

Internal Protective Factors That Affect The Resilience Of Hemodialysis Patients: Scoping Review

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Abstract: Internal protective factors are factors that come from the individual to support a resilient condition due to the hemodialysis process. The hemodialysis process causes many changes to patients with chronic kidney failure, such as changes in eating, drinking and activity patterns. These factors are the main factor that arises from oneself so it will bring motivation in the process of life going forward. This research is a scoping review which aims to determine the internal protective factors which can affect the resilience of hemodialysis patients. Articles are filtered from science direct, Scopus, PubMed, and Proquest. The keywords used are “factors” AND “Resilience” AND “hemodialysis patient”. The articles used are articles published from 2019-2023. The articles included are full articles, in English, using qualitative, quantitative and mixed methods. The analysis used in this review is the analytical method of Arksey and O’Malley in 6 stages. There were 7 articles analyzed at the end of the search. The protective internal factors obtained are the ability to regulate emotions, optimism, self-esteem, strength and self-confidence as well as spiritual well being. These factors have a positive influence in realizing the resilient condition of hemodialysis patients. This research can be continued with the application of nursing interventions to improve the internal ability of hemodialysis patients to achieve a resilient condition.

Keywords: hemodialysis, internal factors, patient, resilience, review

INTRODUCTION

Hemodialysis is the most common renal replacement therapy undertaken by patients with chronic kidney disease (Papadakis et al., 2019). New patients with chronic kidney disease undergoing hemodialysis are increasing every year (Kementrian Kesehatan Republik Indonesia, 2018). Hemodialysis patients experience changes physically and psychologically (Kramer et al., 2019). The patients will experience uncomfortable physical symptoms such as nausea, vomiting, weakness, anemia, sleep disturbances, muscle cramps, hypertension and hypotension (Aini & Maliya, 2020; Alencar G et al., 2019; Kamil & Setiyono, 2018). These symptoms will be followed by changes in eating, drinking and activity patterns (Juwita & Kartika, 2019). In addition, patients also experience psychological changes, such as depression, stress, anxiety, and frustration (Z. Rezaei et al., 2018).

Some of the changes experienced by hemodialysis patients require a process of resilience to survive and rise from these unexpected situations (Pradila et al., 2021). Resilience will help regulate emotions and heal trauma (Kukihara et al., 2020). Resilience experienced by hemodialysis patients at this time is still at low to moderate levels (Rokayah et al., 2019; Sumirta et al., 2016). Moderate resilience is dominated by middle-aged and secondary-educated male patients (Sumirta et al., 2016). Based on research results, low resilience and tends to decrease is caused by the thoughts of individuals who more often avoid problems, so that the problems they face are not resolved. (Rokayah et al., 2019). One factor that influence the achievement of a resilient condition is a factor that comes from within the individual himself.

Internal protective factors are factors that come from individual to support the resilient condition. In general, these internal protective factors include individual abilities such as self-esteem, self-efficacy, problem-solving skills, emotional regulation, and optimism (Kim & Lee, 2019). Regulating the patient's emotions and beliefs can help manage stress due to change (García-Martínez

et al., 2021). On the other hand, increased self-efficacy has a positive effect on health behavior, lifestyle, motivation to persevere in therapy and confidence in overcoming chronic illness (Pradnyaswari & Rustika, 2020). One of the internal factors with a low score is tenacity, so it will have an impact on reducing the resilience of hemodialysis patients (Rokayah et al., 2019).

Internal protective factors that affect the resilience of hemodialysis patients have been extensively studied in previous studies, but there is no review that specifically analyzes internal protective factors that affect resilience in hemodialysis patients. This review aims to identify internal protective factors that affect the resilience of hemodialysis patients. Internal protective factors are needed to increase an individual's capacity to cope with illness psychologically, act as a mediator between personal history and adaptation to chronic disease and are the main predictor of the quality of life of hemodialysis patients. This review will help health workers to improve and increase resilience starting from individual management first.

METHOD

This study is a scoping review using the Arksey and O'Malley analysis method (Westphaln et al., 2021) with the following steps:

Stage 1: Define research questions

This review begins by making a research question, namely "what are the internal protective factors that affect the resilience of hemodialysis patients? ". This question is structured with PEO elements, namely the population is hemodialysis patients, the exposure is internal protective factors, and the outcome is resilience.

