

CHAPTER 2

LITERATURE REVIEW

2.1 Concept of Medication Adherence

2.1.1 Definition of Chemotherapy Treatment Adherence

Adherence is the behavior of an individual or caregiver in following a treatment plan or treatment that is mutually agreed upon by both patients and health workers in order to provide effective treatment results (Prabasari, 2021). Adherence in the health context includes obedience, compliance with the rules given by health workers, and compliance with what is and should not be done. Adherence is an individual's attitude in carrying out or implementing recommendations by health workers without any coercion in the process.

Adherence to treatment is the behavior of patients who comply with and comply with the treatment instructions that have been given, including taking drugs according to the dosage and schedule that has been set by the medical personnel beforehand. In addition, medication adherence also includes following recommendations related to patient care, such as following the recommended diet, changing lifestyle as recommended, and visiting health facilities regularly according to a pre-approved schedule. Patient compliance with these elements is very important to achieve optimal treatment results (Farisi, 2020).

Chemotherapy treatment adherence refers to the extent to which a cancer patient undergoes or follows the instructions and treatment plan that has been recommended during chemotherapy (Setiawati & Roza, 2019). Compliance with

undergoing chemotherapy includes complying with treatment according to schedule, following instructions given on how to deal with side effects, and communicating with health professionals about side effects or problems that arise after treatment.

2.1.2 Methods of Measuring Chemotherapy Treatment Adherence

Measuring medication adherence involves a variety of approaches that can provide an idea of the extent to which patients are following medical instructions given by healthcare professionals. Adherence to treatment can be measured both objectively and subjectively. According to Ernawati et al., (2020), several ways to measure patient compliance in undergoing treatment, including:

1. Recording the treatment schedule (direct observation)

Recording treatment schedules or direct observation is a method that involves direct observation of patients while undergoing chemotherapy treatment. Healthcare workers are tasked with monitoring the patient's attendance at each chemotherapy session and ensuring that they follow the set schedule, as well as recording absences or delays. This method has the advantage of being able to produce accurate and direct compliance data, but it has the disadvantage of requiring constant supervision and may not be able to be carried out outside the environment of health care facilities.

2. Using a medical note or calendar

The use of medication notes or calendars is a method in which patients are given tools such as calendars or notes to record the dose of drugs that have been taken, the time, and the date of chemotherapy. In addition, patients are also asked to

mark each dose of medication taken according to the instructions, side effects, and complaints felt during treatment. The advantage of this method is that it can make it easier for patients to remember treatment and provide direct evidence that can be monitored.

3. Interviews and surveys (self-report)

Interviews and surveys (self-report) are methods in which patients are asked to report how often they follow chemotherapy treatment as instructed through interviews or filling out questionnaires. The interview was conducted by asking about the patient's compliance in following the treatment schedule, drug dosage, and how to overcome the side effects of treatment. This method is easy to do and can provide more personalized information about the patient's experience, but it has a drawback that is prone to bias or inaccuracy because patients can be dishonest during the interview process or fill out questionnaires.

4. Using the reminder system

A reminder system is a method of measuring medication adherence that uses technology such as a mobile phone app, text message, or alarm as a reminder to the patient to undergo chemotherapy. An app or reminder device is set up to inform patients about the treatment schedule which includes the day, time, and place where the patient should undergo chemotherapy. This method of reminder system can help patients, especially those who have busy schedules, to remember medications in a timely manner. However, the disadvantage of this method is that sometimes patients ignore or turn off reminders, especially if they feel distracted or uncomfortable

5. Family or companion reports

Family or companion reports are a method that collects information either from the patient's family, friends, or companions regarding the patient's compliance in undergoing treatment. Family members or treatment companions may be asked to report whether the patient is following treatment correctly and whether they have any part in reminding the patient of the chemotherapy schedule or medication dose.

2.1.3 The Impact of Non-Adherence in Undergoing Chemotherapy Treatment

Adherence to treatment is essential for breast cancer patients to ensure the effectiveness of treatment. Non-compliance in undergoing chemotherapy can have adverse effects that can affect the patient's quality of life. According to (Mardhiyati et al., 2022), some of the impacts that can arise if cancer patients do not comply with chemotherapy include:

1. Failure to control cancer

Breast cancer that is not treated properly through routine chemotherapy can cause the cancer to continue to grow, and can even cause metastasis.

