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Understanding self-management in teaching and learning: A concept analysis for nursing education

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ABSTRACT

Background: The concept of self-management has been examined in healthcare and other sectors such as education, but its definition and uses in nursing education remain unclear.
Aim: To explore the concept 'self-management' in healthcare and teaching and learning literature and apply these insights to nursing education.
Design: Concept analysis.
Methods: The eight steps of concept analysis according to Walker and Avant were used. PubMed, EBSCOhost, Medline, Google Scholar, Science Direct and PsycINFO were searched up to 2022 with an updated search in 2024. Content-rich articles on self-management were included if they: (a) discussed the theoretical or conceptual foundation of self-management, (b) were healthcare or education related, (c) were written in English and (d) had the full-text available. Data on attributes, antecedents and consequences were extracted and analysed using thematic analysis.
Results: Thirty-three articles were included with nine attributes, categorised as personal (self-motivation, self-regulation, self-evaluation, self-efficacy, individual action and skills, self-monitoring, environmental management, continuous task) and combined (partnership). Antecedents were the individual capacity to learn, external motivation, access to learning resources, teaching and learning strategies, and support from educators, family and friends. Consequences were improved quality of life, enhanced coping abilities, empowerment, engagement in self-management behaviours, increased self-efficacy, self-control, satisfaction, independence, self-directedness, and accountability. Negative outcomes may arise from avoiding help due to overconfidence in self-management abilities.
Conclusion: In combining all nine attributes, a clear definition and understanding of self-management in the teaching and learning context are formulated which can assist nursing students in becoming effective self-managers.

1. Introduction

The concept of self-management has its roots in the fields of psychology and behavioural sciences, emerging in the mid-20th century from self-regulation theories (Lorig & Holman, 2003). Corbin and Straus (1985) related the concept to the 'work' patients living with a chronic illness have to do at home. In the early 2000, the concept was adopted in the educational environment by scholars such as Dembo (Dembo & Seli, 2011) due to the growing recognition of the role of self-regulation in academic success. This shift was influenced by research in cognitive and educational psychology, which highlighted that students who actively regulate their learning processes perform better than those who rely solely on external instruction. The increasing focus on lifelong learning and student-centered education further supported the integration of self-management principles into academic settings (Lazcano et al., 2022; Wiyono & Kholidya, 2018). Nurses like Kate Lorig applied it in the field of health sciences and education for patients living with chronic diseases, emphasizing patient-centeredness and empowerment (Lorig & Holman, 2003). The concept, therefore, has a rich history rooted in behavioural science, education and the health sciences; yet, its

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application in the context of nursing education is not well described in the literature.

Self-management in the education environment involves the setting of pragmatic aims and objectives, applying problem-solving skills, managing stress and being able to recognise when to seek help to improve academic performance (Dembo & Seli, 2011). Self-management is also an important life skill required in work environments. The skills and abilities of self-management in the teaching and learning context may thus transcend the education environment as students apply them in their work situations after completion of tertiary education (Wiyono & Kholidya, 2018; Kadiyono & Hafiar, 2018).

The concept of self-management in the teaching and learning context thus goes beyond a student merely managing time and workload and conforming with assessment guidelines and deadlines (Olorunfemi-Olabisi & Akomolafe, 2013). It requires improving emotional intelligence and resilience, maintaining motivation, stress management, self-doubt and challenging conditions, and involves ongoing personal and professional development (Dembo & Seli, 2011).

The importance of self-management in nursing education is emphasised by the reported alarming levels of students' emotional stress and poor academic performance (Duprez et al., 2017). Nursing students are more likely to independently self-manage if their basic psychological needs for independence, capabilities and relatedness are fulfilled (Duprez et al., 2017). One way to support academic success and simultaneously ensure the well-being of students is to enhance their self-management skills. Students with high self-management skills achieve academic success (Kadiyono & Hafiar, 2018).

There are other well-known concepts such as self-directed learning that are often used in nursing education (Gu & Sok, 2021; Shirazi et al., 2021), but the concept of self-management in the teaching and learning context is not clearly defined in the nursing literature. The application of self-management in nursing education has not yet been explored. Self-management may be particularly valuable in the context of the health professions such as nursing, as compared to other related terms such as self-regulated learning, due to its roots in health care and the ecological systems approach to self-management (Ryan & Sawin, 2009). Moreover, the concept's philosophical underpinnings in person-centred care resonate strongly with nursing's core values, further supporting its relevance and potential impact in this field. There is a plethora of literature on self-management in the context of health care, with evidence indicating the benefits of self-management support on the behavioural and health outcomes of young people living with chronic conditions (De Lange-Cloete, 2022; Sattoe et al., 2015).

The concept of self-management remains unclear in terms of its definition and application within nursing education. As such, there is a clear need to clarify its meaning and relevance in this field. Drawing on health literature can help identify the various antecedents, including individual, social, cultural, and environmental factors, as well as the attributes and consequences of self-management. These insights could provide valuable perspectives and offer transferable applications for nursing education, enhancing its integration into teaching and learning practices. Self-management is essential in nursing education, influencing academic success and professional readiness (Lazcano et al., 2022; Duprez et al., 2017). Its integration in curricula not only supports adaptability, critical reasoning, and lifelong learning, but also informs pedagogical strategies that foster autonomy, reflection, and problem-solving (Lazcano et al., 2022). Embedding self-management skills into teaching and assessment enhances educational outcomes, equips students for complex clinical challenges, and provides a practical framework for curriculum design that promotes resilience and self-directed learning.

2. Objective

The main objective of the study is to explore the concept 'self-management' in healthcare and teaching and learning literature and apply these insights to nursing education. Specifically, the study sought to identify the attributes, antecedents and consequences of self-management in the context of teaching and learning. In addition, to identify a model case and empirical referents to illustrate and refine the application of self-management in the context of teaching and learning in nursing.

3. Methods

3.1. Design

Concept analysis using Walker and Avant approach (2014) was employed using the following eight steps: (1) Select the concept to be analysed, (2) determine the aim or purpose of the analysis, (3) identify all uses of the concept that you can discover, (4) determine the defining attributes of the concept, (5) identify a model case, (6) identify borderline, related, contrary, invented, and illegitimate cases, (7) identify the antecedents and consequences of the concept and (8) define empirical referents. Although the steps are provided in sequence, the steps were made flexible as and when meaningful, as explained in detail in the results and discussion.

3.2. Concept analysis process

3.2.1. Step 1: Selecting a concept

The concept of self-management was chosen because it has become a contemporary focus in nursing education and health care (Kadiyono & Hafiar, 2018). Learning in the higher education setting requires skills such as self-management to ensure academic success (Dembo & Seli, 2011). Self-management and self-management support are acknowledged worldwide in the health care context (Duprez et al., 2016; WHO, 2015); however, a lack of clarity with regard to this concept in the context of teaching and learning was identified.

3.2.2. Step 2: Determining the aim of analysis

Concept analysis design was used to develop conceptual clarity and remove conceptual confusion and ambiguities related to self-management in the teaching and learning context, specifically, in nursing education. This was done to explore the concept 'self-management' as put forth in scientific literature, both in health care and in teaching and learning.