Stage 2: Identify related articles

This scoping review was carried out by tracing articles from various databases, namely Science Direct, Scopus, Proquest, and PubMed. Articles were searched using the keywords "Factors" AND "Resilience" AND "Hemodialysis Patient".

Stage 3: Selection of articles

The selected articles focus on the resilience of adult hemodialysis patients. All articles published between 2019-2023. The articles included are full articles, in English, using qualitative, quantitative and mixed methods. The exclusion criteria are articles that are not open access and are individual reports.

Total articles obtained were 461 articles, then articles published within the last 5 years were 250 articles.

Then eliminate duplicate articles as many as 8 articles. Furthermore, eliminating articles that are not in English as much as 4 articles. Then the selection of articles which are original and open access articles was carried out, then 72 articles were obtained which were tested for feasibility. Seventy-two articles were tested for feasibility with exclusion criteria, namely not according to the title (n = 36), not carried out in the hemodialysis unit (n = 21) and the study design was not suitable (n = 5). After going through the selection process, 7 articles were obtained for review. The flow of searching and selecting articles using PRISMA can be seen in figure 1.

Stage 4: extracting and mapping data

The PRISMA model was chosen to select articles. Articles that met the requirements were extracted in several items in table 1 which consisted of author, year, title, setting, population, measuring instrument, method & statistical analysis and results .

Stage 5: summarizing, synthesizing and reporting

The extracted articles will present the results by linking the findings and research objectives. Next, create a discussion that is complemented by current trends and their benefits for future research, practice and policy.

Stage 6: discussion with competent parties

The author conducts discussions with authors 2 and 3 as *expert judgment* , so the results are obtained in accordance with the mutual agreement .

