

Trail of acceptance: the experiences and perspectives of chemotherapy adherence among adolescents with cancer

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Abstract

Chemotherapy adherence is crucial for adolescents with cancer. However, their lived experiences and perspectives on adherence are understudied. Understanding these experiences is vital to improving support systems and addressing emotional and psychological challenges during treatment. This study aimed to explore the lived experiences and perspectives of adolescents undergoing chemotherapy. This study employed a descriptive phenomenology

approach guided by Colaizzi's method. Purposive sampling was used to select adolescents undergoing chemotherapy. Data were collected through individual semi-structured interviews from 2022 to 2023 and analyzed using Colaizzi's method, supported by NVivo 10 for data management. Adolescents had varying perceptions of their cancer diagnosis, often experiencing emotional distress, which influenced their chemotherapy adherence. The physical and emotional side effects of treatment were significant barriers to adherence. Support from healthcare providers, family, and peers played a crucial role in helping adolescents manage their illness and remain committed to treatment. Mental health management emerged as a key factor in improving adherence. Healthcare providers must adopt a patient-centered approach that addresses emotional distress, practical challenges, and the critical role of support systems in enhancing adolescents' chemotherapy adherence.

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Key words: adolescent; chemotherapy; neoplasms; mental health; treatment adherence.

Contributions: SH, NN, DM, conception and design of the study, acquisition of data, analysis and interpretation of data; SH, NN, DM, SIT, drafting the manuscript, critical revision for important intellectual content. All the authors have read and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

Conflict of interest: the authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethics approval and consent to participate: the research was approved by the Clinical Researchers Ethical Committee of Dr Soetomo Hospital based on ethical certificate (approval No. 0289/KEPK/X/2021). During the research, the researcher focused on the ethical principles of autonomy, beneficence, justice, and non-maleficence.

Patient consent for publication: written informed consent was obtained from anonymized patients for publication in this article.

Availability of data and materials: All data generated or analyzed during this study are included in this published article.

Acknowledgments: the authors would like to thank the cancer survivors and their parents who participated in the study, the Oncology Department, and the Indonesia Oncology Nurses Association.

Received: 18 October 2024.

Accepted: 8 January 2025.

Early access: 5 March 2025.

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Healthcare in Low-resource Settings 2025; 13(s1):13265

doi:10.4081/hls.2025.23265

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Introduction

Adolescents with cancer often undergo intensive treatments such as chemotherapy, radiation therapy, and stem cell transplantation, which can last two to three years.^{1,2} While these treatments are critical for improving survival rates, they impose substantial physical, emotional, and social burdens. Chemotherapy, in particular, is associated with side effects such as fatigue, anaemia, hair loss, and cognitive difficulties, significantly impacting adolescents' quality of life during this pivotal stage of development.³⁻⁶ These challenges can lead to long-term psychological consequences, affecting emotional resilience and self-identity.^{7,8}

Cancer treatment also disrupts adolescents' daily lives and relationships. The invasive and prolonged nature of therapies results in physical discomfort, separation from family and friends, and missed opportunities for education, play, or work.^{9,10} Adolescents often struggle to adjust to the constant cycle of hospitalizations, check-ups, and treatments. These challenges are amplified by the need for emotional and mental stability to navigate the distress of a cancer diagnosis and the physical pain of treatment. During the COVID-19 pandemic, additional stressors emerged as pediatric oncology departments adapted protocols to mitigate infection risks while maintaining effective cancer care.^{11,12}

Coping with these challenges requires emotional resilience and robust support systems. Support from healthcare providers, family, and peers plays a crucial role in helping adolescents adapt to their new realities.^{13,14} Healthcare professionals, in particular, are vital in guiding adolescents through the distressing aspects of treatment and fostering adherence to prescribed therapies.^{15,16} Despite the well-documented benefits of adjuvant chemotherapy in reducing cancer recurrence and mortality, adherence remains a significant issue among adolescents.¹⁷ Factors such as the side effects of treatment, psychological distress, and inadequate sup-

port systems often hinder consistent adherence. While many studies have explored adherence in adult populations, research focusing on adolescents' perspectives is limited. Existing studies often emphasize specific treatments or conditions rather than examining adherence holistically. This gap leaves healthcare providers with an incomplete understanding of the factors influencing adherence among adolescents at a unique developmental stage that necessitates tailored interventions.^{18,19} This study seeks to address this gap by exploring the lived experiences and perspectives of adolescents undergoing chemotherapy. By understanding the barriers and facilitators to adherence, this research aims to inform strategies that support adolescents in managing their treatment effectively and improving overall outcomes.²⁰

