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The Relationship Between Family Support and Chemotherapy Adherence in Colorectal Cancer Patients at The Digestive Surgery Clinic of Dr. Saiful Anwar General Hospital, East Java Province

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Abstract

Colorectal cancer is a malignancy with high morbidity and mortality rates, requiring chemotherapy as a major treatment modality. The effectiveness of chemotherapy is strongly influenced by patient adherence, which remains a major challenge due to physical, psychological, and social burdens. This study aimed to determine the relationship between family support and chemotherapy adherence among colorectal cancer patients. This study employed a quantitative analytic correlational design with a cross-sectional approach. The number of samples was 56 respondents. Data were collected using validated questionnaires and data analysis was performed using the Chi-Square test. The findings showed that most respondents received good family support (55.4%) and were adherent to chemotherapy (71.4%). The Chi-Square test revealed a value of $\chi^2 = 21.897$ with a significance of $p < 0.001$, indicating a significant relationship between family support and chemotherapy adherence in colorectal cancer patients. Family support plays an essential role in improving adherence of colorectal cancer patients undergoing chemotherapy at the digestive surgery clinic of Dr. Saiful Anwar General Hospital. The better the family support, the higher the adherence level. The findings demonstrate that family support is a significant determinant of chemotherapy adherence among colorectal cancer patients. Adequate family support may help patients overcome physical discomfort, psychological distress, and treatment-related challenges, thereby promoting consistent adherence to chemotherapy schedules. These results underscore the need for healthcare professionals to integrate family involvement into patient care strategies, as strengthening family support systems may represent an effective approach to improving adherence and enhancing treatment success in colorectal cancer management.

INTRODUCTION

Colorectal cancer represents a malignant neoplasm originating from the epithelial lining of the large intestine, encompassing both the colon and rectum. This disease has emerged as one of the most significant oncological challenges globally, not only due to its high incidence but also because of its substantial mortality burden. According to the Global Cancer Observatory, colorectal cancer ranked as the third most commonly diagnosed cancer and the second leading cause of cancer-related mortality worldwide in 2020, accounting for 915,880 deaths and representing 9.4% of all cancer fatalities (Sung et al., 2021). Projections from the World Health Organization indicate a dramatic escalation in the coming decades, with new cases expected to reach 3.2 million a 63% increase while mortality is anticipated to surge by approximately 80%, approaching 1.6 million deaths annually by 2040 (WHO, 2023). These figures underscore the urgent need for comprehensive strategies targeting not only early detection and treatment, but also the optimization of therapeutic adherence to improve patient survival outcomes.

In the Indonesian context, colorectal cancer ranks as the fourth most prevalent malignancy, with approximately 35,000 new cases diagnosed annually. Epidemiological data from Globocan 2020, in alignment with the Indonesian Ministry of Health, reveal a mortality rate of 6.7 per 100,000 population. The disease disproportionately affects men, with 21,903 recorded cases, placing it second among male-specific cancers in Indonesia. Nevertheless, women remain significantly affected, with 13,773 cases

representing 6.3% of total female cancer incidence (Ferlay et al., 2021). At the regional level, the Malang City Health Office documented a notable increase in cancer diagnoses in January 2025, reporting 132 new patients, among whom 6 were diagnosed with colorectal cancer (Malang, 2025). This upward trend at both national and regional levels highlights the growing public health challenge posed by this malignancy.

Surgical resection remains a primary treatment modality for colorectal cancer; however, recurrence rates remain alarmingly high. A study of 158 post-surgical colorectal cancer patients demonstrated that 71.2% experienced disease recurrence, predominantly within the first two years following the operation. This high recurrence rate reinforces the critical role of adjuvant therapies, including chemotherapy and radiotherapy, in disease management (Sari et al., 2019). Chemotherapy may be administered preoperatively, postoperatively, concurrently with radiotherapy, or as palliative treatment, each serving to reduce tumor burden, suppress metastatic progression, and extend survival. The significance of treatment continuity is further evidenced by findings indicating that patients who maintain adherence to chemotherapy report a markedly improved quality of life, with 81.8% classified as having good quality of life and an associated p-value of 0.017 (Dewi, 2020). Conversely, incomplete chemotherapy regimens defined as fewer than 12 treatment cycles have been associated with a 3.8-fold increase in mortality risk compared to those who complete the full regimen (Yulistiani et al., 2024).

