characteristics of the Study Patients

| Demographic Characteristics | Intervention(n=16) | Control (n=16) |
|---|---|---|
| Gender, f (%) | | |
| Male | 15 (93.8) | 13 (81.2) |
| Female | 1 (6.2) | 3 (18.8) |
| Age, median (min-max), Years | 57 (40 – 60) | 55 (40 – 60) |
| Brinkman Index Score (%) | | |
| Passive smoker | 0 | 2 (12.5) |
| IB Heavy Smoker | 12 (75) | 12 (75) |
| IB Moderate Smoker | 4 (25) | 2 (12.5) |
| Types of Lung Cancer, n (%) | | |
| Large Cell Carcinoma | 1 (6.2) | 0 |
| Adenocarcinoma | 7 (43.8) | 9 (56.2) |
| Squamous Cell Carcinoma | 6 (37.5) | 7 (43.8) |
| Sarcomatoid Carcinoma | 1 (6.2) | 0 |
| Neuroendokrin Tumor | 1 (6.2) | 0 |
| Lung Cancer Stage n (%) | | |
| IIIA | 0 | 1 (6.2) |
| IIIB | 2 (12.5) | 3 (18.8) |
| IIIC | 5 (31.2) | 1 (6.2) |
| IVA | 7 (43.8) | 8 (50) |
| IVB | 2 (12.5) | 3 (18.8) |

**Quality of Life**

In this study, the evaluation of quality of life used the EORTC QLQ C30 questionnaire, which has three assessments, Functional Scale, Symptom Scale and General Health Scale (Cocks et al., 2023; Fayers et al., 2001)

**Differences in Quality of Life Functional Scale**

In general, quality of life scores in both groups were relatively balanced at the beginning of the study. There were no significant differences between the intervention and control groups in physical, role, emotional, cognitive, and social functioning at pre-intervention or post-cycle I measurements (all $p > 0.05$). However, in cycle II, there was a significant increase in social functioning in the intervention group (45.06 ± 25.65) compared to the control group (median 33.33; $p = 0.049$).A similar pattern was seen in changes in social functioning during the intervention period: the intervention group showed an average increase of 21.75 ± 21.86 points, while the control group experienced no change (median 0; $p = 0.029$). Although other domains, such as physical, emotional, and cognitive functioning, showed a trend of numerical improvement in the intervention group, these differences did not reach statistical significance ($p > 0.05$).

Table 3
Quality of Life Functional Scale

| Variabel | Intervention (n=16) | Control (n=16) | p |
|---|---|---|---|
| Physical Function (PF) | | | |
| Before Chemotherapy | 27 (0-87) | 30.5 (0-87) | 0.442[a] |
| Cycle I | 27 (0-87) | 30.17 (14-87) | 0.955[a] |
| Cycle II | 43.35 (20-87) | 42.79±20.17 | 0.506[a] |
| Changes (PF) | 22.63±17.14 | 12.83±21.78 | 0.168[b] |
| Role Function (RL) | | | |
| Before Chemotherapy | 0 (0-50) | 30.15±28.17 | 0.363[a] |
| Cycle I | 42 (0-67) | 29.34±21.57 | 0.221[a] |
| Cycle II | 47.02±22.08 | 39.79±19.15 | 0.428[b] |
| Changes (RL) | 14.52±17.07 | 8.35 (-50 - 50) | 0.670[a] |
| Emotional Function (EF) | | | |
| Before Chemotherapy | 46.38±21.06 | 34.98±20.29 | 0.130[b] |
| Cycle I | 42 (17-90) | 39.81±18.71 | 0.328[a] |
| Cycle II | 59.06±17.99 | 47.09±22.22 | 0.104[b] |
| Changes (EF) | 12.68±31.84 | 5 (-7.7-42) | 0.415[a] |
| Cognitive Function (CF) | | | |
| Before Chemotherapy | 43.88±19.82 | 42.38±27.14 | 0.860[b] |
| Cycle I | 50 (17-84) | 40.23±22.69 | 0.643[a] |
| Cycle II | 55.44±22.57 | 46.52±23.91 | 0.287[b] |
| Changes (CF) | 15 (-53 – 50) | 0 (-50-34) | 0.168[a] |
| Social Function (SF) | | | |
| Before Chemotherapy | 17 (0-67) | 26.98±26.31 | 0.969[a] |
| Cycle I | 34 (0-67) | 26.36±17.32 | 0.347[a] |
| Cycle II | 45.06±25.65 | 33.33 (0-84) | 0.049[a] |
| Changes (SF) | 21.75±21.86 | 0 (-66-50) | 0.029[a] |