Materials and Methods

Research design

This study adopted a descriptive phenomenology design to figure out how adolescents with cancer experience life. It focuses on capturing the essence of lived experiences, emphasizing the detailed aspects of events or situations. Given the personal and often complex nature of adolescents' experiences with chemotherapy adherence, this approach is particularly appropriate. By delving deeply into their experiences, descriptive phenomenology allows for a rich exploration of the factors that influence adherence during cancer treatment, shedding light on both the challenges and motivations adolescents face throughout their treatment journey. This manuscript adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist to ensure transparency and rigor in the reporting of qualitative research.²¹

Study participants

Participants were recruited using purposive sampling from the pediatric hematology-oncology clinic at Dr. Soetomo Hospital, a major referral hospital in Surabaya, Indonesia. The recruitment process involved close collaboration with the treating healthcare teams to identify eligible participants who met the inclusion criteria. The research team approached potential participants and their parents in a private setting at the clinic. The purpose of the study, the voluntary nature of participation, and the confidentiality measures were explained in detail. Written informed consent was obtained from both the adolescents and their parents before participation. The inclusion criteria were as follows: i) undergoing chemotherapy for at least two to twelve months when participating in this study; ii) being aged between 13 and 18 years; and iii) being fluent in speaking and understanding the Indonesian language. Exclusion criteria included: i) adolescents with significant cognitive or communication impairments that would prevent effective participation; ii) those with concurrent severe medical conditions other than cancer; and iii) those with a very recent cancer diagnosis (less than two months).

Table 1. Interview guidance.

Interview questions

1. How do you feel about your cancer disease? What do you feel now? What is the source of strength that you feel right now?
2. What was your experience when you were undergoing medication/being treatment with chemotherapy? What difficulties did you encounter?
How do you manage yourself when you are under pressure (while receiving the treatment)?
3. How do you feel (about the treatment)? What is your expectation with the support system (the medical provider, family and friends/peer support)?

Data collection

Semi-structured interviews were conducted from January 2022 to January 2023 in a private room within the hospital, providing a familiar and safe environment. The first author conducted the interviews face-to-face, using open-ended questions to guide participants in sharing their emotions, experiences, and perspectives on their cancer diagnosis and treatment adherence (Table 1). Each session began with rapport-building conversations to create a supportive atmosphere, followed by open dialogue facilitated by active listening and empathetic responses. Participants were informed they could pause or terminate the interview at any time if they felt uncomfortable. The interviews, lasting 15 to 30 minutes, were audio-recorded with consent, and confidentiality was assured. Recordings were transcribed verbatim within 24 hours to maintain accuracy. In line with Colaizzi's method, transcripts were analyzed to identify significant statements and themes, with member checking used to ensure the accuracy of findings.

Data analysis

The data analysis followed Colaizzi's method of descriptive phenomenology to capture the essence of adolescents' experiences with chemotherapy adherence.²² The researchers (DM and SH) began by reading and re-reading the transcripts to immerse themselves in the data. Significant statements reflecting the participants' lived experiences were identified and extracted from the transcripts, and meanings were formulated based on these statements. Throughout this process, researchers bracketed their own biases and assumptions to maintain objectivity.

These formulated meanings were grouped into clusters of themes representing the essence of the participants' experiences. NVivo 10 software was used for data management, organizing the interviews into meaning units while preserving the descriptive integrity of the data. As data collection progressed, themes were continuously refined until data saturation was reached, with no new themes emerging.

After identifying significant statements and formulating themes, member checking was conducted to ensure the findings accurately reflected participants' experiences. During follow-up sessions, the research team summarized the themes and significant statements with the participants. Participants were invited to provide feedback on whether the themes resonated with their experiences and to clarify or expand on any aspects they felt were misrepresented or incomplete. Their input was incorporated into the final analysis to enhance the credibility and authenticity of the findings.