3.2.3. Step 3: Identifying all possible uses of the concept of self-management

Self-management has been applied in various contexts such as primary and secondary education and other educational sectors, as well as the health care sector. Preliminary definitions of self-management were identified in the context of health and education. The word "self-management" as used in the context of chronic illness means being able to establish and work toward personal and health objectives with no major deviation (Modi et al., 2012). Self-management in teaching and learning is defined as abilities, skills and behaviours that students engage in (individually or in collaboration with nurse educators and clinical tutors) that will contribute to their ability to navigate academic expectations meaningfully (Wiyono & Kholidya, 2018). Although the term "self-management" is used in other fields (e.g., organisational studies, psychology, behaviour change), this analysis prioritises the uses of the concept within health and education because these are directly applicable to the target population and the aims of the study. These contextual uses therefore guide the subsequent identification of defining attributes.

3.3. Search strategy

Articles published in English were retrieved with assistance from two librarians (information specialists) at (name removes) University. The librarians assisted with building the search strings for the various

databases and retrieving the articles. Articles were selected through online databases such as PubMed, EBSCOhost, Medline, Google Scholar, Science Direct and PsycINFO. Articles published up to April 2022 were included. An additional search conducted in October 2024 aimed to identify relevant articles published after 2022. The literature search was limited to the use of the concept in higher education or nursing or nursing education, or healthcare. The keywords and related search terms (MESH terms) that were used in searching the articles can be found in the online supplementary file (Supplementary file X).

3.4. Selection and data extraction

Inclusion criteria were applied in selecting content-rich articles that were meaningful to delineate the concept. The first author (MK) conducted the screening of titles, abstracts, and full texts, discussing any uncertainties with TC. Articles were included if they: (a) discussed the theoretical or conceptual foundation of self-management, (b) were related to healthcare or education, (c) were written in English, and (d) had full-text access available. Articles were excluded if they did not specifically focus on self-management.

The PRISMA diagram (Fig. 1) illustrates the literature search and selection process, showing the number of articles at each stage. The article database was managed using Mendeley and Google Drive. Data was extracted in a table indicating the year, authors, country, study aim, study design, context, definition of self-management, attributes, antecedents and consequences. Data extraction was done by MK and validated by TC.

Through the data extraction process, additional articles were identified by screening the reference lists of articles and purposive sampling was conducted on articles known to the research team. The search process for articles was completed after data saturation was achieved, i.e., the new articles did not yield additional information. The co-authors (TC, AvdM and CY) confirmed that data saturation was reached and critically reviewed the process until consensus was reached that the attributes, antecedents and consequences were adequately interpreted.

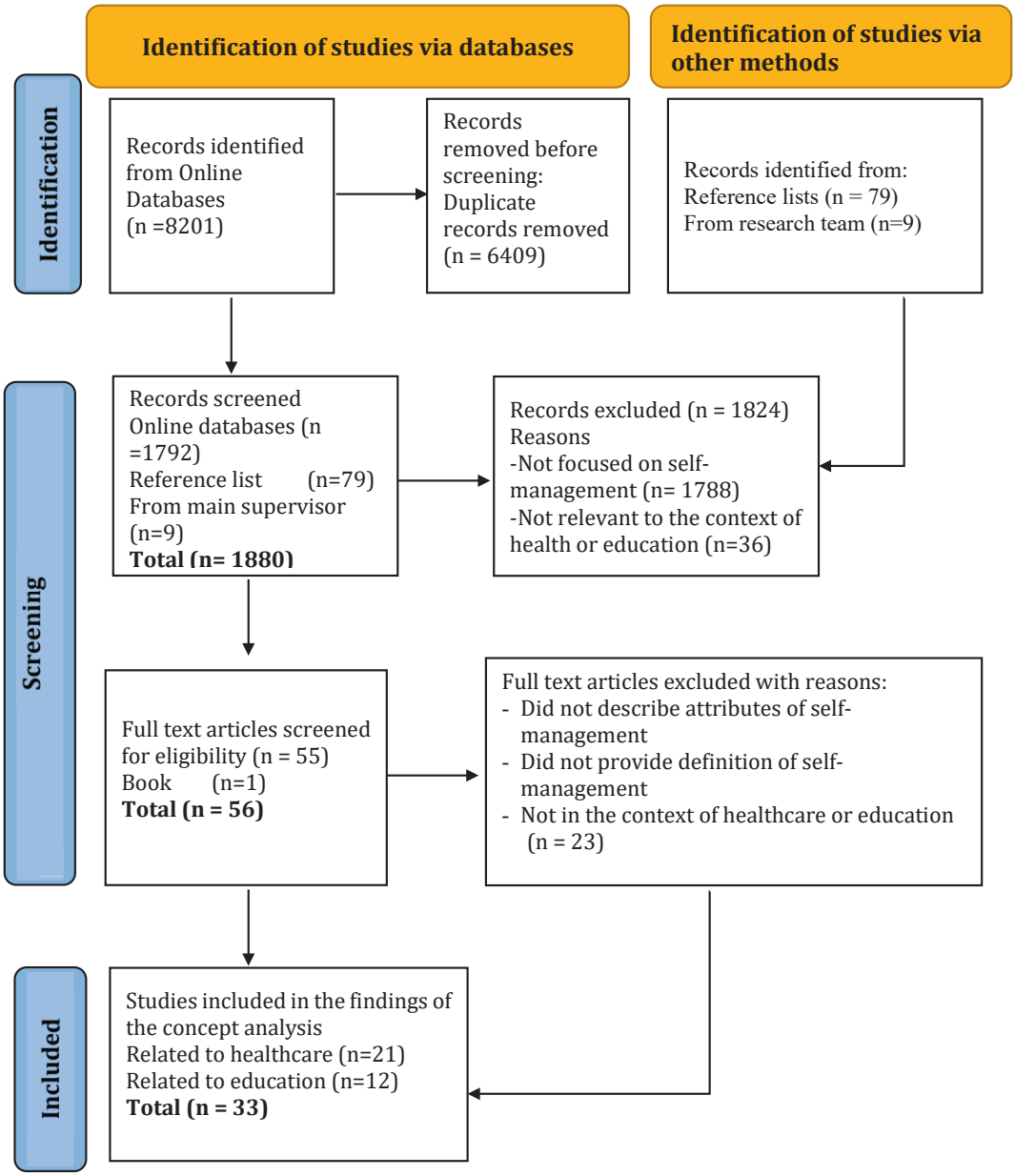

Fig. 1. Prism flow diagram showing how the final inclusion articles were obtained.

3.5. Data analysis

Thematic analysis (Braun & Clarke, 2006) was used to find the defining attributes, antecedents and consequences. This included: (a) reading the carefully chosen articles, (b) finding the features assigned to self-management, (c) coding recurring features, (d) grouping and categorising these codes (e) deliberating the characteristics and principal categories with the research team, and (f) using attributes as a name to replace categories (Walker & Avant, 2014). Attributes, antecedents and consequences of self-management in the healthcare and education contexts were coded and categorised separately and attributes that cut across both contexts were identified. A model case was developed by reflecting and describing a fictitious nursing student who exhibited all nine concept attributes in a teaching and learning context.

3.6. Rigour

Rigour was ensured by conducting a structured review of literature across healthcare and education, following the steps of Walker and Avant's concept analysis. All three authors contributed to the identification and synthesis of attributes and definitions, reducing individual bias and ensuring that the findings reflected consistent patterns across the literature.

3.7. Ethical considerations

This study is part of a larger study for which ethics approval by the Health Research Ethics Committee, (name removed) University, with HREC Reference No: S20/08/210 (PhD) was obtained. All reviewed articles were properly cited and referenced, with data closely monitored to ensure accurate attribution during paraphrasing. The classification of findings into attributes, antecedents, and consequences was carefully deliberated and presented as a consensual outcome among the authors.

