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REVIEW

Instruments for Assessing Patient Independence in Self-Care: A Scoping Review

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Aim: Measuring patients' independence in caring for themselves is essential in nursing care, especially in the internal medicine room environment. Many patients with various conditions need help in self-care.

Objective: To identify the right instrument to measure patients' level of independence in performing self-care.

Methods: The scoping review uses the PICO framework through PubMed, Science Direct, and Scopus databases.

Results: Nine instruments/measuring tools can be used to measure the level of independence of patients in self-care, namely CDS, Barthel Index and MBI (Modified Barthel Index), SCHFI, ECOG, Self-care ability questionnaire, DCTAQ, and Revised Summary of Diabetes Self-Care.

Conclusion: Some instruments have various assessment methods and scores but can provide helpful information for health practitioners to assess patient independence. The instrument has been tested for validity and reliability in multiple studies. No instrument is absolutely the best, as each instrument has its advantages according to its context and purpose of use.

Keywords: measuring instruments, internal medicine, self-care, patient Independence level

Introduction

Patient independence in self-care is defined as the patient's ability to carry out daily activities independently without the help of others. These activities include eating, drinking, bathing, dressing, mobility, and elimination. Self-care is an essential basic human need to achieve and maintain health and prevent complications. The patient's ability to self-care independently (patient independence) is one of the indicators of nursing success. With the core elements of self-care maintenance, self-care monitoring, and self-care management.[1]

Orem elaborates on self-care as an essential, goal-oriented behaviour focusing on individual and environmental capacities.[2] This behaviour is organised so individuals can maintain life, enjoy health and well-being, and playing an active role in their own development means that individuals consciously and actively take steps to support their growth or recovery process, both in physical, mental, social, and emotional aspects. It shows the direct involvement of the individual in various activities or decisions that affect his or her well-being.[2] In the internal medicine treatment room, patients with various conditions need different assistance to meet their self-care needs. This assistance is not only physical but also includes education, emotional counseling, and supervision so that patients can improve their independence and prevent complications. This can be caused by physical weakness, pain, or cognitive decline.[3] Suboptimal self-care can increase the risk of complications and prolong the length of stay.[4] For example, in DM patients by not monitoring sugar levels regularly and not following the recommended diet will trigger serious complications such as diabetic ketoacidosis (DKA) or hypoglycemic coma. Therefore, it is essential to know patients' level of independence in self-care in the internal medicine treatment room. This knowledge can assist nurses in providing appropriate and targeted interventions to increase patient independence.[5] Internal medicine patient independence refers to the ability of patients suffering from chronic or acute diseases in internal organs (eg, heart, lungs, kidneys, liver) to carry out daily activities

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independently without assistance or with little help. This independence is crucial in determining patients' quality of life and can be influenced by various factors related to the patient's medical, physical, mental, and social conditions.[6]

In patients with internal diseases, the ability to be independent is often reduced due to health problems that cause physical limitations, fatigue, or decreased vital organ function.[7] Diseases such as heart failure, chronic kidney disease, chronic obstructive pulmonary disease (COPD), diabetes, and stroke are some examples that can affect a person's ability to perform self-care and daily activities.[8] Several factors affect a patient's level of independence, including age, type of disease, physical condition, mental status, and social support.[9] In elderly patients, for example, decreased physical and cognitive function often leads to dependence on others for self-care. Meanwhile, in patients with internal medicine disorders such as stroke, kidney disease, or heart failure, limited physical ability can be a significant obstacle to self-care activities.[10] Measuring the patient's level of independence in caring for themselves is a crucial initial stage in the nursing care process. This evaluation process makes an essential contribution to nurses in identifying patient needs, establishing appropriate nursing interventions, monitoring patient progress, and evaluating the effectiveness of nursing interventions. The patient's level of independence can be assessed by utilising measuring instruments or instruments. Valid and reliable measuring tools are essential for nurses to recognise patient needs carefully and objectively.[11]