Rigor and trustworthiness

This study employed several strategies to ensure rigor and trustworthiness. First, the researcher established a trustworthy relationship with participants by maintaining professionalism while allowing the adolescents to speak freely about their experiences. Data were collected through semi-structured interviews and transcribed *verbatim* without adding commentary or interpretation to preserve the authenticity of the participants' responses. The report

reflects the exact data that was recorded during the interviews. To enhance confirmability, direct quotes from multiple participants were included to demonstrate transparency in the data analysis process, allowing readers to see the connection between the data and the findings. Additionally, researcher triangulation was used, with multiple researchers involved in the coding and analysis process to reduce bias. Finally, to ensure transferability, the study context and circumstances were described in detail to allow readers to determine the applicability of the findings to other settings.

Ethical consideration

Approval of the Clinical Researchers Ethical Committee of Dr. Soetomo Hospital was obtained (approval No. 0289/KEPK/X/2021). The adolescents and their parents were informed of the purpose and methods of the study before the in-person interviews, and verbal and written consent was obtained. The option to withdraw from the study at any moment was made clear to the participants. All data were de-identified.

Results

Socio-demographics

A total of 16 participants voluntarily reported their experiences (Table 2). Participants ranged in age from 13 to 18 years ($M=14.54$, $SD=1.79$), with nine females (56%) and seven males (44%). Nine participants were at the junior high school level (56%, $M=8.6$, $SD=1.9$). Most participants (87.5%) were at Stage III of cancer, while the remaining 12.5% were at Stage IV. They had been undergoing treatment cycles ranging from the second to the fifth.

Themes

The data were summarized into three main themes with associated sub-themes, determined in light of the adolescents' cancer experiences and their expressions during chemotherapy (Table 3). Using Colaizzi's method, significant statements were extracted from the interviews, and meanings were formulated based on these statements. These meanings were then clustered into overarching themes. The main themes were identified as patients' health

Table 2. Demographic characteristics of participants (n=16).

Characteristics	n	%	Mean	Standard deviation
Gender				
Female	9	56		
Male	7	44		
Age at study			14.54	1.79
13-15	9	56		
16-18	7	44		
Educational level			8.59	1.91
Junior high school	9	56		
Senior high school	7	44		
Ethnicity			1.59	1.22
Javanese	9	56		
Sundanese	1	6.3		
Bataknese	1	6.3		
Balinese	1	6.3		
Maduranese	4	25		
Religion			2.04	1.61
Islam	9	56		
Catholicism	2	12.5		
Christianity	2	12.5		
Hinduism	2	12.5		
Buddhism	1	6.3		
Time since first diagnosis (month)			30.59	6.34
<24	7	44		
25-36	5	31		
37-48	4	25		
Cancer stage				
Stage III	14	87.5		
Stage IV	2	12.5		
Treatment cycle				
2 nd	3	18.7		
3 rd	4	25		
4 th	3	18.7		
5 th	6	37.5		
Primary caregiver				
Mother	14	87.4		
Father	1	6.3		
Grandmother	1	6.3		

Table 3. Coding tree of themes, sub-themes, and supporting quotes from participants.