3.8. List of operational definitions

Nurse educator: a nurse academic who teaches in the Nursing Training Colleges (Nursing and Midwifery Council (NMC), Ghana, 2021). These nurse educators are usually called nursing tutors or tutors or Health tutors by nursing students or by the Ministry of Health (MOH) or by the Health Training Institutions (HTI's) in Ghana.

Nursing students: students enrolled in the nursing training colleges offering Registered General Nursing Program (diploma in nursing) (Nursing and Midwifery Council (NMC), Ghana, 2021).

Self-management in teaching and learning: Abilities, skills and behaviours that nursing students engage in (individually or in collaboration with nurse educators and clinical tutors) that will contribute to their ability to navigate academic expectations meaningfully (Wiyono & Kholidya, 2018).

Self-management in the context of healthcare: In the context of health care, self-management refers to the individual's ability to actively manage the symptoms, treatment, physical and psychological consequences, and lifestyle changes that come with living with a chronic illness or health condition (Van de Velde et al., 2019).

4. Results

4.1. Included studies

A total of 8201 articles were initially obtained from online databases. After removing duplicates, 1792 articles remained. An additional 79 records were sourced from reference lists and nine from the research team. After screening 1880 abstracts for relevance, 1824 were excluded for not relating to self-management or the healthcare/education context. Fifty-six full-text articles and books were assessed for eligibility, with 23 excluded for not meeting the inclusion criteria. Finally, 33 articles were included in the analysis, 12 related to teaching and learning and 21 to healthcare. The articles were published between 1997 and 2020. The PRISMA diagram (Fig. 1) shows how the final inclusion articles were obtained and Table 1 contains the list of studies included in the findings of the concept analysis.

4.2. Step 4: Determine the defining attributes of the concept

Nine (9) defining attributes of self-management in both the healthcare (chronic illness) and the teaching and learning context (educational context) were uncovered (Table 2). These defining attributes were grouped under:

(A) **Personal attributes**, which are all attributes that directly describe, or involve what the individual (patient or student) does. The personal categories are further grouped into two, namely, ***cognitive*** and ***behavioural*** attributes. Cognitive attributes include cognition, emotion and self-efficacy, and behaviour attributes are those attributes related to actions, thus, what a person must do to self-manage.

(B) **Combined attributes,** which are the defining attributes that involve interactions between:

i. The individual patient, environment (health care system), family, and community in the health care context

ii. The individual student, educators, environment (classroom), family, and community.

All nine (9) defining attributes are interdependent, be it in the health care or teaching and learning context.

4.2.1. Personal cognitive attributes: Attribute 1- self-motivation

In both the teaching and learning and health care contexts, self-motivation is seen as one of the attributes of self-management, reflecting an individual's ability to encourage themselves to work towards achieving positive outcomes. Self-motivation involves positive reinforcement, conation (motivation and volition), the reward of own behaviour, self-reinforcement and talking to oneself (for example, "I made it", "good"). To self-manage, a student must be motivated to do so (Dembo, 2004). One can use positive reinforcement to motivate learning (Hamilton, 2007).

4.2.2. Personal cognitive attributes: Attribute 2- self-regulation

Self-regulation is closely tied to cognitive processes, as it involves the ability to control and manage one's thoughts, emotions, behaviours, and impulses. However, it is important to note that self-regulation may overlap with certain behavioural attributes. Self-regulation has also been used synonymously with self-regulated learning. In this context, it refers to learning that results from students' self-generated thoughts and behaviours that are systematically oriented toward attaining learning goals (Wiyono & Kholidya, 2018). Dembo (2004) uses the terms academic self-management and self-regulation interchangeably, concluding that individuals can gain control over their learning and enhance academic performance by developing self-management skills.. The ability to control distractions is essential for effective self-regulation and self-management (Kadiyono & Hafiar, 2018). This skill is crucial for how students manage themselves and is often employed as a key self-management strategy (Bahri et al., 2016).

4.2.3. Personal cognitive attributes: Attribute 3 – Self-evaluation/assessment

Self-evaluation/assessment is an integral part of self-management, closely linked to self-monitoring. In teaching and learning, it involves individual awareness, assessing preparedness and skills, identifying barriers to success, and evaluating the success of one's plan and performance. In the context of chronic illness, individuals need to be aware of signs, symptoms, and daily activities to become effective self-

Table 1
Studies included in the findings of the concept analysis.

Study ID	Country	Type of study	Year	Author(s)	Title of article
001	USA	Multistage quantitative study	2007	Gerhardt	Teaching Self-Management: The Design and Implementation of Self-Management Tutorials
002	USA	Exploratory qualitative study	2005	Curtin et al.	Self-management in patients with end stage renal disease: Exploring domains and dimensions
003	USA	Theory Development	2009	Ryan & Sawin	The Individual and Family Self-management Theory: Background and Perspectives on Context, Process, and Outcomes
004	Iran	Quasi Experimental Study	2015	Rezaee & Mosalanejad	The Effects of Case-Based Team Learning on Students' Learning, Self-Regulation and Self-Direction
005	USA	Model Development	2012	Modi et al.	Pediatric Self-management: A Framework for Research, Practice and Policy
006	Canada	Qualitative Descriptive Study	2003	Lorig & Holman	Self-Management Education: History, Definition, Outcomes, and Mechanisms
007	USA	Book	2004	Dembo	Motivation and Learning Strategies for College Success: A Self-Management Approach
008	USA, Canada,UK, Australia, Netherlands, Sweden, Iran and South Africa	Concept Analysis	2019	Van de Velde et al.	Delineating the concept of self-management in chronic conditions: a concept analysis
009	United Kingdom	Qualitative study	2017	Ellis et al.	Conceptualisation of the 'good' self-manager: A qualitative investigation of stakeholder views on the self-management of long-term health conditions
010	South Africa	Theory-generative, qualitative, exploratory, descriptive and contextual study	2020	Diedricks et al.	A model to facilitate self-management of human immunodeficiency virus in students within a university setting and promoting their mental health
011	Indonesia	Quantitative study	2017	Kadiyono & Hafiar	The role of academic self-management in improving students'academic achievement
012	Indonesia	Development model developed by Borg & Gall	2018	Wiyono & Kholidya	The Development of Academic Self-Management Inventory of Vocational High School Students
013	Indonesia	Quantitative study (ex-post facto)	2017	Wilany & Dewi	The effect of academic self- management and reading anxiety to students' reading comprehension in EFL classroom
014	United Kingdom	Qualitative study	2019	Fletcher et al.	The problem with self-management: Problematising self-management and power using a Foucauldian lens in the context of stroke care and rehabilitation
015	United Kingdom	Opinion paper	2012	Morden et al.	Rethinking 'risk' and self-management for chronic illness
016	USA	Narrative literature review	2007	Hamilton	Effects of a Self-Management Procedure: The Use of Self-Management Skills with Kindergarten Through Third Grade Students with Emotional and Behavior Disorders: Investigation of Findings
017	United Kingdom	Theory development	1997	Garrison	Self-directed learning: Toward a comprehensive model
018	USA	Concept delineation	2011	Richard & Shea	Delineation of self-care and associated concepts
019	Nigeria	Quasi Experimental Study	2013	Olorunfemi-Olabisi & Akomalafe	Effects of Self-Management Technique on Academic Self-Concept of Under-Achievers in Secondary Schools
020	Netherlands	Qualitative study	2015	Been-Dahmen et al.	Nurses' views on patient self-management: a qualitative study
021	USA	Quantitative study	2010	Rosland et al.	Family Influences on Self-Management Among Functionally Independent Adults with Diabetes or Heart Failure: Do Family Members Hinder as Much As They Help?
022	Belgium and Netherlands	Quantitative study	2015	Duprez et al.	The development and psychometric validation of the self-efficacy and performance in self-management support (SEPSS) Instrument
023	USA	Quantitative study	2004	Curtin et al.	Self-Management Knowledge and Functioning and Well-Being of Patients on Hemodialysis
024	Iran	Quantitative study (experimental)	2016	Bahri, et al.	The effect of self-management strategies on improving task performance in students with learning disabilities
025	Iran	Quasi-experimental study (with experimental and control groups)	2018	Mahjubian et al.	The Effects of Group Discussion Based Education on the Promotion of Self-Management Behaviors in Hemodialysis Patients
026	USA	Narrative literature review	2014	Grady & Gough	Self-Management: A Comprehensive Approach to Management of Chronic Conditions
027	Ethiopia	Quantitative study	2018	Gela & Mengistu	Self-management and associated factors among patients with end-stage renal disease undergoing haemodialysis at health facilities in Addis Ababa, Ethiopia
028	Canada	Interpretive phenomenological study	2018	Ko (PhD dissertation)	Emotional Self-Management Experiences of Practical Nursing Students
029	USA	Narrative literature review	2010	Bosworth et al	Patient Self-Management Support: Novel Strategies in Hypertension and Heart Disease
030	USA	Framework development	2015	Grey et al.	A revised self- and family management framework
031	China	Quantitative descriptive study	2014	Li et al	Factors associated with self-management by people undergoing haemodialysis: a descriptive study
032	Canada	Descriptive study and Review of literature	2013	Novak et al	Approaches to self-management in chronic illness
033	Northern Utah, Western United States	Multiple based-line design (Intervention studies)	2016	Charlton	Effects of a Self-Management Procedure Using Student Feedback on Staff Members' use of Praise in an Out-Of-School Time Program