2. Decreased effectiveness of treatment

Non-compliance in undergoing chemotherapy treatment can make cancer cells develop resistance to drugs, slow down the healing process, and make treatment more difficult and cause more complications in patients.

3. Increased risk of death

Breast cancer that is not treated properly or is too late in undergoing treatment can cause it to spread to other vital organs such as the lungs, liver, and brain which makes the prognosis worse. In addition, increasingly aggressive and difficult-to-control cancer cells can shorten a patient's life expectancy and increase the risk of death.

4. Increasing side effects and complications

Chemotherapy treatment can cause side effects such as decreased immunity, nausea, fatigue, and infection. Failure to undergo chemotherapy regularly can interfere with the recovery process and exacerbate existing side effects, as the body does not get enough time to recover.

5. Affects quality of life

Side effects such as nausea, weakness, and fatigue can interfere with daily activities and cause problems with quality of life. In addition, cancer that is not treated properly can cause anxiety, depression, and stress that adversely affect mental and emotional health.

6. More expensive and complex treatment

Breast cancer that is not treated properly in the early stages due to non-compliance can make patients require more expensive, intensive and longer treatment.

2.1.4 Strategies to Improve Chemotherapy Treatment Adherence

Improving patient adherence to chemotherapy treatment is a very important aspect in cancer treatment. High adherence to chemotherapy can increase the chances of recovery, reduce the risk of relapse, and improve quality of life. However, undergoing chemotherapy can also pose its own challenges for patients such as side effects, anxiety, or a lack of understanding of the importance of treatment. Based on research conducted by (Putra Ritonga et al., 2019), there are several strategies to improve treatment adherence, including:

1. Convey to patients the importance of adherence in undergoing chemotherapy to achieve recovery
2. Reminding patients to carry out all the actions that have been instructed to ensure the success of the treatment
3. Indicates the medication the patient is using in the treatment
4. Providing confidence to patients regarding the effectiveness of the medication given

Inform and educate about the impact that can occur if you do not comply with treatment. In addition, it encourages family, friends, and the surrounding environment to provide support to patients to be obedient in undergoing treatment.

2.2 Factors Affecting Chemotherapy Treatment Adherence

Patient compliance in undergoing chemotherapy treatment can be influenced by several factors, ranging from biological, psychological, social, to the health system. These factors are interconnected with each other and affect the patient's ability to follow the treatment plan appropriately. Pramesti et al., (2020), in their research explained that there are several factors that affect patient compliance in undergoing treatment, including:

2.2.1 Physical Factor

1. Side effects of chemotherapy treatment

Chemotherapy treatment often causes side effects such as nausea, vomiting, weight loss, fatigue, weakness and weakness, hair loss, and decreased immunity which often makes patients reluctant to continue treatment (Febriani et al., 2019). Each patient also has a different level of tolerance to chemotherapy drugs, so some patients sometimes experience more severe side effects and make them hesitate or delay undergoing chemotherapy.

2. The patient's general health condition

The patient's physical condition and general health, including the presence of comorbidities such as diabetes, heart disease, hypertension, or impaired kidney function can affect how the patient's body responds to chemotherapy. Patients with additional medical conditions may have difficulty administering both treatments (chemotherapy and treatment of comorbid diseases), which decreases adherence to chemotherapy. In addition, the interaction of chemotherapy drugs

with comorbid drugs can worsen side effects or reduce the effectiveness of chemotherapy (Deswita et al., 2023).

3. Patient's age

The age of the patient can affect how the body responds to chemotherapy treatment. Elderly patients can have health problems such as decreased organ function, a weakened immune system, and lower tolerance to medications. Elderly patients often experience more severe chemotherapy side effects, which can reduce their ability and willingness to undergo treatment regularly. Elderly patients may also have limited mobility or social support issues, which can affect compliance (Permana et al., 2024).

4. Decreased organ function

Chemotherapy can affect the body's organs, including vital organs such as the liver and kidneys which are responsible for drug metabolism. Patients with impaired organ function, such as kidney failure or liver disease may have difficulty administering the chemotherapy doses received (Permana et al., 2024). Chemotherapy in patients with decreased organ function is given at different doses compared to patients who do not have additional health problems, which has an impact on the decreased effectiveness of chemotherapy. Dosage differences can affect the success of treatment and cause patients to feel frustrated so that they do not comply with treatment.