Themes	Sub-themes	Quotes
Physical and emotional impact of cancer diagnosis and therapy	Perceived cause of cancer	<p>“When my mother told me about my diagnosis, I trembled, like I was thrown a heavy stone and cannot breathe. No one wants to get cancer, not at my age, I am still young, and I have so many dreams.” (P1)</p> <p>“My opinion is that this disease cannot be from the Lord or normal sickness.”</p> <p>Why do you think so? “Because no member of my family has experienced this before. Do you see what I’m saying? No one from my family ever had it then. It should be from someone who hates our family emm... I mean the evil spirit or what errr... What is your view?” (P3)</p> <p>“You mean what I think as the cause how... can I tell specifically my mother?... [sobs] what I can say is that you know, my mother, she had breast cancer, so I’m tempted to conclude that it was caused by heredity.” (P7)</p>
	Symptoms and side effects of therapy	<p>“My main worry is what happens after the chemotherapy finishes. Will I be free, or the disease will recur? I don’t want to go through this therapy again.” (P2)</p> <p>“Eeiith the fact that my hair fell out and became bald after chemotherapy makes me very sad. Mmm, no matter what anyone says, you can’t convince me that I’ll be the same person again after the cancer treatment.” (P5)</p> <p>“Losing my hair was really hard. I didn’t feel like myself anymore, and I was embarrassed to go out.” (P15)</p> <p>“Nausea and vomiting were the worst. Some days, I could barely get out of bed because I felt so weak.” (P13)</p> <p>“Every time I go for a check-up, I’m scared they will find something bad. The fear never goes away.” (P14)</p> <p>“I feel so sad sometimes, like there’s no end to this. Seeing my friends living normal lives makes it even harder.” (P16)</p>
Patients are strengthened by surrounding	Patient-healthcare providers relationships	<p>“I have to deal with it on all levels, not just physically, and now that my doctor is saying the same thing, that’s been helpful to me.” (P4)</p> <p>“The outstanding attitude of the staff helped me very much. I am treated at eye level for everything I say and any opinion I have. It gives you a good feeling.” (P9)</p> <p>“The nurses are really supportive. They make the treatments a bit more bearable and always listen to me.” (P11)</p>
	Family supports	<p>“The support of my family gave me lots of strength.” (P10)</p> <p>“My mother always stood by me in my worst moments, I think that’s what made me strong and wanted to recover.” (P11)</p> <p>“My parents have been amazing. They take care of everything and always try to cheer me up.” (P12)</p>
	Peer support and friendships	<p>“I don’t see my friends as much anymore. They don’t understand what I’m going through, and I feel isolated.” (P6)</p> <p>“When I see other friends with the same problem as me, I feel relieved, I am not alone, it makes you feel good and you continue to seek that and even though the damage happens, you continue. It must be something that makes you go on to take that other step and keep moving in the right direction, and that makes you feel really good and helpful.” (P8)</p>
Medication management	Difficulties in following the prescribed regimen	<p>“The pricking is hard for me psychologically. I am traumatized by the needle pricks” (P6)</p> <p>“Sometimes I get annoyed and angry when the nurse inserts the needle and then fails, then they insert the needle again and again several times, don’t you see it was hurt.” (P8)</p> <p>“I had to give up doing the things I liked the most, such as going for walks or playing football with my friends. Routines, daily life in general were affected.” (P9)</p> <p>“I hate going to the hospital, the treatments are painful, and it’s hard to keep up with school and friends.” (P16)</p> <p>“I play video games and read books to take my mind off the pain. It helps a lot.” (P1)</p> <p>“I play music on my cellphone; it makes me calm down and forget the pain of chemotherapy.” (P2)</p> <p>“My mom installed Murottal Quran in my tab, and I played it while I got chemo; I think it works because it lessens the pain and nausea. I don’t know the correlation, but my friend also uses this, and it works too.” (P16)</p>
	From un-adherence to adherence	<p>“You can get things off your chest with your family, your friends and stop doing anything you want to, but you can never stop taking the medication, ever...” (P7)</p> <p>“I want to be cured, that means I must obey the cancer treatment. It is period!” (P12)</p> <p>“I try to stay positive and think about the future. I tell myself that it will end, and I’ll get better. I just need to hold down, be a good girl, obey the rules and do the treatments.” (P15)</p>

beliefs, strength, motivation, and perception of illness control. Member checking was conducted with participants to confirm the accuracy of these themes.

Theme 1: physical and emotional impact of cancer diagnosis and therapy

Perceived cause of cancer

Participants have varied perceptions about the cause of cancer and felt uneasy and acted or moved something vigorously when they were first told about their cancer diagnosis. The participants reported feeling disturbed and having difficulties receiving bad news about their health. They were stunned and heartbroken as their universe had fallen apart. Adolescents had turbulent emotions and were quick to get furious. As described by a participant:

“When my mother told me about my diagnosis, I trembled, like I was thrown a heavy stone and cannot breathe. No one wants to get cancer, not at my age, I am still young, and I have so many dreams.” (P1)

A significant minority of the respondents indicated that they thought the cause of the disease was recorded, illustrated as follows:

“My opinion is that this disease cannot be from the Lord or normal sickness.”