Table 2
Categories and the accompanying codes of the attributes deduced from the concept analysis with the referenced articles.

No.	Categories	Codes in both teaching and learning context and health care context
A.	**Personal attributes**	
I	**Cognitive/psychological attributes**	
1.	Self-motivation	• Positive reinforcement (7), (16), (17) • Conation (motivation and volition) (17) • Reward their own behaviour (33) • Self-reinforcement (24) • Talking to yourself (for example "I made it", "good") (13)
2.	Self-regulation (control/regulating self without external input; regulating and controlling cognition and emotions)	• Encompasses psychological processes (10), (30) • Ability to perceive and understand emotions (28) • Management of emotional responses (3), (8), (10), (25), (30), (31) • Emotional empowerment (28) • Regulating oneself (2), (22), (27) • Reflective thinking (part of skills and abilities in order to self-regulate) (3), (28) • Self-control (14) (26) (1), (7), (11), (19), (23), (24) • Taking responsibility (8), (9), (10), (23) • Self-direction (7), (12) • Self-discipline (12), (19) • Self-determination (11) • Self-instruction (28)
3.	Self- evaluation/assessment	• Individual awareness (1), (18) • Assessing one's own self (24), (1), (7), (17), (19), (24), (33) • Determining whether one is adequately ready and skilled (1) • The identification of issues, situations, or problems that may prevent individuals from reaching their goals (1), (18) • Matching: using feedback from an external agent to enhance the quality of self-evaluations (33) • Individual evaluating the success of their plan (3) • Performance (assessing your outcomes) (1), (18), (22)
4.	Self-efficacy/confidence	• Enhancing self-efficacy/confidence (3), (20), (21), (24), (2), (6), (27), (28) 14) • Individual belief (15) • Feeling in control (2), (14) • Self-identity (14)
II	**Behavioural attributes**	
5.	Individual (patient or student) action and skills	• Multi-dimensional complex process (3) • Setting priorities (8) • Goal setting (19), (7), (11), (17), (12), (13), (24) • Planning (19), (7), (11), (17), (12), (13), (24), (3) (28) • Good decision-making (3), (7), (9), (18) • Effective learning styles (4), (13) • Problem-solving skills (8), (11), (18), (20), (25), (30), (31), (32) • Knowing when to seek for help/ resources/information (2), (7), (8) (9), (23) • Use of resources (internet, books etc) (7)
6.	Self-monitoring	• Independence (12) • Self −modification/adaptation (17), (33) • Good self-care skills (25), (26), (31) • Assertive self-advocacy (23) • Respond with appropriate action (29) • Active participation in treatment/ learning (6), (16), (24), (29) • Time management (1), (7), (12), (13), (29), (32) • Monitoring of symptoms (18), (29) • Self-recording (17), (24)
7.	Environmental management	• Managing the physical environment (including the classroom) (1), (3), (7) • Managing social environment (3), (7)
8.	Continuous task	• Lifetime task (6), (8) • Integrating illness into daily life (20), (21), (30) • Day-to-day / everyday decisions and task (28)
B.	**Combined Attributes**	
9.	Partnership	• Agreement and partnering between persons involved (2), (7), (8), (10), (14), (15), (26), (29), (31), (32) • Effective communication (2), (28) • Information sharing (8) • Shared responsibility (23), (25) • Family involvement (21) • Teacher's help (33)

managers. According to Ryan and Sawin (2019), self-evaluation is essential for managing chronic conditions or risk factors and involves deeper actions than just following healthcare recommendations (Bosworth et al., 2010). While self-evaluation/assessment is identified as a distinct attribute of self-management in the teaching and learning context, it is regarded as a component of self-regulation in healthcare settings.

4.2.4. Personal cognitive attributes: Attribute 4- Self-efficacy/confidence

Themes related to self-efficacy in teaching, learning, and healthcare contexts encompass enhancing self-efficacy/confidence, individual belief, feeling in control, and self-identity, all of which are essential for self-management (Gela & Mengistu, 2018; Ryan & Sawin, 2009; Lorig & Holman, 2003). In healthcare, increased self-efficacy is linked to improved health behaviours and outcomes (Lorig & Holman, 2003), while confidence and personal power are critical for achieving desired outcomes (Fletcher et al., 2019; Morden et al., 2012; Curtin et al., 2005). In teaching and learning, self-efficacy fosters active participation and positively influences academic performance (Ko, 2018; Bahri et al., 2016).

4.2.5. Individual behavioural attributes: Attribute 5 – individual (patient or student) action and skills

Individual action and skills involve empowering oneself to actively participate in decision-making and goal planning through various activities and actions essential for effective self-management (Duprez et al., 2016). In the teaching, learning, and healthcare context, this multi-dimensional and complex process includes goal setting, planning, effective decision-making, problem-solving, knowing when to seek help or resources, independence, self-adaptation, assertive self-advocacy, and active participation in learning or treatment. While overlapping with cognitive attributes, this attribute emphasizes the actions and skills required for execution, reflecting its multidimensional nature and

significance for the future of society (Ryan & Sawin, 2009; Lorig & Holman, 2003).

4.2.6. Individual behavioural attributes: Attribute 6 – self-monitoring

Self-monitoring involves observing one's own behaviour and is integral to self-management in both teaching and learning and healthcare contexts. It includes monitoring time, symptoms, and recording data for future reference, which are essential for managing chronic diseases by tracking treatments, drugs, and clinical features (Been-Dahmen et al., 2015; Richard & Shea, 2011). As a behavioural attribute, self-monitoring is linked to the cognitive attributes of self-evaluation and assessment, emphasizing the need for readiness, skill, and determination to monitor actions effectively and at the appropriate time (Wilany & Dewi, 2017; Gerhardt, 2007; Garrison, 1997).