**Differences in Quality of Life Symptom Scale**

Overall, there were no significant differences in symptom scores between the intervention and control groups at all three measurement time points. Pre-intervention, most patients in both groups reported moderately severe symptoms, particularly insomnia (100% in both groups), anorexia (median 100% in intervention vs. 83.34% in control; $p = 0.059$), and weakness (77.78% vs. 70.12%; $p = 0.304$). During the intervention period, there was a numerical decrease in most symptoms in both groups, reflecting a response to cancer treatment or supportive management. However, none of the symptom changes showed significant differences

Between the groups ($p > 0.05$ for all comparisons). For example, the decrease in nausea/vomiting symptoms in cycle II (8.34% in intervention vs. 16.67% in control) and improvement in shortness of breath (33.33% in both groups) were not statistically different.

Tabel 4.
Quality of Life Symptom Scale

| Variabel | | Intervention (n=16) | Control (n=16) | p |
|---|---|---|---|---|
| Fatigue (F) | | | | |
| Before Chemotherapy | 77.78 (33.33-100) | 70.12±26.51 | 0.304[a] | |
| Cycle I | 77.78 (33.33-100) | 65.93±21.66 | 0.318[a] | |
| Cycle II | 64.73±21.61 | 66.67 (11.1-88.89) | 0.734[a] | |
| Changes (F) | 11.11 (0-63.89) | 0 (-33.34-44.45) | 0.353[a] | |
| Nausea and Vomiting (NV) | | | | |
| Before Chemotherapy | 50 (0-83.33) | 42.71± 28.52 | 0.736[a] | |
| Cycle I | 50 (0-83.33) | 36.46±24.5 | 0.635[a] | |
| Cycle II | 8.34 (0-50) | 16.67 (0-83.3) | 0.507[a] | |
| Changes (NV) | 28.13±31.46 | 0 (-16.67-83.33) | 0.238[a] | |
| Pain (P) | | | | |
| Before Chemotherapy | 63.34 (50-100) | 66.67 (50-100) | 0.984[a] | |
| Cycle I | 58.34 (33.33-100) | 65.63±17.71 | 0.845[a] | |
| Cycle II | 47.92±26.44 | 50 (33.33-100) | 0,350[a] | |
| Changes (P) | 8.34 (-16.67-83.33) | 16.67 (0-50) | 0.769[a] | |
| Dyspnoea (D) | | | | |
| Before Chemotherapy | 66.67 (0-100) | 66.67 (33.33-100) | 0.184[a] | |
| Cycle I | 50 (0-100) | 66.67 (33.33-66.67) | 0.513[a] | |
| Cycle II | 33.33 (0-66.67) | 33.33 (0-66.67) | 0.797[a] | |
| Changes (D) | | 18.75±38.43 | 33.34 (0-66.67) | 0.157[a] |
| Insomnia (I) | | | | |
| Before Chemotherapy | | 100 (66.67-100) | 100 (66.67-100) | 0.699[a] |
| Cycle I | | 66.67 (33.33-100) | 66.67 (66.67-100) | 0.897[a] |
| Cycle II | | 66.67 (0-100) | 66.67 (33.33-100) | 0.561[a] |
| Changes (I) | | 33.33 (0-66.67) | 33.33 (0-66.67) | 0.644[a] |
| Appetite Loss (AL) | | | | |
| Before Chemotherapy | | 100 (66.67-100) | 83.34 (33.33-100) | 0.059[a] |
| Cycle I | | 66.67 (33.33-100) | 66.67 (33.33-100) | 0.328[a] |
| Cycle II | | 50 (0-100) | 66.67 (33.33-100) | 0.439[a] |
| Changes (AL) | | 33.34 (0-100) | 33.33 (0-66.67) | 0.134[a] |
| Constipation (C) | | | | |
| Before Chemotherapy | | 0 (0-33.33) | 0 (0-100) | 0.896[a] |
| Cycle I | | 0 | 0 (0-100) | 0.151[a] |
| Cycle II | | 0 | 0 | 1.000[a] |
| Changes (C) | | 0 (0-33.33) | 0 (0-100) | 0.896[a] |
| Diarrhea (D) | | | | |
| Before Chemotherapy | | 0 (0-33.33) | 0 (0-33.33) | 1.000[a] |
| Cycle I | | 0 | 0 | 1.000[a] |
| Cycle II | | 0 | 0 | 1.000[a] |
| Changes (D) | | 0 (0-33.33) | 0 (0-33.33) | 1.000[a] |
| Financial Difficulties | | | | |
| Before Chemotherapy | | 66.7 (33.33-100) | 66.7 (33.33-66.7) | 0.189[a] |
| Cycle I | | 66.7 (33.33-100) | 66.7 | 0.551[a] |
| Cycle II | | 66.7 (33.33-100) | 66.7 (33.33-66.7) | 0.576[a] |
| Changes | 0 (0-33.33) | 0 (-33.37-33.37) | 0.342[a] | |