Why do you think so? “Because no member of my family has experienced this before. Do you see what I’m saying? No one from my family ever had it then. It should be from someone who hates our family emm... I mean the evil spirit or what errr... What is your view?” (P3)

However, a participant also thought that the condition was a result of a biogenic or hereditary cause in his family. An interviewee’s narration is presented as:

“You mean what I think as the cause? How... can I tell specifically my mother?... [sobs]... what I can say is that you know, my mother, she had breast cancer, so I’m tempted to conclude that it was caused by heredity.” (P7)

Symptoms and side effects of chemotherapy

Significant statements were identified regarding the physical and emotional toll of chemotherapy, with participants describing both the physical side effects and their emotional responses. Formulated meanings revealed that chemotherapy had a profound impact on their body image, self-esteem, and mental health, as described by a participant in this study:

“My main worry is what happens after the chemotherapy finishes. Will I be free, or the disease will recur? I don’t want to go through this therapy again.” (P2)

Body image was also a major concern to the patients. Participants were worried about how they looked after the chemotherapy. Their responses are presented in the following narrations:

“Eeiiiith the fact that my hair fell out and I became bald after chemotherapy makes me very sad. Mmm, no matter what anyone says, you can’t convince me that I’ll be the same person again after the cancer treatment.” (P5)

Another adolescent reported that chemotherapy changes his physical appearance and self-esteem and said, *“Losing my hair was really hard. I didn’t feel like myself anymore, and I was embarrassed to go out.”* (P15)

The adolescents with cancer described suffering from debilitating side effects, particularly pain, nausea, vomiting, and hair loss,

as reported by one child: *“Nausea and vomiting were the worst. Some days, I could barely get out of bed because I felt so weak.”* (P13)

Adolescents with cancer often face significant challenges and report experiencing poor mental health. Many struggle with a loss of confidence in themselves and their ability to cope with pressure. As a result of their illness and its treatment, they may feel worn down, burnt out, anxious, sad, and depressed, as reported by one child: *“Every time I go for a check-up, I’m scared they will find something bad. The fear never goes away.”* (P14)

Another child shared, *“I feel so sad sometimes, like there’s no end to this. Seeing my friends living normal lives makes it even harder.”* (P16)

Theme 2: patient strengthened by surrounding

Patient-healthcare providers’ relationships

This sub-theme indicated that the participants felt that health professionals understood the disease burden. Patients felt that healthcare providers were helpful in providing clear communication and emotional support about the disease and its treatment. As a result, participants appreciate being treated with respect and the impact this has on their sense of acceptance and adherence to treatment.

“I have to deal with it on all levels, not just physically, and now that my doctor is saying the same thing, that’s been helpful to me” (P4).

While others said:

“The outstanding attitude of the staff helped me very much. I am treated at eye level for everything I say and any opinion I have. It gives you a good feeling.” (P9)

“The nurses are really supportive. They make the treatments a bit more bearable and always listen to me.” (P11)

Health care professionals’ true understanding of the burden of disease was perceived as particularly supporting, with participants reporting they could be honest with the treating team about the personal impact of the disease and treatment, as opposed to family and friends who they were sometimes trying to protect.

Family support

Over half of the adolescents reported that support from their family members helps them cope with their illness more easily, as one child said, *“The support of my family gave me lots of strength.”*(P10)

While the others said:

“My mother always stood by me in my worst moments, I think that’s what made me strong and wanted to recover.” (P11), and *“My parents have been amazing. They take care of everything and always try to cheer me up.”* (P12)

Peer support and friendships

Adolescents felt alone in their concerns since they found it difficult to express their worries to friends. Individuals who could honestly and openly express their anxieties demonstrated a more positive outlook and the ability to focus on accepting their circumstances (this was easier for those with a better prognosis). For those with previous experiences of anxiety, their experience was mixed: some believed they were more prepared to handle anxiety due to previous experiences of psychological support, while others felt entirely overwhelmed by the diagnosis. Socializing with other cancer patients helped to normalize their experiences during treatment, but it could also be upsetting to witness how sick people can get or, in other situations, to realize how poorly they were in com-

parison.

One said, *"I don't see my friends as much anymore. They don't understand what I'm going through, and I feel isolated."* (P6)

Those seeking peer support during therapy expressed gratitude for the space it provided to express their fears and anxieties without burdening others and for enabling them to avoid dwelling on or ruminating on their concerns.