Despite the demonstrated importance of chemotherapy adherence, sustaining consistent treatment compliance among colorectal cancer patients remains a substantial clinical challenge. Adherence in this context refers to the patient's consistent participation in all scheduled therapy sessions, strict adherence to prescribed protocols, and uninterrupted completion of the treatment course (Rachmah, 2021). Multiple barriers impede adherence, including physical side effects, psychological distress, financial constraints, and inadequate social support. Among these determinants, family support has been identified as a particularly influential factor. Family support encompasses a range of functional contributions, including emotional encouragement, instrumental assistance such as accompaniment to treatment sessions and stoma care, informational guidance regarding the disease and its management, and appraisal support in the form of recognition and affirmation. Collectively, these forms of support enhance patient comfort, motivation, and capacity to persevere through demanding treatment regimens (Apollo & Cahyadi, 2018). Research by (Rachmah, 2021) has established a significant association between family support and treatment adherence in cancer patients, while (Hariyadi, 2019) further emphasized that families serve as primary motivators, helping patients maintain psychological resilience and commitment to professional medical recommendations.

A preliminary investigation conducted in March 2025 at the Digestive Surgery Clinic of Dr. Saiful Anwar General Hospital, East Java Province, revealed that 4 out of 7 colorectal cancer patients undergoing chemotherapy approximately 60% had failed to comply with their prescribed chemotherapy schedules. Contributing factors included inadequate family accompaniment, expired insurance referral documents, limited access to transportation, and financial difficulties associated with ongoing treatment and stoma management costs. These findings highlight a critical and underexplored intersection between social determinants and therapeutic outcomes in colorectal cancer care. While a growing body of literature has examined family support as a determinant of treatment adherence across various chronic conditions, studies specifically investigating its role in chemotherapy adherence among colorectal cancer patients remain scarce, particularly within the Indonesian healthcare setting. This represents a significant knowledge gap, given that colorectal cancer patients face unique physiological and psychosocial challenges including stoma management, prolonged treatment duration, and high recurrence anxiety that distinguish their support needs from those of patients with other malignancies.

The present study therefore addresses this gap by specifically examining the relationship between family support and chemotherapy adherence in colorectal cancer patients at a tertiary referral hospital in East Java Province. The novelty of this research lies in its focus on a clinically distinct and understudied population within the Indonesian context, offering empirical evidence that extends beyond existing studies predominantly focused on breast cancer or general oncology populations. The findings are expected to contribute meaningfully to the advancement of oncological nursing practice by providing an evidence base for the integration of structured family support interventions into chemotherapy care protocols. Furthermore, this study carries important implications for hospital policy, supporting the development of family-centered care programs, patient-family counseling services, and

community-based support networks designed to strengthen adherence and improve treatment success in colorectal cancer management. Based on the foregoing background, this study aimed to analyze the relationship between family support and chemotherapy adherence among colorectal cancer patients at the Digestive Surgery Clinic of Dr. Saiful Anwar General Hospital, East Java Province.

RESEACRH METHODS

This study employed a quantitative research design with a correlational analytic approach utilizing a cross-sectional method. The study was conducted at the Digestive Surgery Clinic of Dr. Saiful Anwar General Hospital, East Java Province, with data collection carried out in June 2025. The target population comprised all colorectal cancer patients undergoing infusion chemotherapy from January to March 2025, totaling 65 individuals. Although the relatively small population size would have permitted a total sampling approach, purposive sampling was deliberately selected to ensure that only respondents meeting specific eligibility criteria were included namely, patients actively undergoing infusion chemotherapy, cognitively capable of completing self-report questionnaires, and willing to participate voluntarily. The sample size was calculated using the Slovin formula with a 5% margin of error, yielding 56 respondents. This approach ensured both methodological rigor and the quality of data obtained.

This study examined two primary variables: family support as the independent variable and chemotherapy adherence as the dependent variable. Family support was measured using a structured questionnaire adapted from Nursalam's theoretical framework, comprising 28 statements rated on a four-point Likert scale (1 = never, 2 = rarely, 3 = often, 4 = always). Scores were subsequently categorized into three levels: good (76–100%), moderate (56–75%), and poor (≤55%), thereby converting continuous Likert-derived scores into categorical data suitable for Chi-Square analysis (Nursalam, 2018). Chemotherapy adherence was assessed using an 11-item questionnaire, with responses similarly categorized as adherent or non-adherent based on established cut-off scores. Prior to data collection, both instruments underwent validity and reliability testing. Validity was assessed using Pearson product-moment correlation, with items demonstrating r-values exceeding the r-table threshold ($r > 0.30$) considered valid. Reliability was evaluated using Cronbach's alpha coefficient, with a value of ≥ 0.70 indicating acceptable internal consistency (Muljono, 2002). All items in both questionnaires met the established validity and reliability criteria, confirming their suitability for use in this study.