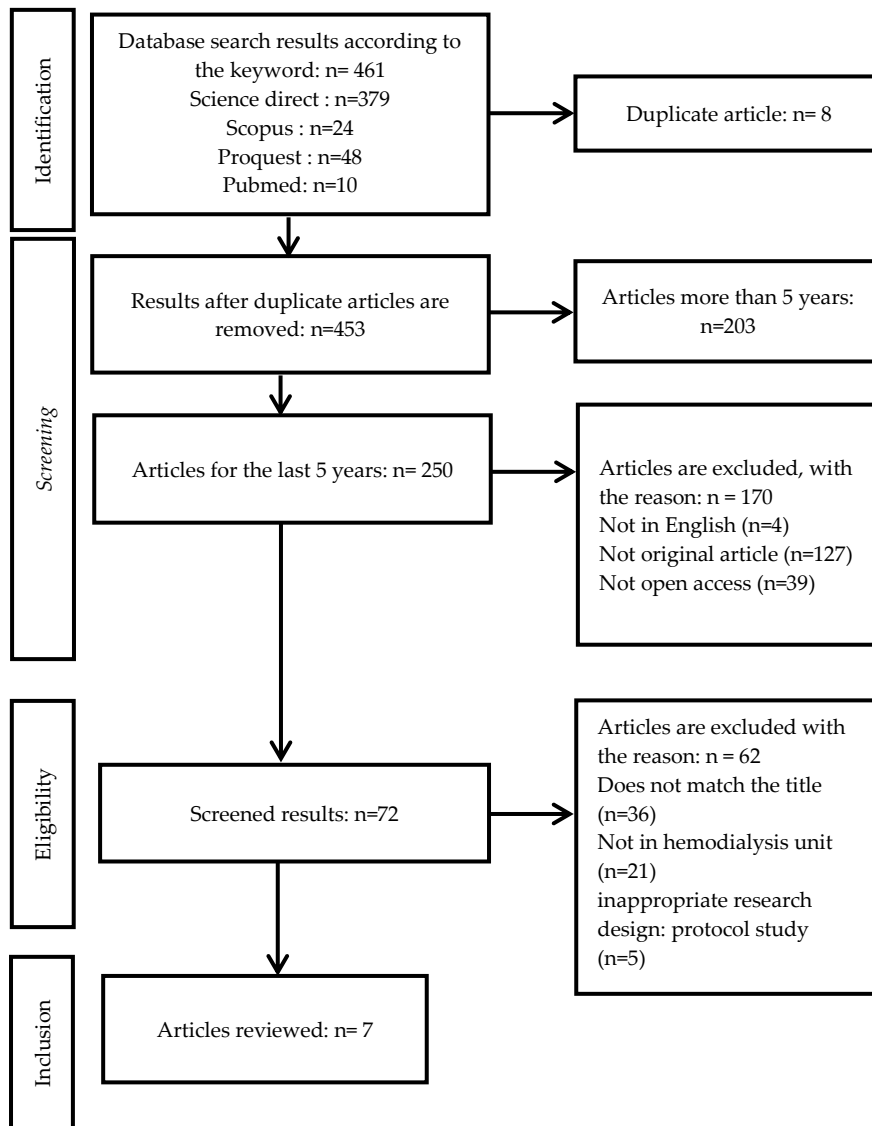


Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram (PRISMA)

RESULTS

Based on the 7 reviewed articles, the internal protective factors that affect the resilience of hemodialysis patients are as follows:

Ability to Regulate Emotions

There are many emotional changes felt by hemodialysis patients. Two articles found that the negative emotions of hemodialysis patients such as stress, anxiety, depression, and cognitive distortions affect resilience (González-Flores et al., 2021; Peng et al., 2022). Meanwhile, a positive correlation between good emotional regulation will create balanced mental health with resilience (Kukihara et al., 2020).

Optimism

Having hope, positive perceptions and followed by a positive outlook can help patients survive hemodialysis therapy which results in a change in role towards the patient (Lerma et al., 2019; Peng et al., 2022). According to Kim & Lee (2019) self-perception, discussing the meaning of life, and creating positive social relationships is one of the dimensions that determine the resilience of hemodialysis patients.

Self Esteem

Accepting the conditions and situations experienced can be part of self-esteem. This factor is characterized by having a positive coping mechanism to the changing situation experienced by hemodialysis patients (Kim & Lee, 2019).

Strength And Confidence

Strength and self-confidence are items that are considered in the resilience conditions of hemodialysis patients in the article by Lerma et al., (2019). The ability to solve problems can be part of the strength and confidence that helps hemodialysis patients survive the side effects of hemodialysis. One of the articles states that the ability to solve problems can also be categorized as a strength to achieve good resilience (Kim & Lee, 2019). The ability to self care also includes the strength to adapt the physical changes experienced by patients, so as to increase the resilience of hemodialysis patients (Izadi Avajji et al., 2021).

Spiritual Well Being

Spiritual well-being is one of the supporting factors for achieving a resilient condition. One article states that This condition is proven by the existence of a positive correlation between spiritual well-being and the resilience of hemodialysis patients (Duran et al., 2020). Good spirituality will be reflected in the ability to interact well with others.

Table 1. Extraction of Research Data

No	Author Year	Title	Instrument	Method
1.	Peng et al., (2022)	Chain Mediation Model of Perceived Stress, Resilience, and Social Support on Coping Styles of Chinese Patients on Hemodialysis During COVID-19 Pandemic Lockdown	<ul style="list-style-type: none"> • The Perceived Stress Scale • The Chinese version of the Simplified Coping Style Questionnaire • The Connor-Davidson Resilience Scale • The Social Support Rating Scale 	cross-sectional observational study
2.	Lerma et al., (2019)	Psychometric properties of the resilience scale in Mexican patients with chronic hemodialysis	<ul style="list-style-type: none"> • The Mexican questionnaire • Beck's Depression Inventory (BDI) • Beck's Anxiety Inventory (BAI) 	
3.	Kukiha ra et al., (2020)	The mediating effect of resilience between family functioning and mental well-being in hemodialysis patients in Japan: a cross-sectional design	<ul style="list-style-type: none"> • The General Health Questionnaire-12 • Conner-Davidson Resilience Scale • Family Assessment Device 	a cross-sectional design
4.	Kim & Lee, (2019)	How Do Patients on Hemodialysis Perceive and Overcome Hemodialysis?: Concept Development of the Resilience of Patients on Hemodialysis	Indeep interview	Qualitative
5.	Izadi Avanji et al.,(2021)	Self-Care and Its Predictive Factors in Hemodialysis Patients	<ul style="list-style-type: none"> • Self-care scale • Paloutzian-ellison spiritual well-being scale • Connor davidson resilience questionnaires 	multicenter correlational study
6.	González-Flores et al., (2021)	Resilience: A Protective Factor from Depression and Anxiety in Mexican Dialysis Patients	<ul style="list-style-type: none"> • Beck's depression and anxiety inventories • Kidney Disease Quality of Life Instrument (KDQOL 36 questionnaire) • cognitive distortion scale • Mexican scale of resilience 	
7.	Duran et al., (2020)	Association Between Spiritual Well-Being and Resilience Among Turkish Hemodialysis Patients	<ul style="list-style-type: none"> • Spiritual Well-Being Scale (SWBS) • Resilience Scale for Adults (RSA) 	cross-sectional study