Assessment of a patient's independence is usually carried out using special measuring tools, such as the Barthel Index, Instrumental Activities of Daily Living (IADL), or Katz Index, designed to evaluate the extent to which the patient can perform daily activities independently.[7,] The results of this assessment help develop hospital treatment plans and long-term care plans after patients are discharged from healthcare facilities.[7]

Independence in self-care is essential because it gives patients a sense of control and self-esteem. The more independent the patient is, the better their quality of life will be and the less dependent they will be on a nurse or family member. Independence also helps reduce the burden on the healthcare system and patients' families.[12]

More independent patients tend to be more physically and mentally active, which can help improve recovery and prevent further complications.[13] Therefore, improving the independence of internal medicine patients through proper assessment and appropriate interventions (such as physical therapy, education, and psychosocial support) is an essential goal in their care.

The level of independence in self-care is one of the critical indicators in determining the quality of life of patients and the success of the treatment program provided [14] Patients with chronic diseases or conditions that cause a decline in physical function may have difficulty caring for themselves.[15] Therefore, assessing patient independence is essential to developing a comprehensive treatment plan tailored to individual needs.

With proper assessment, healthcare professionals can provide appropriate interventions, such as rehabilitation programs, self-care training, or family support, to improve patient independence. Higher levels of autonomy improve patients' quality of life and reduce the burden of care on healthcare workers and patients' families.[16]

Therefore, this study aims to explore instruments for measuring patient independence in self-care in the internal medicine room.

Materials and Methods

Design

This study was designed using Arksey and O'Malley's scoping review framework. A scoping review is a methodological technique for exploring new, developed topics.[17] A scoping review aims to explore a topic and usually seeks to answer broad questions.[17] The researcher conducted a scoping review to assess the extent of available evidence to organise them into groups according to similarity.[18] Scoping reviews can also be used to conduct systematic reviews and meta-analyses. This research framework has a wide conceptual range, allowing it to explain various relevant studies.[19] The framework consists of five core stages: identifying research questions, identifying relevant study results, selecting a study, mapping data, compiling, summarising, and reporting results.[20]

This literature review used PRISMA Extension for Scoping Reviews (PRISMA-ScR). To identify the right instrument to measure the patient's level of independence in self-care (Figure 1). The research question in this study, the purpose is to find out the type of instrument to measure the level of independence of patients in carrying out self-care in the internal