For instance, one participant noted,

"When I see other friends with the same problem as me, I feel relieved, I am not alone, it makes you feel good, and you continue to seek that, and even though the damage happens, you continue. It must be something that makes you go on to take that other step and keep moving in the right direction, and that makes you feel really good and helpful." (P8)

Theme 3: medication management

Difficulties in following the prescribed regimen

Significant statements were extracted related to the physical and emotional challenges adolescents faced in adhering to their treatment regimen. These statements revealed how adolescents struggled with the physical discomfort of injections and the emotional toll of frequent hospital visits.

For example, one participant expressed, *"The pricking is hard for me psychologically. I am traumatized by the needle pricks."* (P6)

While another said, *"Sometimes I get annoyed and angry when the nurse inserts the needle and then fails, then they insert the needle again and again several times, don't you see it was hurt."* (P8)

All the participants underlined the considerable impact of the side effects of adjuvant chemotherapy on their quality of life. Some in active school had to postpone their studies, remain on sick leave, or even stop doing what they liked most. These statements reflect this: *"I had to give up doing the things I liked the most, such as going for walks or playing football with my friends. Routines, daily life in general were affected."* (P9)

The frequent medical appointments made an emotional burden for adolescents; one stated, *"I hate going to the hospital, the treatments are painful, and it's hard to keep up with school and friends."* (P16)

However, the majority of adolescents said there could be greater management when it comes to mental health help. Those on treatment felt mental health should be addressed with the same emphasis as their physical health. Adolescents made efforts to adjust to their illnesses and treatments. Participants found that certain activities could alleviate pain and fear during therapy, but they had to repeatedly request these activities before receiving them.

"I play video games and read books to take my mind off the pain. It helps a lot." (P1)

"I play music on my cellphone; it makes me calm down and forget the pain of chemotherapy." (P2)

"My mom installed Murottal Quran in my tab, and I played it while I got chemo; I think it works because it lessens the pain and nausea. I don't know the correlation, but my friend also uses this, and it works too." (P16)

From un-adherence to adherence

When given the opportunity to think things through, adolescents were more likely to mention feeling the need to be brave, go it alone, or rely solely on their willpower; however, several of them admitted that this was frequently due to stubbornness and immaturity.

However, most patients agreed that medication adherence was

the key to overcoming the disease, emphasizing the importance of taking it on a regular basis despite adverse effects and putting it ahead of other concomitant health issues. The need and the belief that the medication is necessary were arguments that overcame not taking it. The following statement illustrates this:

"You can get things off your chest with your family, your friends and stop doing anything you want to, but you can never stop taking the medication, ever ..." (P7)

"I want to be cured, that means I must obey the cancer treatment. It is period!" (P12)

"I try to stay positive and think about the future. I tell myself that it will end, and I'll get better. I just need to hold down, be a good girl, obey the rules and do the treatments." (P15)

Discussion

This study enhances the understanding of adolescents' experiences with chemotherapy adherence by exploring the emotional, social, and practical challenges they face. Cancer, a life-threatening and complex illness, imposes profound psychological and spiritual burdens, as previous research indicates.^{23,24} The unexpected diagnosis of cancer disrupts the lives of adolescents and their families, necessitating a restructuring of relationships and daily routines.^{23,25} This disruption is often accompanied by intense emotions, including fear, anxiety, despair, and helplessness.^{26,27} In this study, participants frequently experienced emotional turmoil upon diagnosis, sometimes attributing their illness to hereditary factors or other personal explanations. These findings underscore the importance of addressing adolescents' emotional responses early in the treatment process to build coping mechanisms and resilience.

Support from family, friends, and healthcare providers emerged as a crucial factor in helping adolescents manage the stress and challenges of chemotherapy. Previous studies have highlighted the role of supportive strategies, such as empathetic communication, timely clarification of treatment plans, and encouragement to express fears and concerns.^{19,28,29} Similarly, participants in this study reported finding consolation and strength in their relationships with family members and trusted medical professionals. The hospital setting, often regarded as a second home, provided an environment where adolescents felt comfortable sharing their emotions and concerns.^{30,31} These findings suggest that fostering supportive relationships within clinical settings is integral to improving adherence. Healthcare providers should prioritize creating a therapeutic alliance with adolescent patients through consistent and compassionate interactions.