Table 2. Extraction of Research Data Internal Protective Factors

No	Author Year	Title	Internal protective factor	Results
1.	Peng et al., (2022)	Chain Mediation Model of Perceived Stress, Resilience, and Social Support on Coping Styles of Chinese Patients on Hemodialysis During COVID-19 Pandemic Lockdown	<ul style="list-style-type: none"> • Regulate stress • Optimism • Hope 	<p>Perceived stress is negatively correlated with resilience ($r=-0.258$, $P<0.001$), Resilience ($r=0.631$, $P<0.001$) has a positive correlation with positive coping styles.</p> <p>Resilience is influenced by hope and optimism, few negative emotional experiences and having good views about the steps to prevent and control the COVID-19 pandemic.</p>
2.	Lerma et al., (2019)	Psychometric properties of the resilience scale in Mexican patients with chronic hemodialysis	Strength and confidence	<p>Psychometric properties that become a factor of resilience in this article are:</p> <p>Strength and confidence</p> <ul style="list-style-type: none"> • Proud of accomplishments • Trying to reach the goal • Be content with yourself. • Able to face new challenges • Find a solution • Know where to look for help • Have realistic plans for the future <p>Social competence</p> <ul style="list-style-type: none"> • Easily establish relationships with other people • feel comfortable with other people. • have good conversation topics • easily adapt to new situations.
3.	Kukiha ra et al., (2020)	The mediating effect of resilience between family functioning and mental well-being in hemodialysis patients in Japan: a cross-sectional design	Regulate emotion	Resilience significantly mediated the relationship between family functioning (adaptation and communication) and mental health well-being ($z = 2.14$, $p < .05$; $z = 2.74$, $p < .01$, respectively)
4.	Kim & Lee, (2019)	How Do Patients on Hemodialysis Perceive and Overcome Hemodialysis?: Concept Development of the Resilience of Patients on Hemodialysis	<ul style="list-style-type: none"> • Regulate emotion • Confidence • Self esteem 	<p>Three dimensions are found to build resilience:</p> <p>The first dimension: willingness to actively solve problems .</p> <p>The second dimension: Acceptance of the hemodialysis situation .</p> <p>The third dimension: positive perception, recognizing self-worth, discussing the meaning of life, and creating positive social relationships.</p>

				Indicators of resilience are adaptability, positivity, self-confidence, self-esteem, endurance (patience), firmness, relationship orientation, flexibility, communication, positive family relationships, loyalty, sincerity, planning, stability, and willingness to overcome crises.
5.	Izadi Avanji et al.,(2021)	Self-Care and Its Predictive Factors in Hemodialysis Patients	Self care	Self care was positively correlated with resilience in HD patients ($r= 0.8$, $P = 0.001$), indicating that self care increased with increasing resilience.
6.	González-Flores et al., (2021)	Resilience: A Protective Factor from Depression and Anxiety in Mexican Dialysis Patients	Regulate emotion	Negative emotional variables such as depression, anxiety, and cognitive distortions are directly correlated with resilience scores and quality of life which are positively correlated with each other.
7.	Duran et al., (2020)	Association Between Spiritual Well-Being and Resilience Among Turkish Hemodialysis Patients	Spiritual well being condition	There is a moderate positive correlation between spiritual well-being and resilience ($p < 0.01$). Education level, economic level, disease duration and spiritual well-being were determined to be statistically significant predictors of patient resilience ($p < 0.001$).