**Differences in Quality of Life General Health Scale**

At baseline, general health (GH) scores were relatively comparable between the intervention group (median 41.6; range 25–50) and the control group (median 35.82; range 33.33–50), with no significant difference (p = 0.388). Similarly, after cycle I, both groups showed nearly identical GH scores (median 41.6 in both groups; p = 0.160). However, in cycle II, there was a significant increase in GH scores in the intervention group (52.58 ± 8.47) compared to the control group (median 41.6; range 33.33–50), with p = 0.001. This difference was also evident in the change in GH scores during the intervention period: the intervention group experienced a mean increase of 12.49 ± 12.57 points, while the control group only showed a median increase of 8.27 points (range –8.4 to 16.67), with a statistically significant difference (p = 0.041).

Table 5
Quality of Life General Health Scale

| Variabel | Intervention (n=16) | Control (n=16) | p |
|---|---|---|---|
| General Health (GH) | | | |
| Before Chemotherapy | 41.6 (25-50) | 35.82 (33.33-50) | 0.388 |
| Cycle I | 41.6 (33.33-50) | 41.6 (33.33-50) | 0.160 |
| Cycle II | 52.58 ± 8.47 | 41.6 (33.33-50) | 0.001 |
| Changes (GH) | 12.49±12.57 | 8.27 (-8.4-16.67) | 0.041 |

## DISCUSSION

### Demographic Characteristics

These findings align with GLOBOCAN 2020 data, which identifies adenocarcinoma as the most prevalent lung cancer subtype globally, closely linked to smoking-related risk factors. Exposure to carcinogens in the pulmonary epithelium induces genetic damage, triggering driver mutations in key genes such as *EGFR, KRAS*, or *ALK.* These mutations lead to the constitutive activation of cell proliferation and survival pathways, fostering the progression of pre-cancerous lesions into invasive adenocarcinoma with distant metastatic potential (Bray Bsc et al., 2024; Guo et al., 2024; Jianrong Zhang, 2022; Sung et al., 2021; Tian et al., 2024; Yan et al., 2022). In this study, most patients were diagnosed at advanced stages (III and IV). This late-stage detection is primarily attributed to symptoms only manifesting once the tumor has enlarged, inadequate healthcare access, limited early screening, and the rapid progression from clinical presentation to diagnosis (Guo et al., 2024; Zhang et al., 2024)

### Quality of Life

The improvement in social functioning observed after the second chemotherapy cycle is clinically meaningful because social functioning is an important component of health-related quality of life in patients with advanced lung cancer. Social functioning reflects the patient's ability to maintain interpersonal relationships, participate in family activities, and engage in social roles despite the burden of cancer and its treatment. Improvements in this domain may indicate better physical condition, reduced symptom burden, and greater psychological resilience (Ding et al., 2024; Ninfa et al., 2023). Several recent studies have demonstrated a strong relationship between nutritional status and quality of life in cancer patients. Polański et al. (2021) reported that patients with adequate nutritional status exhibited significantly better scores across all EORTC QLQ-C30 functional domains, including social functioning, whereas malnourished patients experienced greater symptom severity and poorer overall quality of life. Similarly, Cardellini et al. (2024) found that systematic nutritional counseling and nutritional support during cancer treatment improved quality-of-life outcomes, preserved body composition, and enhanced treatment adherence. These findings suggest that nutritional optimization may positively influence psychosocial adaptation during cancer therapy (Cardellini et al., 2024; Polański et al., 2021).

The observed improvement in global health status in the intervention group further supports the role of nutritional supplementation as an adjunctive supportive therapy in NSCLC. Global health status reflects patients' overall perception of their health and well-being and is strongly influenced by nutritional condition, physical functioning, fatigue, and symptom burden. Previous studies have shown that malnutrition is independently associated with poorer quality of life, lower treatment response, and reduced survival among lung cancer patients. (Miramontes-González et al., 2025; Polański et al., 2021).