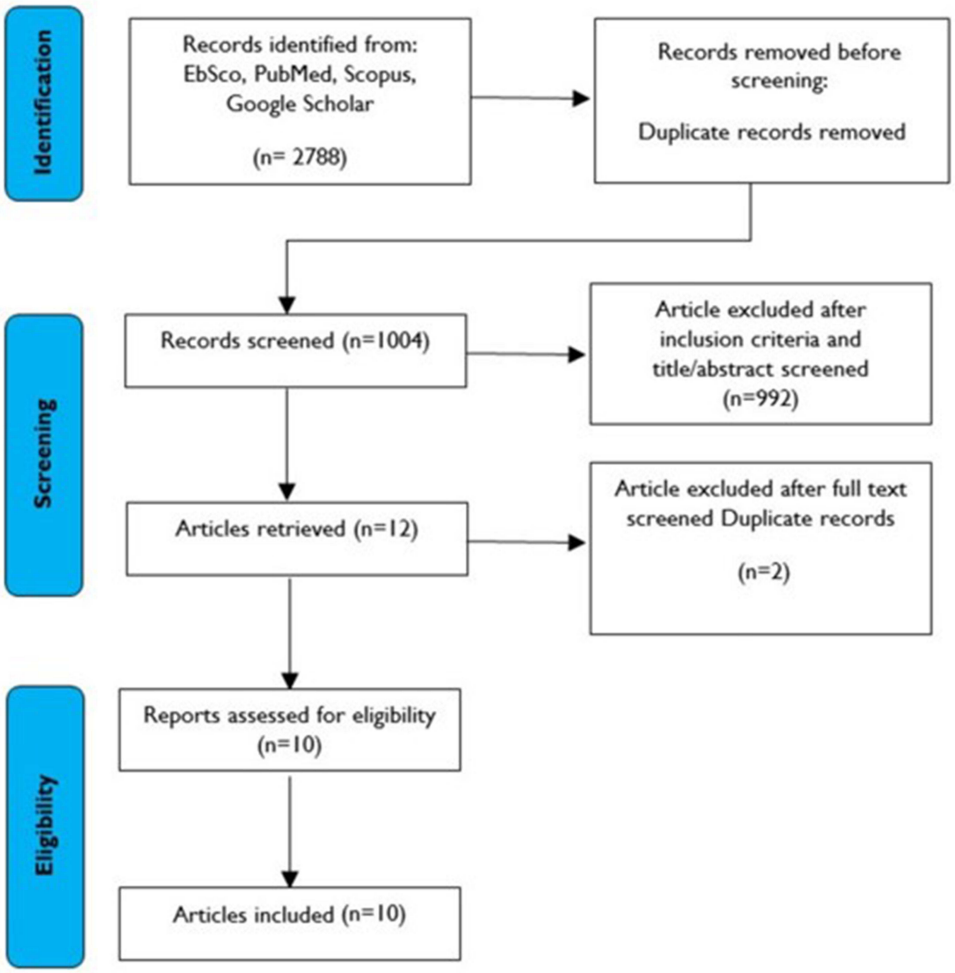

Figure 1 PRISMA flow diagram. Adapted from Tricco AC, Lillie E, Zarin W, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Annals of Internal Medicine.* 2018;169:467–473. Creative Commons.[19]

medicine room (origin of the research, research author, year of research, number of population and research sample, research design, research objectives, and article assessment).

Search Strategy and Eligibility Criteria

The source of this research article is national and international articles with predetermined themes. Searching for literature in the form of scoping reviews uses databases like PubMed, Science Direct, and Scopus; it also uses a search engine, namely Google Scholar. Journal searches were conducted using the keyword and boolean operator, namely "AND, OR NOT, or, AND NOT". The method tries to make it easier and more specific while discovering content. The keywords used are adjusted using Medical Subject Heading (MeSH). Mesh Term is an organised terminology that uses standard words for indexing through PubMed and other Medicine databases. Keywords will be identified using the PICO (Patients, Interventions, Comparison, Outcome) Grid for Search Strategy, as seen in Tables 1 and 2.

The sources considered in this scoping review are based on inclusion criteria, consisting of all quantitative and qualitative studies focusing on patient independence measures in self-care with internal medicine patients (without age limits). We limited the literature search period to the last 10 years (2014–2024), which are articles in English and Indonesian and available in full text. Meanwhile, the exclusion criteria in conducting a literature search are research with secondary data (review results), research with sample criteria outside internal medicine accompanied by complications, and research articles in Chinese, German, and Brazilian languages.

Table 1 Framework PICO

Population (P)	Internal medicine
Intervention (I)	Self-care
Comparison (C)	-
Outcome (O)	Patient's level of independence

Table 2 Key Concept and Mesh Term

	Concept 1	**Concept 2**	**Concept 3**
Key concept	Internal disease	Personal care	Patient independence
MeSH Term	• Internal Medicine • Inpatient Ward • Internal ward • Inpatient ward	• Self-care • Bathing • Dressing • Intimate care	• Independent tool • Independence tool • Activity in daily living • ADL

Data Collection

Researchers use the PRISMA Flow Diagram to identify appropriate articles. There are four stages of the PRISMA Flow Diagram ScR: identifying duplicate articles, filtering titles and abstracts, checking the availability of the full text, and filtering complete articles based on the methods and criteria set.

Literature data mapping analyses and collects literature tailored to the research topic. Then, it compiles and summarises selected articles by the scoping review and presents them in groupings in tables or descriptive formats.[19]

The format used in the article generally consists of general information, which includes the author, title, and year of research; the origin of the Research; the population and Sample; the design; the Research Instruments; the Research Objectives; the Research Results; and the factors affecting them.