2.2.2 Role Factor

Patients who have roles and responsibilities in the family such as mothers, wives, or family members who are heavily involved in daily life tend to feel

obligated to stay healthy in order to carry out their social roles. This feeling can be a motivator for patients to stick to the chemotherapy schedule even though the physical and emotional challenges felt are considerable. In addition, family dependence on the patient (for example as a provider of alimony or the role of caregiver) can also affect the patient's attitude in undergoing treatment to maintain the continuity of the role being undertaken (Marlinda et al., 2019).

2.2.3 Psychological Factor

Psychological factors play an important role in a patient's adherence to chemotherapy treatment. The feelings and mental states experienced by patients can directly or indirectly affect motivation in continuing or participating in chemotherapy. Research conducted by Aniarti (2024) shows several psychological impacts that often appear on patients undergoing chemotherapy, including:

1. Anxiety and fear

One of the main causes of patient non-compliance in undergoing chemotherapy is anxiety about the side effects of treatment, such as nausea, vomiting, fatigue, and hair loss. In addition, patients also often feel afraid of medical procedures carried out during the treatment process, such as the installation of infusions or injections. Patients who are afraid of side effects and medical procedures are sometimes reluctant to undergo treatment or even decide to stop treatment. The anxiety and fear that patients feel often arise as a result of a lack of exposure to information or previous traumatic experiences.

2. Depression

Depression is a psychological disorder that is very common among cancer patients. Cancer patients who are depressed often feel that treatment does not give results or there is no hope of recovery, making patients think chemotherapy treatment is useless. In addition, the feeling of helplessness can make the patient feel that there is no point in undergoing treatment, since feeling that their fate is already determined, regardless of the treatment efforts can lower the patient's motivation to undergo chemotherapy regularly (Hafsah, 2022).

3. Anxiety about the prognosis

Many patients are worried about the outcome of their treatment, including uncertainty about recovery. Patients often feel that chemotherapy provides little hope for recovery, which makes them hesitant to continue therapy even though they know that it is the best option to prolong life. Also, excessive anxiety regarding the long-term prognosis can increase feelings of fear of death which can make patients feel hopeless.

4. Refusal and distrust of treatment

Cancer patients often experience a psychological process called rejection, in which patients reject the fact that they have cancer and refuse to undergo chemotherapy. Some patients may also doubt the effectiveness of chemotherapy and feel that traditional or alternative treatments are better. Refusal and distrust of treatment can stem from the patient's inability to accept their diagnosis which also affects adherence to chemotherapy treatment.

2.2.4 Social Factor

Social factors have a great influence on patient compliance in undergoing chemotherapy. Chemotherapy treatment requires a fairly high cost and strong social support to ensure that patients can carry out the treatment process properly. Dewi Anggraeni & Novianty (2021), in their research explained the social factors that affect patient compliance in undergoing chemotherapy treatment, including:

1. Family and social support

Family and people around them play an important role in supporting cancer patients in undergoing regular treatment. Family and people around can provide emotional support, help patients cope with anxiety or depression, and provide practical support, such as taking them to the hospital or helping with daily activities during treatment. Patients who have family members actively involved in treatment tend to increase adherence to treatment (Ajis et al., 2022). Without adequate social support, patients can feel isolated and less motivated to continue treatment.

2. Social stigma

Cancer patients often feel embarrassed or anxious about their cancer diagnosis and fear being judged by others. Social stigma regarding cancer can make patients avoid talking about their condition or receiving treatment openly and create feelings of isolation (Irawan et al., 2017). Shame or fear of being treated differently by family, friends, or society and feelings of isolation can lead patients to delay or avoid chemotherapy treatment.

3. Access to social support networks

In addition to family, social support groups such as cancer patient groups can provide a much-needed sense of togetherness. This social group offers emotional support from fellow patients who are experiencing similar conditions. When patients feel supported by people who have the same experience, they tend to be more obedient in undergoing treatment and face challenges better (Angelie & Suryadi, 2023).

Counseling or psychotherapy services can also help patients deal with stress, anxiety, and depression related to cancer diagnosis and treatment. Limited access or lack of information about social services can prevent patients from seeking the support they need, affecting patient medication compliance.

2.2.5 Economy Factor

Economic factors play an important role in patient adherence to chemotherapy treatment. High medical costs, access to health care, and economic issues can influence the decision to follow and continue chemotherapy. Several economic factors that can affect patient compliance in undergoing chemotherapy include:

1. Chemotherapy treatment costs

Chemotherapy often involves very high costs that include the cost of chemotherapy drugs, administrative costs, and consultation fees with specialists. In some types of cancer, treatment can last for a long time with many cycles. These things make the total cost of treatment very large, thus burdening patients

and families, especially for patients who do not have health insurance or sufficient funds.