DISCUSSION

This review aims to determine the internal protective factors associated with the resilience of hemodialysis patients, some of the factors found from this article review are:

Ability to Regulate Emotions

The ability to regulate emotions in hemodialysis patients is still varied. Hemodialysis patients still have negative and positive emotions. The negative emotions found were stress, depression, anxiety and cognitive distortions. Stress in hemodialysis patients is inversely proportional to the level of resilience. This has similarities with Lu Peng's research (2022) which states that stress is negatively correlated with resilience. This research is supported by the research of Gonzales Flores (2021) where negative emotions are a protective factor that affects resilience. Indirectly stress will affect the coping of hemodialysis patients. The lower the stress, the higher the resilience and produce adaptive coping (Peng et al., 2022). Stress that causes depression will cause high cognitive distortions that cause symptoms of anxiety. This will result in the level of resilience in hemodialysis patients (González-Flores et al., 2021). Resilience is the key to adapting to stressful situations in chronic disease (García-Martínez et al., 2021).

Optimism

The next internal factor is optimism. Optimism in this review is illustrated by the patient's ability to have hope, have positive perceptions and have confidence in survival. This is in accordance with Abel Lerma's research (2019) which states that optimism and hope are aspects that are assessed to determine resilience. Supported by Lu Peng's research (2022) which states hope and optimism, and high positive perceptions will have a higher level of resilience. Hemodialysis patients with high resilience will have a plan in the steps to control their problem. Chronic kidney failure patients will get hope and optimism for the future because of the hemodialysis process and feel not much different from healthy people in general (Kim & Lee, 2019). Positive thinking can increase the expectations and adherence to treatment of hemodialysis patients by reducing hopelessness, emphasizing the positive aspects of the patient's life, and practicing strategies to accept reality and improve the patient's physical condition (Sabouri et al., 2023).

Self Esteem

The self-esteem aspect includes positive perceptions, consisting of recognizing self-esteem, discussions about the meaning of life, and the ability to relate positively to other humans. This is in accordance with the results of Eun Young Kim's research (2020) which explains that self-acceptance is a dimension for building resilience. This factor is characterized by having a positive coping mechanism to the changing situation experienced by hemodialysis patients. Having a sense of self-acceptance makes hemodialysis patients aware that hemodialysis is a part of the patient's routine and life. After acceptance, patients will feel and gather strength and confidence which will help them to establish good relationships with others (Kim et al., 2020). A sense of acceptance and self-esteem is positively related to a problem-oriented coping style. Thus, individuals who have a positive attitude towards their own condition will take constructive action in maintaining their health (L. Rezaei & Salehi, 2016).

Strength and Confidence

The ability to solve problems can be part of the strength and confidence that helps hemodialysis patients survive the side effects of hemodialysis. This is in accordance with Eun Young's research (2019) which states that strength and self-confidence are one of the psychometric attribute factors for the success of creating resilient conditions in hemodialysis patients. The ability to solve problems and self care can be part of the strength and confidence that helps hemodialysis patients survive the side

effects of hemodialysis to achieve good resilience (Izadi AvANJI et al., 2021; Kim & Lee, 2019). Strength and confidence will help patients to be proud of their achievements, strive to achieve goals, be able to face new challenges, have solutions, and have plans for the future (Lerma et al., 2019). Self care can be associated with independence and determination, where this aspect makes the patient understand about his life dependence with hemodialysis therapy. The existence of this selfcare has an effect on patient compliance undergoing hemodialysis (Kim et al., 2020) .

Spiritual Well Being

Spiritual well-being is one of the internal factors that can affect resilience. This is supported by Duran's research (2020) which states that there is a positive correlation between spiritual well-being and the resilience of hemodialysis patients. The same research results were also obtained by Sarijeh (2021) which stated that spiritual healing can increase the resilience of hemodialysis patients. Fulfilling the patient's spiritual needs can contribute to preventing mental disorders and improving the quality of life of patients with increase psychological resilience (Duran et al., 2020). Spirituality helps kidney disease patients overcome psychological problems, strengthens them and helps them deal with illness (Al-Ghabeesh et al., 2018).

CONCLUSION

Based on the results of the literature review, the internal factors that influence the resilience of hemodialysis patients are obtained from this review, namely the ability to regulate emotions, optimism, self-esteem, strength and self-confidence as well as spiritual well being. The results obtained can help nurses and patients to be able to create a resilient condition for hemodialysis patients. This research can be continued with the application of nursing interventions to improve the internal ability of hemodialysis patients to achieve a resilient condition.

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