Data Analysis

This scoping review stage is carried out by the framework of PICO (Population, Intervention, Comparison, Outcome)[19] The results will be reported in the form of data extraction tables and narratives in mapping for the preparation and conclusion of the results. The Patient Independence Level Measurement Tool in Self-Care with Internal Medicine Patients will be discussed.

Results

There are ten papers analyzed with the features of research articles published from Indonesia (n = 5) using Indonesian, Chinese (n = 2), Japan (n = 1), Swiss (n = 1), English (n = 1) using English. The samples used were patients with internal diseases (stroke, hypertension, DM, Spinal Cord Injury trauma and non-trauma, chronic heart failure, and Diabetic Kidney Diseases). From the search results, it was found that the tool to measure the level of patient independence, each instrument has its own characteristics and is specified for certain patient conditions, so it can be concluded that No instrument is absolutely the best, as each instrument has its advantages according to its context and purpose of use. This statement highlights that the tool for measuring the level of patient independence has unique advantages and limitations, depending on the patient's condition and the purpose of the measurement. This shows the importance of selecting instruments that are appropriate to the specific context, as no tool is universal or can be used optimally in all situations. Each instrument is designed to meet specific needs, so its use must be tailored to the characteristics of the patient, the environment, and the purpose of the evaluation. Table 3 shows the outcomes of the article's analysis.

Table 3 Results of Article Analysis

No	Article	Research Objectives	Population and Sample	Types of Research and Research Instruments	Result
1.	[21]	The aim of the research was twofold: 1) validity study, in which the concurrent validity of the PET-MBI (ADL performance) against the BI (ADL capacity) was examined by obtaining the ADL scores of these two measures in stroke patients.	30 Stroke patients	Using direct observation techniques (although this was within the same one-week period, raters evaluated BI in the rehabilitation room and MBI in daily situations outside the rehabilitation rooms.	The mean age of the 30 patients (23 men, seven women) was 71.9 (standard deviation 10.5) years. One patient had diplegia, 14 had right hemiplegia, and 15 had left hemiplegia. For the total scores obtained by direct evaluation, Pearson's and Spearman correlation coefficients of the BI versus the PET-MBI were both 0.95 (lower limit of the 95% CI, 0.90). The ICC representing inter-rater reliability for the first session was 0.99 (lower limit of the 95% CI, 0.98]. For intra-rater reliability, the mean value of the ICCs was 0.99 (range, 0.99–1.00). For individual tasks of the PET-MBI, inter-rater κw coefficients for the first session ranged from 0.77 to 0.94, with intra-rater κw coefficients from 0.85 to 0.96
2.	[22]	The current study aims to establish the equivalence of the total score of the FIM motor scale and the Barthel Index by applying the International Classification of Functioning, Disability, and Health and Rasch measurement theory.	A total of 2414 anonymous assessments were available across three diagnostic groups: stroke (n=644), spinal cord injury (SCI; n=534), and multiple sclerosis (MS; n=1236)	A psychometric study was conducted using secondary data analysis collected for routine healthcare in an extensive rehabilitation service in northern England.	Results: Items from both scales were linked to the International Classification of Functioning, Disability, and Health d4 Mobility or d5 Self-care chapters. Their co-calibration satisfied the assumptions of the Rasch model for each of the three diagnostic groups. A ceiling effect was observed for the Barthel Index when contrasted against the FIM™ motor scale.

(*Continued*)

Table 3 (Continued).