In addition to the main medical expenses, patients also need to bear additional costs such as medications to overcome chemotherapy side effects (such as anti-nausea and immune supplements), hospitalization, or the cost of follow-up examinations (blood tests or radiography tests). All of these costs make treatment more expensive and can ultimately affect the patient's decision to continue therapy.

2. Loss of income and impact on employment

Chemotherapy often causes patients to feel very tired, nauseous, and sick. The side effects of chemotherapy can prevent the patient from working, especially if the patient's work requires physical activity or high concentration. Patients who have to take time off from work to undergo treatment may face financial problems, especially if the patient does not receive sufficient health benefits or sick leave.

In addition, patients who take continuous leave to undergo treatment are at risk of being terminated, especially if the workplace does not have supportive or flexible policies related to health problems. Uncertainty about work, financial problems, and the potential loss of a job can increase stress and influence a patient's decision to undergo regular treatment.

3. The economic burden of the family

Prolonged or repeated chemotherapy treatment can be a heavy economic burden for both patients and families. Patients who are the head of the family or the main

breadwinner in the family can become stressed and worried about how to meet their financial needs when they are not working and while undergoing treatment. In some cases, the patient's family also has to reduce work to care for the patient, which also has an impact on the increasing economic burden.

High-cost chemotherapy treatment can lead to the depletion of the family's financial resources, which can also cause strain on family relationships and worsen the patient's emotional state. The inability of patients and families to bear the cost of treatment can lead to the decision to delay or even stop treatment.

4. Influence on spending patterns and priorities

Patients who face high medical costs often have to cut other expenses, such as basic needs (food, housing, education, and other basic needs) to meet their medical expenses. Cutting spending on basic necessities can increase financial stress in the family which also damages the quality of life of the family. In some cases, the patient's family may be forced to choose between paying for treatment or meeting other basic needs, which can cause tension within the family and influence the patient's decision to undergo treatment.

2.2.6 Cognitive Factor

Cognitive factors play an important role in breast cancer patients' compliance in undergoing chemotherapy treatment. This factor is related to the patient's ability to focus on treatment, remember the treatment schedule, and understand the medical instructions given by the health worker. Difficulties in concentration and memory can be a significant obstacle that reduces a patient's ability to follow medication properly.

1. Concentration

One of the side effects that is often complained about by patients undergoing chemotherapy is difficulty concentrating. Chemotherapy treatment can often affect the brain and nervous system, known as chemo brain or chemotherapy-induced cognitive dysfunction (CICD). This condition causes patients to feel confused, have difficulty focusing, or feel like there is too much to think about. Patients with impaired concentration may also forget to follow the chemotherapy schedule or lose focus when planning treatment steps. This can result in the patient's absence from the chemotherapy session or non-compliance with the medication that has been prescribed. Impaired concentration can also cause difficulties in understanding healthcare professionals' explanations or filtering out important information related to treatment, which can ultimately affect the patient's decision to undergo chemotherapy regularly (Juwita et al., 2019).