Data analysis was conducted in two sequential stages. Univariate analysis was applied to describe the frequency distribution and percentage of each variable. Bivariate analysis was subsequently performed using the Pearson Chi-Square test to evaluate the association between family support and chemotherapy adherence. Prior to conducting the Chi-Square test, its underlying assumptions were verified: all expected cell frequencies exceeded 5, and no cells contained zero values, confirming that the statistical assumptions were fully satisfied (Auliya & Andriani, 2020). Additionally, both variables were confirmed to be in categorical form, consistent with the requirements of the Chi-Square test. A significance threshold of $\alpha = 0.05$ was applied, whereby a p-value below this threshold indicated a statistically significant association between the two variables.

It is important to acknowledge that, given the cross-sectional design of this study, the findings are interpreted as indicating a statistical association between family support and chemotherapy adherence, rather than a causal relationship. Furthermore, several potential confounding variables including disease stage, employment status, insurance coverage, and duration of chemotherapy were identified and described at the univariate level to provide contextual understanding of their potential influence on adherence behavior.

RESULT

This study was conducted in June 2025 at the Digestive Surgery Clinic of Dr. Saiful Anwar General Hospital, East Java Province, involving 56 respondents diagnosed with colorectal cancer who were actively undergoing chemotherapy. Demographic characterization of the sample revealed a diverse distribution across several sociodemographic categories. The largest age group was 56–65 years, representing 42.9% of respondents, suggesting that the majority of patients were in the late

middle-age to early elderly category. Female respondents constituted the majority at 55.4% (n = 31). In terms of educational background, 35.7% had completed senior high school or vocational education, while occupational distribution indicated that 33.9% were self-employed. Regarding clinical characteristics, all respondents (100%) had been undergoing chemotherapy for less than one year and were enrolled under the National Health Insurance (JKN) scheme. The majority were diagnosed at stage IV, accounting for 51.8% of the sample, indicating that most patients presented at an advanced stage of disease at the time of data collection.

With respect to family support, findings demonstrated that the majority of respondents received good family support, comprising 31 individuals (55.4%). Moderate family support was reported by 18 respondents (32.1%), while a minority of 7 respondents (12.5%) received poor family support. Analysis across the four domains of family support revealed that emotional support was the most prevalent form received, with 49 respondents (87%) reporting adequate emotional support from their families. This was followed by informational support (55.4% good), appraisal support (55.4% good), and instrumental support (50.0% good), collectively reflecting a generally supportive family environment among the study population.

Regarding chemotherapy adherence, the distribution showed that the majority of respondents were classified as adherent, totaling 40 individuals (71.4%), while the remaining 16 respondents (28.6%) were categorized as non-adherent. Cross-tabulation between family support and adherence revealed a discernible pattern: nearly all respondents with good family support were adherent to chemotherapy, totaling 30 individuals (96.8%). Conversely, the majority of respondents with moderate family support were non-adherent, comprising 11 individuals (61.1%). Among those with poor family support, a comparable tendency toward non-adherence was also observed, further reinforcing the directional relationship between the two variables.

Prior to conducting inferential analysis, the assumptions underlying the Pearson Chi-Square test were systematically verified to ensure the validity of the statistical procedure. Specifically, all expected cell frequencies were confirmed to exceed the minimum threshold of 5.0, and no cells contained zero expected counts. These conditions satisfied the fundamental requirements for the appropriate application of the Chi-Square test, as stipulated by standard statistical guidelines. Both variables family support and chemotherapy adherence were confirmed to be in categorical form, further justifying the selection of this analytical method.