Although improvements in symptom scales did not reach statistical significance, the absence of symptom deterioration in the intervention group remains clinically relevant. Chemotherapy-induced symptoms such as anorexia, fatigue, nausea, and weakness often contribute to progressive nutritional decline and reduced treatment adherence. Nutritional interventions may not immediately eliminate these symptoms but may mitigate their cumulative impact by improving energy intake, maintaining

body weight, and supporting immune function. This finding is supported by recent evidence indicating that early nutritional intervention can reduce nutritional deterioration and improve patient-reported outcomes during cancer treatment (Cardellini et al., 2024; Krzywon et al., 2023).

These findings indicate that the administration of a combination of *Channa striata* extract and Curcumin during two cycles of chemotherapy has a significant positive effect, particularly on the social functioning domain among patients with lung cancer. This improvement may reflect enhanced psychosocial well-being resulting from improved nutritional status and reduced treatment-related burden. Similar findings have been reported by Ding et al. (2024), who demonstrated that greater perceived social support was significantly associated with better social functioning and overall quality of life among lung cancer patients. Furthermore, Polański et al. (2022) found that maintaining adequate nutritional status during chemotherapy was positively associated with social functioning and global health scores in patients with advanced lung cancer. Likewise, Cardellini et al. (2024) reported that nutritional intervention during systemic anticancer therapy significantly improved quality-of-life outcomes, including social and emotional well-being, suggesting that nutritional optimization may contribute to better psychosocial adaptation during cancer treatment.

In the intervention group, social function scores showed a significant increase following the second cycle. This improvement aligns with the findings of Ding et al. (2024), which suggest that environmental and family support foster a positive mindset. Such psychological resilience directly correlates with enhanced quality of life, particularly regarding the patient's social functioning during illness management. (Ding et al., 2024) Similarly, gastrointestinal symptoms such as constipation and diarrhea were reported almost exclusively by patients at all measurement time points. Although there was a trend of clinical improvement, particularly a decrease in anorexia and weakness in the intervention group, these findings did not significance. reach statistical

Overall, the intervention with *Channa striata* extract and *Curcumin* did not show a significant effect in reducing specific clinical symptoms compared to the control group during two cycles of chemotherapy, although it did not worsen existing symptoms. Symptom scores showed no significant increase in either the intervention or control groups, maintaining a stable trend particularly in the intervention arm. These findings are consistent with the research of Hechtner et al. (2019), which suggests that symptom-related quality of life tends to be persistent in lung cancer patients. In both active patients and survivors undergoing chemotherapy, significant long-term clinical manifestations are often linked to permanent pulmonary parenchymal damage. This condition is multifactorial, stemming from post-surgical anatomical deficits, pulmonary fibrosis induced by disease pathology or cytotoxic effects, and ongoing systemic inflammation. Furthermore, a low performance status frequently leads to treatment delays, which ultimately exacerbates clinical decline and diminishes quality of life on the symptom scale. (Hechtner et al., 2019)

These findings indicate that the combined administration of *Channa striata* extract and *Curcumin* during two cycles of chemotherapy significantly improved patients' perceptions of their general health, reflecting the holistic benefits of this nutritional intervention in supporting the quality of life of lung cancer patients during treatment. Overall, this study aligns with the findings of *Bargetzi et al.* (2021) in *Annals of Oncology*, which demonstrate that lung cancer patients with adequate nutrition exhibit superior quality of life and lower mortality rates compared to control groups. These results are further supported by *Polański and Mazur* (2021) in *Cancer Management and Research*, highlighting a significant positive correlation between nutritional status and Quality of Life (QoL). Optimal nutrition strengthens immune mechanisms and mitigates the risk of secondary infections and systemic inflammatory responses. Consequently, this study advocates for nutritional interventions, such as high-protein diets or snakehead fish extract supplementation, as integral components of palliative care. Additionally, periodic nutritional screening during clinical visits is highly recommended for the early detection of malnutrition risks.(Polański et al., 2021)

## CONCLUSION

Combined Channa striata and Curcumin supplementation administered during two cycles of chemotherapy significantly improved social functioning and global health status in patients with NSCLC. These findings suggest that the combination may serve as a supportive nutritional intervention to enhance selected aspects of health-related quality of life during chemotherapy. Further studies with larger sample sizes and longer follow-up periods are warranted to confirm these findings.

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