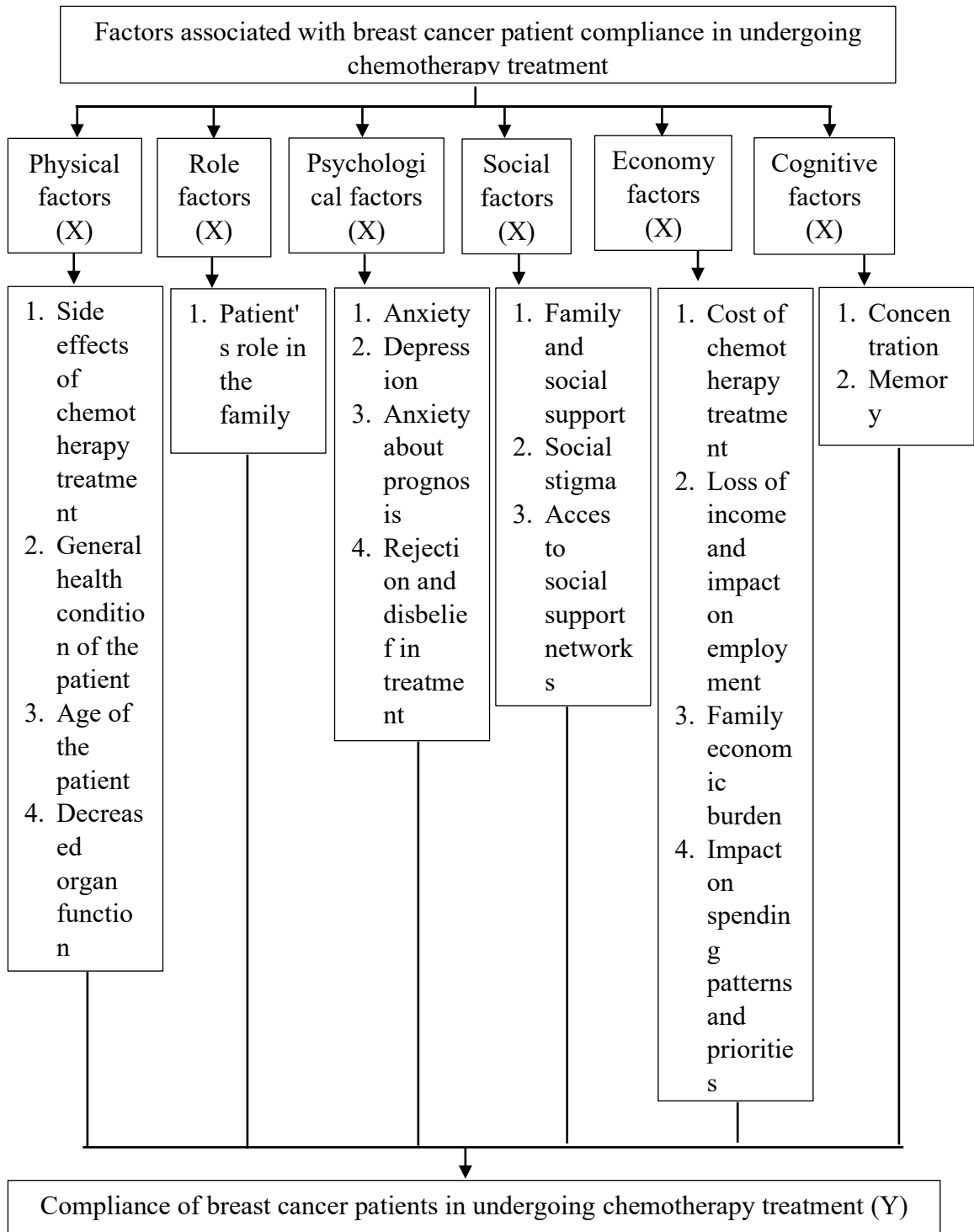
2. Memory

In addition to difficulties in concentrating, patients who are undergoing chemotherapy often experience memory impairment. Patients often have difficulty remembering treatment schedules, medical instructions, or lifestyle changes that must be made to support treatment. This memory impairment can cause patients to forget the dose of medication to take or forget when to come to a health facility for chemotherapy.

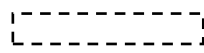
Patients who cannot remember instructions or education by health workers properly can experience difficulties in carrying out the correct treatment procedures. For example, if the patient is given instructions to maintain a special

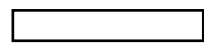
diet or do regular health checkups, memory impairment can cause the patient to forget, which can also affect the effectiveness of chemotherapy treatment (Syarif et al., 2020).

2.3 Research Concept Framework



Information:

 : Unstudied variables

 : Variables studied

 : There is a connection

X : Independent variable

Y : Dependent variable

2.4 Research Hypothesis

Reserach hypothesis based on the research conceptual framework, it is found that hypothesis H₁ includes:

1. Physical factors are associated with chemotherapy treatment adherence among breast cancer patients
2. Role factors are associated with chemotherapy treatment adherence among breast cancer patients
3. Psychological factors are associated with chemotherapy treatment adherence among breast cancer patients
4. Social factors are associated with chemotherapy treatment adherence among breast cancer patients
5. Economy factors are associated with chemotherapy treatment adherence among breast cancer patients
6. Cognitive factors are associated with chemotherapy treatment adherence among breast cancer patients
7. Quality of life is associated with chemotherapy treatment adherence among breast cancer patients
8. There is a dominant factor that is most strongly most associated with chemotherapy treatment adherence among breast cancer patients