Optimism and hope were also central themes in this study, influencing participants' adherence behaviours. While hope alone did not guarantee adherence, it was an essential component when combined with a clear understanding of treatment benefits and the effectiveness of medications. Participants who connected their knowledge of the illness to symptom relief were more likely to remain adherent. This aligns with existing evidence suggesting that hope can enhance behavior change when paired with meaningful knowledge.³² Interventions that integrate psychological counseling and education about treatment benefits may further enhance adherence by reinforcing hope and resilience.

The study's findings have direct implications for clinical practice and the development of targeted interventions. Healthcare providers should adopt a holistic approach that addresses both the physical side effects of chemotherapy and the emotional well-

being of adolescent patients. Mental health assessments, counseling services, and peer support programs could play a pivotal role in supporting adolescents. Additionally, practical interventions such as child-friendly hospital environments and digital tools for tracking medication adherence may mitigate logistical challenges and improve engagement with treatment.

Limitations

This study has several limitations. First, the sample size, although appropriate for a phenomenological approach, was relatively small and recruited from a single hospital, which may limit the transferability of the findings to other populations or settings. Second, the reliance on self-reported data might have introduced recall bias as participants reflected on their experiences with chemotherapy adherence. Third, the study was conducted within a specific cultural and clinical context, which may influence the generalizability of the findings to adolescents in other cultural or healthcare environments. Future research should consider exploring diverse settings and employing longitudinal designs to capture the evolving nature of chemotherapy adherence experiences over time.

Conclusions

This study provides valuable insights into the lived experiences and perspectives of adolescents undergoing chemotherapy, highlighting the multifaceted challenges they face in adhering to treatment. Emotional distress, social isolation, and the physical side effects of chemotherapy emerged as significant barriers, while support from healthcare providers, family, and peers served as critical facilitators. These findings underscore the importance of addressing both the psychological and practical needs of adolescents to improve adherence. Healthcare providers must adopt a patient-centered approach that integrates emotional support, effective communication, and tailored interventions to enhance treatment adherence. By understanding the unique experiences of adolescents, healthcare teams can develop targeted strategies to foster resilience, improve adherence, and ultimately achieve better treatment outcomes.