No	Article	Research Objectives	Population and Sample	Types of Research and Research Instruments	Result
3.	[23]	To find out the use of Spinal Cord Independence Measure (SCIM) III as a functional measure of Spinal Cord injury patients in Indonesia	Ten patients with Spinal Cord Injury trauma and non-trauma	Cross-sectional pilot project. SCIM version III consists of 19 key areas across three sub-scales, including self-care (6 items), respiratory and sphincter management (4 items), and mobility (9 items)	Based on the results of this study, it was found that the results of the 1st and 2nd SCIM measurements were not much different. Seven respondents were assessed equally by the 1st and 2nd assessors, and three were assessed differently, with a score difference of 2 points. The SCIM score is 0–100. This shows that although the results are not precisely the same, the SCIM questionnaire is objective and reliable, so that can be used as a tool to measure the functional ability of SCI (Spinal cord injury) patients
4	[12]	The study aimed to determine the relationship between self-management and the level of independence in hospitals for post-stroke patients.	The research population is 60 respondents. Purposive sampling was obtained with a sample of 52 respondents.	Cross-sectional. The Self-management measurement tool uses the SQM (The Southampton Stroke Self-Management Questionnaire) questionnaire and the level of independence of Activity Daily Living (ADL) using the Barthel Index, carried out directly in each respondent's home.	The study results showed that most respondents (82.7%) had excellent self-management status, and most (88.5%) had independence in the independent category. Data analysed with Rank Spearmen showed a p-value of 0.000, meaning there was a relationship between self-management and the level of autonomy in post-stroke patients. Influencing factors include age, number of attacks, limb function, and assistance at the hospital and work. Post-stroke patients can apply good Self-management by adapting to sequelae, practising self-activity, and controlling emotions during activities.

(*Continued*)

Table 3 (Continued).

No	Article	Research Objectives	Population and Sample	Types of Research and Research Instruments	Result
5.	[24]	Purpose: Develop a ROM physical exercise model to improve the independence of post-stroke patients in ADL fulfilment.	This study focuses on post-stroke patients at Stella Maris Hospital Makassar, which has 18 post-stroke patients.	Quantitative research uses a quasi-experimental approach with the one-group pre-and post-test design method. Independence assessment in ADL fulfilment using the Barthel Index was carried out before and after the ROM intervention.	The result showed an effect of the ROM physical exercise model on the independence of post-stroke patients (p=0.000). The average independence of respondents increased after being given ROM physical exercise (44.4 ±22.2 to 59.4±16.1). Conclusion: ROM physical exercise models can improve the autonomy of post-stroke patients in the functional fulfilment of daily activities.
6.	[25]	To assess the characteristics of the Indonesian version of the Care Dependency Scale (CDS) Psychometric in patients who have had a stroke.	109 Stroke inpatients	Test the validity and reliability of CDS instruments and correlation tests. Instruments: CDS and Barthel Index	According to reliability analysis, the CDS results in both inpatient and outpatient wards showed high internal consistency, with a Cronbach α coefficient of 0.98, respectively. The CDS and Barthel Index results show a significant and moderate correlation. CDS can be recommended as a tool to assess stroke patients receiving long-term or acute care.
7	[26]	To identify gender differences in self-care in chronic heart failure patients using the Information-Motivation-Behavioral Skills model	210 patients with chronic heart failure	Cross-sectional study Instrument: Self-Care of Heart Failure Index (SCHFI), questionnaire of heart failure knowledge, the Perceived Social Support Scale, and Revised Illness Perception	The average score for self-care maintenance was 51.4 ± 14.8 in men and 55.6 ± 14.1 in women ($t = -2.066$, $P<0.05$), where the factors related to self-care maintenance were social support and self-care confidence in men while in women were knowledge about heart failure, self-care management, and self-care confidence.

(*Continued*)

Table 3 (Continued).