4.2.7. Individual behavioural attribute: Attribute 7 – environmental management

Environmental management involves understanding one's social and physical environment and implementing strategies to address and manage its effects or consequences (Ryan & Sawin, 2009). It encompasses managing the physical environment (e.g., classroom, access to health care, transportation) and the social environment (e.g., neighbourhood, work, school, culture, social capital), helping individuals become good self-managers by controlling or partially controlling environmental influences (Ryan & Sawin, 2009). In healthcare, it involves coping with a chronic condition and integrating it into daily life. Students must recognize that the classroom atmosphere affects their motivation while taking responsibility for their actions, which enables them to reflect on past situations where managing aspects of their physical or social environment could have been beneficial (Dembo, 2004).

4.2.8. Individual behavioural attributes: Attribute 8 – continuous task

Continuous task, as an attribute of self-management, refers to the ongoing activities or tasks an individual consistently performs until a specific goal is achieved (Grey et al., 2015).

In both contexts, self-management is not a task that has an endpoint. Self-management is a lifetime task; thus, it is done in all aspects of an individual's daily activities (Van de Velde et al., 2019; Lorig & Holman, 2003). Researchers particularised and claimed precisely that self-management is a continuous process that individuals engage in throughout their lifetime (Van de Velde et al., 2019; Grey et al., 2015; Lorig & Holman, 2003).

4.2.9. Combined attributes: Attribute 9 – partnership

In both the teaching and learning and health care contexts, self-management partnerships involve themes such as agreement and partnering between participants (Diedricks et al., 2020; Grady & Gough, 2014; Li et al., 2014; Novak et al., 2013; Morden et al., 2012; Bosworth et al., 2010), effective and therapeutic communication, information sharing, shared responsibility, family involvement, and teacher support (Van de Velde et al., 2019). There has been a shift from traditional top-down management, where specialists or educators direct passive patients or learners, to collaborative management, where individuals share their skills to enhance self-management capabilities (Ellis et al., 2017; Rosland et al., 2010; Curtin et al., 2005; Curtin et al., 2004).

The concept analysis generated the conceptualised definition:

> "*Self-management within the teaching and learning context is a continuous task which entails harnessing both personal (cognitive and behavioural) attributes such as self-motivation, self-regulation, self-evaluation, self-efficacy, personal skills and actions and self-monitoring through environment management and is facilitated by collaborative efforts with others.*"

4.3. Step 5: Identify a model case

Walker and Avant (2014) define a model case as "a pure case of the notion, a paradigmatic example, or a pure exemplar." Box 1 includes a description of a fictitious nursing student who exhibits all the above nine attributes in a teaching and learning context.

Box 1 Model case.

Ernest is a dedicated nursing student who consistently excelled academically from the start of his diploma programme (continuous task). He is motivated to succeed and remains committed to his studies (self-motivation). Ernest is self-directed in his learning, preparing for classes and engaging in group discussions (self-regulation). He manages his environment by attending class even when others do not (environmental management). He confidently asks questions in class (self-efficacy) and works through the study guide and additional materials during self-directed learning time (individual actions and skills). Ernest follows a strict personal timetable to manage his time effectively (self-monitoring-time management). He tracks his progress by setting self-evaluation questions and comparing exam results to his goals (self-evaluation/assessment). Ernest participates in school social activities and plays soccer in his free time (individual actions and skills). He has good relationships with his educators and seeks help when needed (partnership).

4.4. Step 6: Borderline case and contrary case

A borderline case (Box 2) is a fictive case with some missing attributes, similar to a model case but with distinct defining attributes, whereas a contrary case is a clear example of 'not the concept' (Box 3).

Box 2 Borderline case.

Tetteh is an academically average student at a Nursing Training College who believes in his ability to achieve his learning goals independently (self-efficacy). Although he participates actively in lectures and practical sessions (individual actions and skills), he avoids student group activities and prefers working alone. Tetteh is confident in his ability to direct his own learning without external guidance (self-regulation) and uses positive self-talk when he performs well. He keeps a record of his progress (self-monitoring) but does not regularly assess or evaluate his learning progress, as he prefers not to push himself too hard. When faced with distractions, such as a noisy class, he uses strategies, like headphones, to maintain focus (environmental management). Although he has a personal timetable, he does not strictly adhere to it due to various distractions and does not prioritise daily learning. Tetteh rarely uses resources like the library or seeks help from educators, even when he struggles with understanding certain concepts, as he prefers to figure things out independently.

Box 3.3 Contrary case.

Jemima, a second-year nursing student, relies heavily on her friends for support and motivation. She does not engage actively in her studies or seek clarification in lectures, preferring to rely on her peers' assignments. She spends her free time socialising rather than studying and believes a personal timetable is unnecessary. Jemima rarely wakes up early enough for personal study and often chats with friends during class and on social media when educators are absent. She has poor relationships with educators and does not use the library, focusing instead on entertainment and fashion online. She does not monitor or evaluate her academic progress and avoids academic clubs, although she participates in social activities. At clinical sites, she is often late and unprofessional, preferring not to ask for help when unsure of tasks. As a result, she is unlikely to progress to the third year due to failing her exams.

The cases illustrate the intricacies of self-management and the distinction between good and poor self-managers in teaching and learning.

4.5. Step 7: Identify antecedents and consequences of the concept

Walker and Avant (2014) define antecedents as actions required for a concept to occur, and consequences as events or incidents that result from them. Table 3 depicts the antecedents categorised by their corresponding attributes.

4.5.1. Antecedents for individual cognitive attributes

Individual cognitive attributes are influenced by one's cognition, emotion, and belief, which contribute to their ability to self-manage. These attributes include individual capacity and external motivation. Individual capacity refers to an individual's ability to perform

Table 3
Antecedents and consequences.

Antecedents	Attributes	Consequences (immediate)	Consequences (long-term)	Negative consequences (immediate or long term)
• Individual capacity • External motivation • Feedback & positive reinforcement from others (educators) • Access to resources • Teaching and Learning strategies that foster independence, engagement, group work & authentic learning • Support and involvement (family, educators, friends) • Relationships & trust • Effective and therapeutic communication	Individual cognitive attributes Individual behavioural attributes Partnership	• Empowerment – positive reinforcement, motivation & confidence • Increased independence, self-directedness & accountability • Achievement of short-term goals / completing tasks on time • Engagement in self-management behaviours, self-efficacy enhancement, self-control and increased satisfaction	• Achieving long-term goals/positive outcomes • Quality of life • Enhanced coping	• Self-harm if the student does not have the appropriate information to learn or gets wrong information from external sources • Poor health / academic performance

Antecedents for individual cognitive attributes.

behaviours necessary for specific performance attainments, such as working memory and academic success (Fletcher et al., 2019; Morden et al., 2012; Curtin et al., 2005). External motivation, such as praise from family members, peers, and educators, reinforces self-motivation and self-efficacy. Building trust with educators and receiving respect, advice, and awards empowers students to learn and achieve academic success. Teachers often use specific praise (e.g., appreciative remarks) to stimulate student engagement and create a good learning environment (Charlton, 2016).

4.5.2. *Antecedents for individual behavioural attributes*

Antecedents for individual behavioural attributes include: access to resources, teaching and learning strategies that foster engagement, group work and authentic learning (Duprez et al., 2016; Ryan & Sawin, 2009; Curtin et al., 2005). Access to resources such as a well-resourced library, reliable internet, and a serene classroom environment affects self-management (Dembo, 2004).