Bivariate analysis using the Pearson Chi-Square test yielded a test statistic of $\chi^2 = 21.897$ with a corresponding significance level of $p < 0.001$. Given that the p-value falls substantially below the predetermined significance threshold of $\alpha = 0.05$, the null hypothesis (H_0) which posited no association between family support and chemotherapy adherence was rejected. These results statistically confirm a significant association between family support and chemotherapy adherence among colorectal cancer patients at the Digestive Surgery Clinic of Dr. Saiful Anwar General Hospital, East Java Province. It is emphasized that, consistent with the cross-sectional design of this study, these findings reflect a statistically significant association between the two variables and should not be interpreted as evidence of a causal relationship.

DISCUSSION

Family Support in Colorectal Cancer Patients Undergoing Chemotherapy at Dr. Saiful Anwar General Hospital, East Java Province

The findings of this study revealed that 31 respondents (55.4%) received good family support, 18 respondents (32.1%) received moderate family support, and 7 respondents (12.5%) received poor family support during chemotherapy. These results indicate that the predominant experience among patients was one of adequate familial involvement throughout the treatment process. Family support plays a fundamental role in facilitating long-term treatment engagement, encompassing practical functions such as schedule reminders, motivational reinforcement, and financial assistance all of which are particularly critical in the context of chronic diseases requiring sustained therapeutic commitment. Among the internal factors shaping family support, age emerged as a notable determinant. Nearly half of respondents fell within the 46–55 year (37.5%) and 56–65 year (42.9%) age brackets. According to Bomar (2019), advancing age is associated with heightened responsiveness to health-related changes

and an increased motivation to recover, which in turn facilitates greater receptivity to family-based assistance.

Across the four measured dimensions of family support, emotional support was identified as the most prevalent, with 49 respondents (87%) reporting its presence. Emotional support, which encompasses expressions of trust, appreciation, attentiveness, and empathetic listening, constitutes a foundational element of psychosocial care in oncology settings (Apollo & Cahyadi, 2018). Appraisal support was reported as good by 55.4% of respondents, reflecting adequate provision of recognition and positive reinforcement during treatment. Instrumental support was rated as good by 50% of respondents, consistent with Friedman's (2010) conceptualization of tangible assistance, which includes physical accompaniment to treatment sessions and assistance with daily needs. Informational support was similarly rated as good by 55.4% of respondents, demonstrated through family members' active engagement in educating patients about their diagnosis, chemotherapy protocols, and anticipated side effects.

In comparison with previous studies, these findings are consistent with (Rachmah, 2021), who reported that cancer patients receiving strong family support demonstrated significantly better treatment engagement. (Suyanto & Arumdari, 2016) found that family support was predominantly good among chemotherapy patients, attributable to heightened family awareness regarding the severity of cancer and the necessity of treatment continuity. However, a contrasting finding was reported by (Gulo, 2018), whose study of chemotherapy patients at Santa Elisabeth Hospital Medan found a higher proportion of patients receiving moderate rather than good family support, potentially reflecting differences in socioeconomic conditions, geographic accessibility, and cultural attitudes toward illness across different regional contexts. These comparative insights reinforce the contextual nature of family support and underscore the importance of tailoring support interventions to the specific social and cultural environment of the patient population. Overall, the dominant presence of emotional support in this study suggests that while families are emotionally engaged, instrumental and informational dimensions of support may benefit from more deliberate reinforcement, particularly in resource-constrained settings where accompaniment and health literacy remain variable.

Chemotherapy Adherence in Colorectal Cancer Patients at Dr. Saiful Anwar General Hospital, East Java Province

This study demonstrated that 71.4% of colorectal cancer patients were adherent to their prescribed chemotherapy schedules, while 28.6% were classified as non-adherent. The occupational distribution of respondents revealed that the majority were self-employed (33.9%), followed by laborers, housewives, and farmers (each 21.4%), with only one civil servant (1.8%). This pattern reflects a predominantly informal workforce with characteristically unstable income streams, which may present barriers to consistent healthcare access. Nevertheless, the inherent scheduling flexibility of self-employment may simultaneously serve as a facilitating factor for chemotherapy adherence, as patients can organize their professional commitments around treatment appointments. This dual dynamic is consistent with Niven's (2012) assertion that occupational status significantly mediates both access to and continuity of long-term medical treatment.