No	Article	Research Objectives	Population and Sample	Types of Research and Research Instruments	Result
8	[27]	The aim is to analyse the predictors of PPG levels in the elderly with diabetes mellitus, which consist of functional status, self-care activities, sleep quality, and stress levels, especially in the elderly with diabetes mellitus living in the city.	Population: 250 older adults at the Mulyorejo Health Center. Sample: 45 elderly (selected by purposive sampling)	Cross-sectional design Instrument/ Measuring instrument: ECOG performance status by Eastern Cooperative Oncology Group.	Functional status, self-care activities, sleep quality, and stress levels were not significantly correlated with PPG levels in the diabetic elderly ($p=0.245$, $p=0.776$, $p=0.937$, and $p=0.349$, respectively). Therefore, these four variables could not be predictors of PPG levels.
9	[28]	The study evaluated the outcomes of stroke patients undergoing thrombectomy, including activities of daily living, quality of life, and mortality rates. It also aimed to compare the outcomes of the intervention group with the control group and highlight the importance of rehabilitation training, advances in medical technology, and management strategies to improve patient outcomes.	Population: 431 ischemic stroke patients undergoing thrombectomy my (N= 188 control group, N= 251 intervention group) Sample: 285 ischemic stroke patients undergoing thrombectomy my (N= 124 control group, N= 161 intervention group)	Non-randomized, pre- and post-historical controlled clinical trial Measuring instrument/instrument: • EQ-5D to evaluate the quality of life of stroke patients • The National Institutes of Health Stroke Scale (NIHSS) • To assess the severity of stroke in patients. The Modified Barthel Index (MBI) to measure the level of ability to perform daily activities	Interventions of the nurse-led rapid rehabilitation model in ischemic stroke patients after undergoing thrombectomy have had a positive impact. Patients who received rapid rehabilitation showed improvements in shorter hospital durations, lower hospital costs, better quality of life, decreased levels of anxiety/depression, and improved neurological function compared to the control group.
10	[29]	To evaluate the impact of the Multidisciplinary Self-care Management Program (MSMP) on quality of life, self-care behaviour, adherence to antihypertensive treatment, glycemic control, and kidney function in	Population of patients with two chronic conditions, namely diabetes and kidney disease. Sample: 40 adult participants with kidney disease in patients undergoing outpatient treatment, both in government and private.	Cross-over Instrument: • Quality of life is measured using an Audit of Diabetes-Dependent Quality of Life scale • Self-Care Behavior Uses a Revised Summary of Diabetes Self-Care Activity Adherence to antihypertensive therapy using the Medication Events Monitoring System • Glycated haemoglobin levels measure blood sugar control • Kidney function with serum creatinine	The results of this study will highlight the importance of multidisciplinary care with self-care management as the primary goal to ensure an individualised, collaborative approach in which the patient plays a leading role.

Discussion

This scoping review aims to find an instrument/measuring tool for patient independence in the internal medicine room when performing self-care. The article search results were obtained from ten articles that discussed or used patient independence instruments in carrying out treatment. Based on the article received, nine instruments were found to measure patient independence in self-care in the internal medicine room. Some patients are grouped into internal diseases such as stroke, cancer, heart failure, diabetes, kidney failure, and others.

Care Dependency Scale (CDS)

The Care Dependency Scale (CDS) is a care dependency scale instrument. CDS can be recommended as a tool for assessing and evaluating stroke patients receiving acute or long-term care. CDS has been internationally tested and developed based on Virginia Henderson's nursing theory, which includes the physical aspects and psychosocial aspects used to measure care dependence.[30]

The CDS instrument contains 15 items and is available in various languages, one of which is the Indonesian version of the CDS; furthermore, for filling out CDS instruments, a 5-point Likert scale is used so that it does not take much time to complete. A low score on the item indicates that the patient is entirely dependent on treatment, while a high score indicates that the patient is barely dependent on treatment. In the Indonesian version of CDS, a score of 15–24 is interpreted as entirely reliant on treatment; 25–44, primarily dependent on treatment; 45–59, partly reliant on treatment; 60–69, to some extent depending on the treatment; and 70–75, almost non-dependent on maintenance.

CDS can be used to assess how patients can meet their personal needs. The assessment can provide helpful information for stroke patients with limitations in meeting their needs, where the same instruments are used in inpatient and outpatient care. CDS can help differentiate between physical and psychosocial needs so that care can be tailored to the patient's needs.[31]

Indeks Barthel (BI)

The Barthel Index (BI) is an instrument that can be used to measure the ability of patients to carry out personal activities necessary in daily life (ADL). BI instruments contain ten items: feeding, bathing, dressing, bladder, toileting, transfer, and mobility. And mobility. The score on BI ranges from 0 to 100, with patients categorised by scale from entirely dependent to independent. For a score of 0–20, it is classified as having complete dependence; 25–40, categorised as heavy dependence; 45–55, moderate dependence; 60–95, mild dependence; and 100 on independence.[32]

The study's results showed that stroke patients tested in inpatient and outpatient wards produced the same Cronbach coefficient of 0.98, both for inpatient data and with outpatient care, observed between the results of CDS and Barthel Index.