Group discussions and collaborative learning enhance students' environmental management, self-monitoring abilities, and actions,

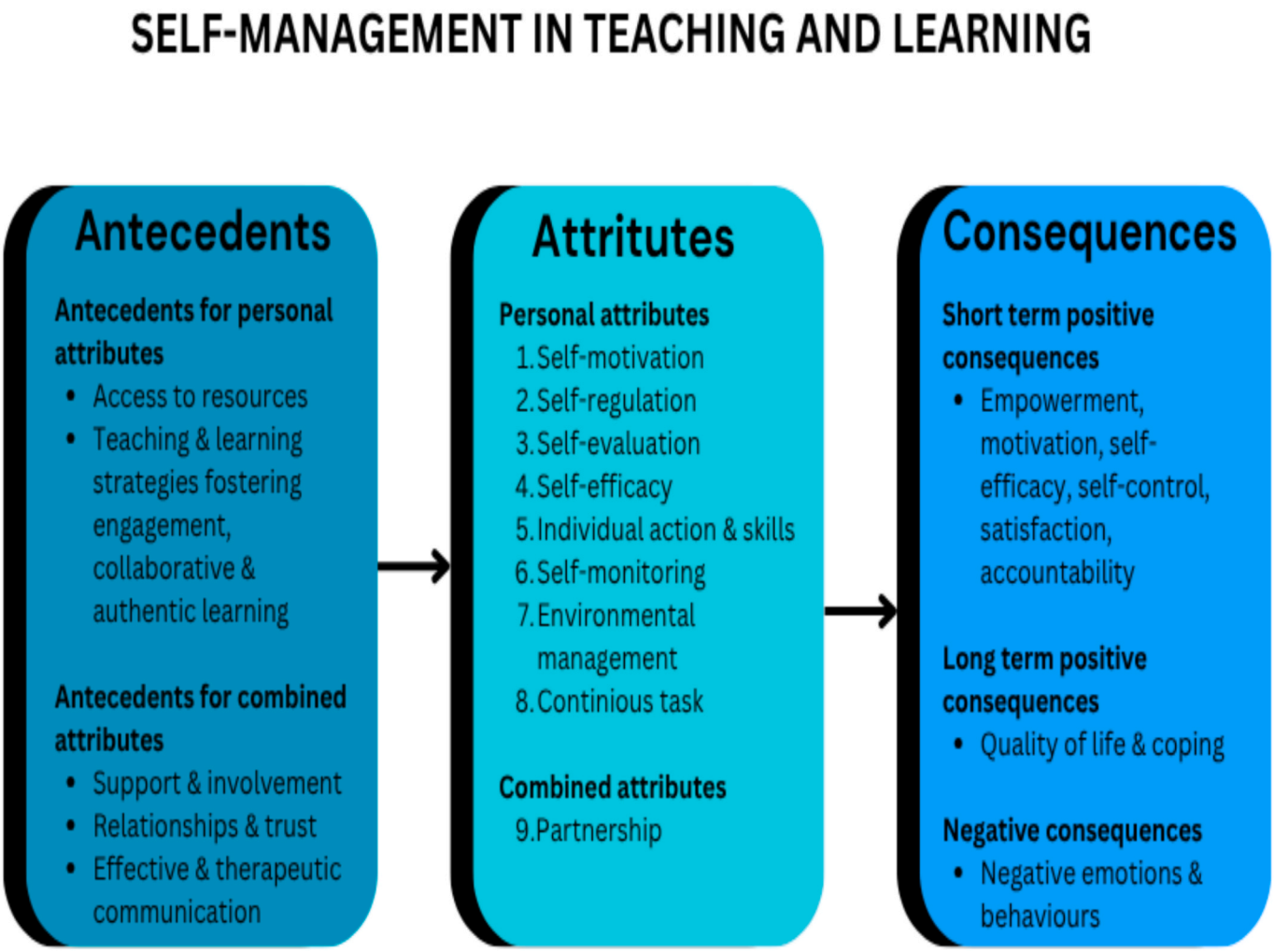

Fig. 2. Conceptual diagram.

fostering better self-management and improved academic performance (Duprez et al., 2016; Dembo, 2004).

4.5.3. Antecedents for partnership

Support and involvement (family, educators, friends), relationships and trust, and effective and therapeutic communication between the student and educator positively influence partnership. Students who receive help from their educators can manage themselves well in the classroom and this has a positive impact on their academic performance (Charlton, 2016). Good relationships with family, colleagues on campus and educators, together with trust, help students maintain good partnerships. Effective and therapeutic communication between the student and the educator plays an important role in self-management while building a good partnership (Ko, 2018).

4.5.4. Consequences

Self-management has both short-term and long-term positive outcomes, including improved quality of life and enhanced coping skills. Short-term outcomes include empowerment, motivation, self-efficacy, self-control, satisfaction, and accountability (Kadiyono & Hafiar, 2018; Wiyono & Kholidya, 2018; Wilany & Dewi, 2017). Students become responsible for their progress, leading to increased independent learning and overcoming obstacles (Kadiyono & Hafiar, 2018; Wiyono & Kholidya, 2018; Wilany & Dewi, 2017; Charlton, 2016; Rezaee & Mosalanejad, 2015). However, poor self-management can lead to negative consequences like fear, anxiety, and inappropriate behaviours, potentially leading to self-harm (Grey et al., 2015).

In conclusion, the conceptual diagram (Fig. 2) illustrates antecedents, attributes and consequences for self-management in teaching and learning.

4.6. Step 8: Empirical referents of the model

Empirical referents are measurable indicators used to demonstrate self-management by assessing whether the attributes can be quantified (Walker & Avant, 2014). These referents were identified to uniquely measure the concept of self-management. However, none of the analyzed publications specifically identified empirical referents for the entire concept of self-management in teaching and learning.

5. Discussion

This concept analysis identifies critical attributes, antecedents, and consequences of self-management within the teaching, learning, and healthcare contexts. The identified attributes, including self-motivation, self-regulation, self-evaluation, self-efficacy, individual action and skills, self-monitoring, environmental management, continuous task, and partnership, illustrate the multidimensional nature of self-management. Each attribute, supported by studies on health and behavioural psychology and education (for example, Ryan & Sawin, 2009; Dembo, 2004; Lorig & Holman, 2003), highlights its unique contribution to self-management, such as fostering academic success, promoting independence, and managing chronic conditions. For example, self-motivation and self-efficacy are pivotal for initiating and sustaining self-management behaviours (Dembo, 2004; Lorig & Holman, 2003), while self-monitoring and evaluation ensure continuous adaptation and improvement (Wilany & Dewi, 2017; Ryan & Sawin, 2009). Although self-management shares elements with self-directed learning and self-regulation, it remains broader in scope. Self-directed learning emphasises learner autonomy in setting and achieving goals (Knowles, 1975), while self-regulation focuses on the cognitive and behavioural strategies used to monitor and adjust performance (Zimmerman, 2002). Self-management integrates these dimensions with motivation, environmental management, and partnership, making it a multidimensional construct that applies not only in education but also in healthcare (Ryan & Sawin, 2009; Lorig & Holman, 2003).

The antecedents emphasize the roles of individual capacity, external motivation, access to resources, and effective partnerships in enabling self-management (Charlton, 2016; Duprez et al., 2016). Consequences reveal both short- and long-term benefits, such as empowerment, accountability, and improved quality of life, while also cautioning against the negative effects of poor self-management, including anxiety and maladaptive behaviours (Kadiyono & Hafiar, 2018; Grey et al., 2015). This analysis also highlights the lack of comprehensive empirical referents for measuring self-management in educational contexts, underscoring a gap in the literature.