From a clinical perspective, respondents were distributed between stage III (48.2%) and stage IV (51.8%) disease, and all had been undergoing chemotherapy for less than one year. The predominance of advanced-stage patients is clinically significant, as the Health Belief Model (HBM) posits that perceived disease severity functions as a motivational driver for health-protective behaviors (Glanz, 2015). Patients at advanced stages tend to possess a more acute awareness of disease consequences and the risks associated with treatment discontinuation, which may explain the relatively high adherence rate observed in this sample. Furthermore, in advanced-stage cancer, patients typically experience heightened physical and psychological dependency, which amplifies the functional role of family support in sustaining adherence through practical and emotional means.

When compared with existing literature, the adherence rate of 71.4% observed in this study is broadly consistent with findings reported by (Dewi, 2020), whose study documented a similar pattern of good quality of life among adherent chemotherapy patients, suggesting that adherence is associated with favorable health outcomes. In contrast, (Hia, 2019) reported lower adherence rates in a comparable population, attributing non-adherence primarily to diminished self-efficacy and insufficient

psychosocial support. The comparatively higher adherence rate in the present study may be partially attributable to universal JKN insurance coverage among all respondents, which effectively eliminated financial barriers to treatment access a factor not uniformly present across comparative studies. These differences highlight the multifactorial nature of chemotherapy adherence and the importance of systemic healthcare support in sustaining treatment continuity.

The Relationship Between Family Support and Chemotherapy Adherence in Colorectal Cancer Patients at Dr. Saiful Anwar General Hospital, East Java Province

The Pearson Chi-Square test yielded a value of $\chi^2 = 21.897$ with $p < 0.001$, confirming a statistically significant association between family support and chemotherapy adherence. These findings are theoretically grounded in Nursalam's framework (2018), which posits that family support spanning emotional, instrumental, and informational dimensions functions to reduce treatment barriers and strengthen patient motivation to persist through demanding therapeutic regimens. The results further align with the Health Belief Model, which identifies external cues and social influences as pivotal modifiers of health behavior, suggesting that family support reduces perceived psychological barriers while enhancing the perceived benefits of continued treatment (Glanz, 2015).

In direct comparison with prior research, these findings closely mirror those of (Rachmah, 2021), who established a significant relationship between family support and treatment adherence among breast cancer patients in Gresik, corroborating the generalizability of this association across cancer types. Similarly, Hariyadi (2019) reported a significant relationship between family support and medication adherence in elderly hypertension patients, indicating that the supportive role of family extends across diverse chronic disease contexts. A point of differentiation, however, lies in the specific population examined: while most comparable studies have focused on breast cancer or mixed oncology populations, the present study isolates colorectal cancer patients a group with distinct stoma-related care needs, prolonged treatment burdens, and unique psychosocial vulnerabilities.

This specificity strengthens the contextual relevance of the findings and contributes novel empirical evidence to an underrepresented area of oncological nursing research. These results collectively affirm that family involvement is not merely a supplementary element of care but a clinically significant determinant of chemotherapy adherence. Healthcare institutions should therefore systematically integrate family-centered strategies into oncological care, including structured family counseling sessions, caregiver education programs, and institutional support groups designed to reinforce family capacity across all four support dimensions.

Limitations of the Study

Despite its contributions, this study is subject to several limitations that warrant acknowledgment. First, the cross-sectional design employed in this investigation permits the identification of statistical associations but does not allow for causal inferences between family support and chemotherapy adherence. Longitudinal study designs would be necessary to establish directionality and temporal relationships between these variables. Second, the study was conducted at a single tertiary referral hospital in East Java Province, which may limit the generalizability of findings to colorectal cancer patients in other healthcare settings, regions, or countries with different socioeconomic and cultural profiles. Third, both family support and chemotherapy adherence were assessed through self-reported questionnaires, which carry an inherent risk of recall bias and social desirability bias, potentially leading to overestimation of both constructs. Fourth, while several potential confounding variables including disease stage, employment status, insurance coverage, and treatment duration were described at the univariate level, they were not formally controlled in the bivariate analysis, which may have influenced the observed association. Future studies should consider multivariate analytical approaches to account for these confounders and provide a more nuanced understanding of the determinants of chemotherapy adherence in this population.

CONCLUSION

Based on a study conducted on 56 respondents with colorectal cancer at the Digestive Surgery Clinic of Dr. Saiful Anwar General Hospital, East Java Province, it can be concluded that colorectal cancer patients undergoing chemotherapy at the clinic generally have good family support. These

patients are also categorized as adherent to chemotherapy. The results of the Pearson Chi-Square test on the two variables indicate a significant relationship between family support and chemotherapy adherence

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