MBI (Modified Barthel Index)

The modified Barthel index (BMI) is the most commonly used scale to evaluate the ability to engage in activities of daily living. MBI is given to ischemic stroke patients whose purpose is to assess the patient's quality of self-care.[33] MBI has the same items as the original BI. However, the original 3-point rating system was changed to a 5-point system to improve sensitivity developed by Shah et al, with a 100-point scoring scale of the patient's ability to perform ten types of ADL. The MBI's total score ranges from 0 to 100; the highest score (100 points) reflects the ability to be dependable or perform basic ADL independently.[34]

Self-Care of Heart Failure Index (SCHFI)

The Self-Care of Heart Failure Index, or SCHFI, is an instrument or measuring tool to assess the self-care of HF patients or heart failure. SCHFI is a measuring instrument used explicitly for patients with heart failure. Self-care is one of the essential aspects of heart failure management. Lack of commitment to self-care behaviour is one of the leading causes of readmission of heart failure patients, higher complications, and mortality.[5] This questionnaire is based on the theory of self-treatment of medium-term chronic diseases. This theory discusses how health improvement practices shape the process of maintaining health.[35]

This instrument is a natural decision-making process involving self-care maintenance, symptom perception, and self-care management. SCHFI has been published since 2004 and has gone through the stages of revision and renewal; the latest SCHFI instrument is SCHFI version 7.2.[35]

SCHFI Revision uses the Likert option to respond. Each domain has a different number of items. The health maintenance domain includes ten items measured on a scale from 1 (never) to 5. The symptom perception domain consists of 9 items on a scale of 0, not to recognise symptoms up to 5 and to recognise symptoms quickly. The self-care management domain consists of 8 items measured on a scale of 1 to 5.[36]

In addition, SCHFI version 7.2 has been translated into many languages, including Indonesian. SCHFI version 7.2 has differences from previous versions. In SCHFI version 7.2, there are four scales: self-maintenance, symptom perception, self-care management, and self-efficacy. SCHFI 7.2 has been tested for validity and reliability with an estimated reliability result of 0.70 or more. The predictive validity supports the fact that there is a significant correlation between health-related quality of life scores and SCHFI scores. It can be concluded that the reliability and validity of SCHFI v7.2 have been supported in several countries.[35]

Self-Care Ability Questionnaire Dan Kuesioner Model Teori Orem

Research conducted by[37] two instruments were used to measure self-care ability: the Self-Care Ability Questionnaire and the conceptual pattern of the Orem Questionnaire. The Self-Care Ability Questionnaire contains 40 items and is given a Likert scale score of 6 points, with 1 for strongly agreeing and 6 for strongly disagreeing. The minimum score is 40, interpreted as a more desirable status of self-ability, and the maximum score of 240 is interpreted as poor and inadequate self-care ability. Scores can be interpreted as follows: good (40–58), medium (59–89), poor (90–160), and very poor (>162).[38] The Orem Questionnaire: the four parts consist of general health factors, such as age, gender, marital status, education level, housing status, employment status, income, and family member support. The second part covers general self-care needs, such as air, water, food, defecation, activity and rest, socio-cultural interactions, health care systems, family systems, lifestyle patterns, and the environment.