References

- Cox LE, Kenney AE, Harman JL, et al. Psychosocial functioning of young children treated for cancer: findings from a clinical sample. *J Pediatr Oncol Nurs* 2019;36:17–23.
- Sansom-Daly UM, Wakefield CE, Patterson P, et al. End-of-life communication needs for adolescents and young adults with cancer: recommendations for research and practice. *J Adolesc Young Adult Oncol* 2020;9:157–65.
- Malard F, Mohty M. Acute lymphoblastic leukaemia. *Lancet* 2020;395:1146–62.
- Volberding PA, Spicer CM, Cartaxo T, Aiuppa L. Childhood cancer and functional impacts across the care continuum. *Childhood Cancer and Functional Impacts Across the Care Continuum* 2021;1–527.
- Arizona IKLT, Sukartini T, Efendi F, et al. The Experiences of cancer-related fatigue among adult cancer patients: a systematic review. *J Nurs* 2019;14.
- Khoirunnisa SM, Suryanegara FDA, de Jong LA, et al. A systematic review of health-related quality of life in women with HER2-positive metastatic breast cancer treated with trastuzumab. *Pharmacoecoon Open* 2024;8:511–24.
- Stein KD, Syrjala KL, Andrykowski MA. Physical and psychological long-term and late effects of cancer. *Cancer* 2008;112:2577–92.
- Andrés-Jensen L, Larsen HB, Johansen C, et al. Everyday life challenges among adolescent and young adult survivors of childhood acute lymphoblastic leukemia: An in-depth qualitative study. *Psychooncology* 2020;29:1630–7.
- Epstein RS, Roy UKB, Aapro M, et al. Cancer patients' perspectives and experiences of chemotherapy-induced myelosuppression and its impact on daily life. *Patient Prefer Adherence* 2021;15:453–65.
- Anand U, Dey A, Chandel AKS, et al. Cancer chemotherapy and beyond: Current status, drug candidates, associated risks and progress in targeted therapeutics. *Genes Dis* 2022;10:1367–401.
- Arslan FT, Basbakkal Z, Kantar M. Quality of life and chemotherapy-related symptoms of Turkish cancer children undergoing chemotherapy. *Asian Pacific J Cancer Prev* 2013;14:1761–8.
- Martinez-Santos AE, Fernandez-De-La-Iglesia J del C, Sheaf G, Coyne I. A systematic review of the educational experiences and needs of children with cancer returning to school. *J Adv Nurs* 2021;77:2971–94.
- Wiener L, Bedoya S, Battles H, et al. Voicing their choices: Advance care planning with adolescents and young adults with cancer and other serious conditions. *Palliat Support Care* 2022;20:462–70.
- Dewi EU, Nursalam, Mahmudah, Yunitasari E. The effect of peer support psychoeducation based on experiential learning on self-care demands among breast cancer patients with post-chemotherapy. *J Public Health Res* 2023;12.
- Supriati L, Sudiana IK, Nihayati HE, et al. Perspective of uncertainty and emotional responses in breast cancer patients during the COVID-19 pandemic. *SAGE Open Nurs* 2022;8.
- Nira AW, Triharini M, Nastiti AA. Factors associated with the resilience of breast cancer patients undergoing chemotherapy. *Pedimaternurs Nurs J* 2020;6:89.
- Cheung AT, Li WHC, Ho LLK, et al. Impact of brain tumor and its treatment on the physical and psychological well-being, and quality of life amongst pediatric brain tumor survivors. *Eur J Oncol Nurs* 2019;41:104–9.
- Mirlashari J, Ebrahimpour F, Salisu WJ. War on two fronts: Experience of children with cancer and their family during COVID-19 pandemic in Iran. *J Pediatr Nurs* 2021;57:25–31.
- Laronne A, Granek L, Wiener L, et al. "Some things are even worse than telling a child he is going to die": Pediatric oncology healthcare professionals perspectives on communicating with children about cancer and end of life. *Pediatr Blood Cancer* 2022;69.
- Murphy S, Donma AJ, Kohut SA, et al. Mindfulness practices for children and adolescents receiving cancer therapies. *J Pediatr Hematol Oncol Nurs* 2022;39:40–8.
- Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Heal Care* 2007;19:349–57.
- Vignato J, Inman M, Patsais M, Conley V. Computer-assisted qualitative data analysis software, phenomenology, and Colaizzi's method. *West J Nurs Res* 2022;44:1117–23.
- Liu Y, Li Y, Chen L, et al. Relationships between family resilience and posttraumatic growth in breast cancer survivors

- and caregiver burden. *Psychooncology* 2018;27:1284–90.
24. Supatmi S, Santoso B, Yunitasari E. The effect of spirituality on psychological hardiness of cervical cancer patients with chemotherapy. *Stud Ethno-Medicine* 2022;16:17–23.
 25. Neville K. The relationships among uncertainty, social support, and psychological distress in adolescents recently diagnosed with cancer. *J Pediatr Oncol Nurs* 1998;15:37–46.
 26. Dalton L, Rapa E, Ziebland S, et al. Communication with children and adolescents about the diagnosis of a life-threatening condition in their parent. *Lancet* 2019;393:1164–76.
 27. Suhayono S, Wibowo SA, Purnamasari I, et al. A systematic review of supportive therapy effect on quality of life in cancer patients. *J Ners* 2020;15:197–207.
 28. Brinkman TM, Recklitis CJ, Michel G, et al. Psychological symptoms, social outcomes, socioeconomic attainment, and health behaviors among survivors of childhood cancer: Current state of the literature. *J Clin Oncol* 2018;36:2190–7.
 29. Kalajdžić O, Pavlović J. The impact of the family and health workers on psychosocial adaptation and the process of treatment of oncological patients. *Open Access Maced J Med Sci* 2020;8:779–83.
 30. Blazin LJ, Cecchini C, Habashy C, et al. Communicating effectively in pediatric cancer care: Translating evidence into practice. *Children* 2018;5.
 31. Topperzer MK, Hoffmann M, Larsen HB, et al. Interprofessional versus monoprofessional case-based learning in childhood cancer and the effect on healthcare professionals' knowledge and attitudes: study protocol for a randomised trial. *BMC Health Serv Res* 2020;20.
 32. Ripamonti CI, Giuntoli F, Gonella S, Miccinesi G. Spiritual care in cancer patients: A need or an option? *Curr Opin Oncol* 2018;30:212–8.