This analysis aligns with prior studies by confirming the importance of cognitive and behavioural attributes in self-management (Ryan & Sawin, 2009; Lorig & Holman, 2003). However, it extends existing research by integrating the concept of partnership as a combined attribute, reflecting a shift from hierarchical to collaborative management models in education and healthcare (Van de Velde et al., 2019; Ellis et al., 2017). Unlike other analyses, which often focus on healthcare (Van de Velde et al., 2019; Gray & White, 2012; Brush et al., 2011), this study bridges the gap by applying self-management attributes to teaching and learning, illustrating their relevance across domains.

This concept analysis contributes to the body of literature by understanding self-management in nursing education contexts. It can inform the development of interventions and assessment tools aimed at enhancing self-management skills among students and patients. For instance, educators can use the findings of the concept analyses to design curricula that foster self-regulation, self-evaluation, and environmental management, while healthcare practitioners can apply it to support chronic disease management. By emphasizing partnership and collaborative strategies, this analysis offers a holistic perspective that can drive future research and practice.

6. Limitations

The study faced limitations due to the scarcity of specific literature on self-management in nursing education, which made it difficult to establish a strong theoretical foundation. Additionally, the concept's complexity and overlap with related constructs like self-directedness and self-regulation created challenges in isolating self-management for analysis. Despite these challenges, the research provides valuable insights that can inform future studies and teaching strategies in nursing education.

7. Conclusion

Self-management is a concept that is more frequently used in healthcare than in the teaching and learning context. However, the attributes of self-management in the healthcare context found in the concept analysis are also linked to self-management in the teaching and learning context. Unfortunately, there is considerable ambiguity regarding the concept. This concept analysis was an attempt to clarify these ambiguities. It has resulted in nine attributes organised into two groups: (a) personal attributes and (b) combined attributes.

In bringing all nine attributes together, one can say that the definition and understanding of self-management in the teaching and learning context will go a long way to assist learners in becoming good self-managers. The study findings serve as a starting point for further research into self-management in general in health professions' teaching and learning. Specifically, further research is suggested on the perspectives of nursing students on the attributes, antecedents and consequences of self-management in the teaching and learning context.

Patient and public involvement statement

This study did not involve human beings or patients. The names of the persons mentioned in the model case and the additional cases are fictitious.

Patient consent for publication

Not required.

Ethical statement

This study is part of a larger study for which ethics approval by the Health Research Ethics Committee, Stellenbosch University, with HREC Reference No: S20/08/210 (PhD) was obtained. All reviewed articles were properly cited and referenced, with data closely monitored to ensure accurate attribution during paraphrasing. The classification of findings into attributes, antecedents, and consequences was carefully deliberated and presented as a consensual outcome among the authors.

Additional files and materials

The data would be provided upon reasonable request.

Data availability

The data would be provided upon reasonable request.

CRediT authorship contribution statement

Mercy Kokuro: Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Talitha Crowley:** Writing – review & editing, Writing – original draft, Visualization, Supervision, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Anita S. van der Merwe:** Writing – review & editing, Supervision, Project administration, Methodology, Data curation, Conceptualization. **Cornelle Young:** Writing – review & editing, Supervision, Methodology, Investigation, Data curation, Conceptualization.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijans.2025.100962.

References

Bahri, L., Mirnasab, M., Noorazar, G., Fathi Azar, E., & Asadi, S. (2016). The effect of self-management strategies on improving task performance in students with learning disabilities. *Journal of Analytical Research in Clinical Medicine, 4*(1), 53–65. https://doi.org/10.15171/jarcm.2016.009

Been-Dahmen, J. M. J., Dwarswaard, J., Hazes, J. M. W., van Staa, A., & Ista, E. (2015). Nurses' views on self-management: A qualitative study. *Journal of Advanced Nursing, 71*(12), 2834–2845. https://doi.org/10.1111/jan.12767

Bosworth, H. B., Powers, B. J., Oddone, E. Z., & Author, C. C. (2010). Patient self-management support: Novel strategies in hypertension and heart disease NIH public access author manuscript. *Cardiology Clinics, 28*(4), 655–663. https://doi.org/10.1016/j.ccl.2010.07.003

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Brush, B. L., Kirk, K., Gultekin, L., & Baiardi, J. M. (2011). Overcoming: A concept analysis. *Nursing Forum, 46*(3), 160–168. https://doi.org/10.1111/j.1744-6198.2011.00227.x

Charlton, C. T. (2016). Effects of a self-management procedure using student feedback on staff members' use of praise in an out-of-school time program. *Graduate Studies at DigitalCommons@USU., 4703*.

Corbin, J. M., & Strauss, A. (1988). *Unending Work and Care*. London: Jossey-Bass Inc., Publishers.

Curtin, R. B., Sitter, D. C., Schatell, D., & Chewning, B. A. (2004). Self-management, knowledge, and functioning and well-being of patients on hemodialysis. *Nephrology Nursing Journal: Journal of the American Nephrology Nurses' Association, 31*(4), 378–387. https://www.researchgate.net/publication/8262574.

Curtin, R. B., Schatell, D., Mapes, D., & Burrows-Hudson, S. (2005). Self-management in patients with end stage renal disease: Exploring domains and dimensions. *Journal of the American Nephrology Nurses' Association, 32*(4), 389–395. Available: https://www.researchgate.net/publication/7582923_Self-management_in_patients_with_end_stage_renal_disease_Exploring_domains_and_dimensions [2022, October 05].

De Lange-Cloete, F. 2022. *The development of a self-management intervention for adolescents living with HIV in a South African context: views of experts and key stakeholders* (Doctoral dissertation, Stellenbosch: Stellenbosch University) [Online]. Available: http: //hdl.handle.net/10019.1/124823 [2022, October 15].

Dembo, M. H., & Seli, H. (2011). *Motivation and Learning Strategies for College Success: A Self Management Approach* (3rd edition). New York: Routledge.

Dembo, M. H. (2004). *Motivation and Learning Strategies for College Success: A Self-Management Approach* (Second Edition ed). New Jersey: Lawrence Erlbaum Associates Inc.

Diedricks, T. G., Myburgh, C. P. H., & Poggenpoel, M. (2020). A model to facilitate self-management of human immunodeficiency virus in students within a university setting and promoting their mental health. *Health SA Gesondheid., 25*, Article a1069. https://doi.org/10.4102/hsag

Duprez, V., Beeckman, D., Verhaeghe, S., & Van Hecke, A. (2017). Self-management support by final year nursing students: A correlational study of performance and person-related associated factors. *International Journal of Nursing Studies, 74*, 120–127. https://doi.org/10.1016/j.ijnurstu.2017.06.010

Duprez, V., Van Hooft, S. M., Dwarswaard, J., Van Staa, A., Van Hecke, A., & Strating, M. M. H. (2016). The development and psychometric validation of the self-efficacy and performance in self-management support (SEPSS) Instrument. *Journal of Advanced Nursing, 72*(6), 1381–1395. https://doi.org/10.1111/jan.12918

Ellis, J., Boger, E., Latter, S., Kennedy, A., Jones, F., Foster, C., & Demain, S. (2017). Conceptualisation of the 'good' self-manager: A qualitative investigation of stakeholder views on the self-management of long-term health conditions. *Social Science and Medicine, 176*, 25–33. https://doi.org/10.1016/j.socscimed.2017.01.018