Several studies have proven that the Orem instrument and the Self-Care Ability Questionnaire can be used effectively. Implementing the Orem self-care framework is one way to improve the knowledge, skills, and ability to care for colorectal cancer patients and patients with migraine complaints. Improving the care of these patients is recommended as a nursing intervention.[39] Meanwhile, the Self-Care Ability Questionnaire has psychometric properties that are good for older people.[40]

DCTAQ + AsyMs

The Daily Chemotherapy Toxicity Self-Assessment Questionnaire (DCTAQ) is a questionnaire that assesses ten symptoms (nausea, vomiting, diarrhoea, constipation, mucositis, paresthesia, hand/foot pain, flu/infection-like symptoms, fatigue, pain) symptom data is automatically evaluated in the ASyMS Advanced Symptom Management System for symptom intervention alerts.

Patients complete DCTAQ every day and whenever they feel unwell. “Real-time” information is sent over a secure connection to an ASyMS server hosted by Docobo.[41] Symptom data automatically evaluated in ASyMS results in two types of alerts for hospital doctors: Yellow (for mild-moderate symptoms that are persistent so that early intervention can prevent their progression with a response time of 8 hours) and Red (for chemotherapy emergencies such as sepsis neutropenia with a response time of 30 minutes). Doctors receive alerts on particular handsets; doctors must review the patient’s symptom report on the ASyMS webpage on red alerts and contact the patient for further review. Even if a report is required, the doctor can contact the patient for yellow alerts.

ASyMS has a positive impact on patient outcomes during chemotherapy, including reducing anxiety and Digital solutions for remote monitoring. ASyMS will reduce symptom burden, need for supportive care, anxiety, and work limitations, as well as improve health-related quality of life and self-care/self-efficacy during chemotherapy treatment in patients.[41]

Revised Summary of Diabetes Self-Care

The Summary of Diabetes Self-Care is a self-reported questionnaire that assesses the frequency of diabetes self-care shown in the previous seven days. The original SDSCA questionnaire consisted of 25 items in the diabetes regimen, ie, general diet, special diet, exercise, blood glucose test, foot care, and smoking.

In a study conducted in the early 1990s, Toobert al. (2000) compiled the first diet item: "Over the past 7 days, how often have you followed the recommended diet?" In a more recent study, Deborah et al have changed from a recommended "diet" to a recommended "meal plan". All response formats were converted to percentages for more standardisation in the seven studies. For example, a 5-point scale, with an anchor of 1 = never until 5 = always, is changed to percentages as follows: 1 = 0, 2 = 25, 3 = 50, 4 = 75, and 5 = 100%.

Respondents rated their adherence to self-care activities in the past week, ranging from 0 to 7 days. SDSCA has been shown to have good psychometric properties, with acceptable correlation between items (mean = 0.47), moderate correlation of retests (mean = 0.40), and low correlation between five dimensions (mean r = 0.23).[29]

Limitations

This study contains weaknesses that may lead to bias against the research issue. Just three databases and one authoring tool were employed, with no article quality evaluation tool, resulting in probable inaccuracy in content assessment of quality, inability to read certain lengthy publications, and restricted reference to English and Indonesian.

Conclusion

This study aims to find an effective instrument to assess patient independence in the internal medicine room. Of the ten articles, nine instruments to measure patient independence can be used for various disease conditions such as stroke, cancer, heart failure, and diabetes. Some of the instruments found include the Care Dependency Scale (CDS), Barthel Index (BI), Modified Barthel Index (MBI), Self-Care of Heart Failure Index (SCHFI), Eastern Cooperative Oncology Group (ECOG), Self-Care Ability Questionnaire, Orem Theory Model Questionnaire, Daily Chemotherapy Toxicity Self-Assessment Questionnaire (DCTAQ) + AsyMs, and SMART-HF. No instrument is absolutely the best, as each instrument has its advantages according to its context and purpose of use.

The instrument has various assessment methods and scores but can provide helpful information for health practitioners to assess patient independence. Multiple studies have tested the instrument for validity and reliability. In chronic diseases such as heart failure and diabetes, it was found that technology-based interventions such as home-based devices (mHealth) can improve patients' self-care behaviour and reduce disease-related hospitalisations.

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Disclosure

The authors declare that there are no conflicts of interest in this study.

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