Fletcher, S., Kulnik, S. T., Demain, S., & Jones, F. (2019). The problem with self-management: Problematising self-management and power using a Foucauldian lens in the context of stroke care and rehabilitation. *PLoS One1, 14*(6), Article e0218517. https://doi.org/10.1371/journal.pone.0218517

Garrison, D. R. (1997). Self-directed learning: Toward a comprehensive model. *Adult Education Quarterly, 48*(1), 18–33. https://doi.org/10.1177/074171369704800103

Gela, D., & Mengistu, D. (2018). Self-management and associated factors among patients with end-stage renal disease undergoing hemodialysis at health facilities in Addis Ababa, Ethiopia. *International Journal of Nephrology and Renovascular Disease., 11*, 329–336. https://doi.org/10.2147/IJNRD.S184671

Gerhardt, M. (2007). Teaching self-management: The design and implementation of self-management tutorials. *Journal of Education for Business, 83*(1), 11–18. https://doi.org/10.3200/JOEB.83.1.11-18

Grady, P. A., & Gough, L. L. (2014). Self-management: A comprehensive approach to management of chronic conditions. *Public Health, 104*, 25–31. https://doi.org/10.2105/AJPH.2014

Gray, F. C., & White, A. (2012). Concept analysis: Case management role confusion. *Nursing Forum, 47*(1), 3–8. https://doi.org/10.1111/j.1744-6198.2011.00244.x

Grey, M., Schulman-Green, D., Knafl, K., & Reynolds, N. R. (2015). A revised self- and family management framework. *Nursing Outlook, 63*(2), 162–170. https://doi.org/10.1016/j.outlook.2014.10.003

Gu, M., & Sok, S. (2021). Factors affecting the academic achievement of nursing college students in a flipped learning simulation practice. *International Journal of Environmental Research and Public Health, 18*(11), 5970. https://doi.org/10.3390/ijerph18115970. PMID: 34199562; PMCID: PMC8199705.

Hamilton, J.L. (2007). Effects of Teaching Self-Management Techniques 1 The Use of Self-Management Skills with Kindergarten Through Third Grade Students with Emotional and Behavior Disorders: Investigation of Findings Effects of Teaching Self-Management Techniques 2 Acknowledgements.

Kadiyono, A.L. & Hafiar, H. (2018). The role of academic self-management in improving students ' academic achievement The role of academic self-management in improving students ' academic achievement. (2017). doi: 10.1201/9781315166575-30.

Ko, C. (2018). Emotional Self-Management Experiences of Practical Nursing Students. Available: https://scholarworks.waldenu.edu/dissertations.

Knowles, M. (1975). *Self-Directed Learning: A Guide for Learners and Teachers*. Chicago, IL: Follett Publishing Company.

Lazcano, L. M., González-Chordá, V. M., Manrique-Abril, F. G., Cervera-Gasch, Á., Mena-Tudela, D., Andreu-Pejó, L., & Valero-Chillerón, M. J. (2022). Characteristics and

determinants of the academic goals in nursing education: A cross-sectional study. *Nurse Education Today, 114*. https://doi.org/10.1016/j.nedt.2022.105402

Li, H., Jiang, Y. F., & Lin, C. C. (2014). Factors associated with self-management by people undergoing hemodialysis: A descriptive study. *International Journal of Nursing Studies, 51*(2), 208–216. https://doi.org/10.1016/j.ijnurstu.2013.05.012

Lorig, K. R., & Holman, H. (2003). Self-management education: History, definition, outcomes, and mechanisms. *Annals of Behavioral Medicine : A Publication of the Society of Behavioral Medicine, 26*(1), 1–7. https://doi.org/10.1207/S15324796ABM2601_01

Modi, A. C., Pai, A. L., Hommel, K. A., Hood, K. K., Cortina, S., Hilliard, M. E., Guilfoyle, S. M., Gray, W. N., & Drotar, D. (2012). Pediatric self-management: A framework for research, practice, and policy. *Pediatrics, 129*. https://doi.org/10.1542/peds.2011-1635. e473-e485.

Morden, A., Jinks, C., & Ong, B. N. (2012). Rethinking risk and self-management for chronic illness. *Social Theory and Health, 10*(1), 8–99. https://doi.org/10.1057/sth.2011.20

Novak, M., Costantini, L., Schneider, S., & Beanlands, H. (2013). Approaches to self-management in chronic illness. *Seminars in Dialysis, 26*(2), 188–194. https://doi.org/10.1111/sdi.12080

Nursing and Midwifery Council of Ghana. 2021. *Curriculum for the registered General Nursing (RGN) programme: Based on the Semester Course Unit System.*

Olorunfemi-Olabisi, F. A., & Akomolafe, M. J. (2013). Effects of self-management technique on academic self-concept of under-achievers in secondary schools. *Journal of Education and Practice, 4*(6), 138–141. Available: www.iiste.org.

Rezaee, R., & Mosalanejad, L. (2015). The effects of case-based team learning on students' learning, self regulation and self direction. *Global Journal of Health Science, 7*(4), 295–306. https://doi.org/10.5539/gjhs.v7n4p295

Richard, A. A., & Shea, K. (2011). Delineation of self-care and associated concepts. *Journal of Nursing Scholarship, 43*(3), 255–264. https://doi.org/10.1111/j.1547-5069.2011.01404.x

Rosland, A. M., Heisler, M., Choi, H. J., Silveira, M. J., & Piette, J. D. (2010). Family influences on self-management among functionally independent adults with diabetes or heart failure: Do family members hinder as much as they help? *Chronic Illness, 6*(1), 22–33. https://doi.org/10.1177/1742395309354608

Ryan, P., & Sawin, K. J. (2009). The individual and family self-management theory: Background and perspectives on context, process, and outcomes. *Nursing Outlook, 57*(4). https://doi.org/10.1016/j.outlook.2008.10.004, 217-225.e6.

Sattoe, J. N., Bal, M. I., Roelofs, P. D., Bal, R., Miedema, H. S., & Van Staa, A. (2015). Self-management interventions for young people with chronic conditions: A systematic overview. *Patient Education and Counseling, 98*(6), 704–715. https://doi.org/10.1016/j.pec.2015.03.004

Shirazi, F., Shirazi, F., Molazem, Z., & Etemaad, J. (2021). The characteristics that propel Iranian MS students of nursing into self-directed learning: A qualitative research. *Journal of Professional Nursing, 37*(4), 749–756. https://doi.org/10.1016/j.profnurs.2021.05.001

van de Velde, D., de Zutter, F., Satink, T., Costa, U., Janquart, S., Senn, D., & de Vriendt, P. (2019). Delineating the concept of self-management in chronic conditions: A concept analysis. *BMJ Open, 9*(7), Article e027775. https://doi.org/10.1136/bmjopen-2018-027775

Walker, L. O., & Avant, K. C. (2014). *Strategies for theory construction in nursing* (5th Edition ed., pp. 163–179). New York: Pearson.

Wilany, E., & Dewi, D. S. (2017). The Effect of Academic Self management and Reading Anxiety to students' Reading Comprehension in EFL Classroom. *DIMENSI, 6*(3), 421–433.

Wiyono, B. D., & Kholidya, C. F. (2018). The development of academic self-management inventory of vocational high school students. *Advances in Social Science, Education and Humanities Research, 212*, 726–730.

World Health Organization. 2015. A guide to nursing and midwifery education standards [Online]. Available: https://apps.who.int/iris/bitstream/handle/10665/44100/WHO_HRH_HPN_08.6_eng.pdf [Accessed 20th January 2023].

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice, 41*(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2