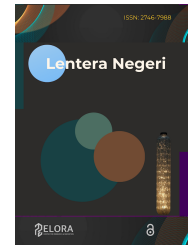




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Self-efficacy, motivation, and perceived barriers as psychological determinants of exercise adherence in clinical healthcare settings: a systematic literature review

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ABSTRACT

Addressing the critical healthcare challenge of non-adherence to exercise programs—where dropout rates reach up to two-thirds of participants—this systematic review synthesizes 50 peer-reviewed articles published between 2020 and 2026 from the Scopus database, following PRISMA 2020 and Tranfield et al.'s methodological frameworks. The authors identified three primary psychological drivers of patient adherence: high self-efficacy, which proved to be the single strongest predictor by increasing adherence rates by up to 33 percentage points while mediating the impact of kinesiophobia; autonomous, intrinsic motivation grounded in Self-Determination Theory, which plays a pivotal role in sustaining long-term exercise commitment among cardiac and oncology patients; and perceived barriers—including fear of movement, pain, time constraints, and insufficient provider support—which consistently predict poorer compliance and often exert a greater influence than objective disease severity. To improve clinical outcomes, the review emphasizes the necessity of routine pre-treatment screening for self-efficacy and individual barriers, alongside the implementation of autonomy-supportive rehabilitation protocols. Ultimately, the authors call for future research prioritized around longitudinal randomized controlled trials, studies focusing on underrepresented populations within low- and middle-income countries, and the integration of digital health technologies into established psychological frameworks.



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Introduction

Physical activity and regular sports exercise are recognized throughout the world as two major sources of prevention medicine and control of chronic diseases. World Health Organization recommends that an average adult should do at least 150, 300 minutes/week of vigorous aerobic activity but monitoring data show consistently that one out of four adults globally do not comply with the WHO's minimum standard (Meyer et al., 2020). In hospitals, the scope of exercise goes much beyond the heart and lungs, for medical studies indicate its ability to mitigate cancer-related fatigue, expedite orthopedic recovery, lower blood sugar

levels of a diabetic patient, reduce depressive symptoms, and elevate the level of HRQoL overall in chronic disease conditions (Gilanyi et al., 2024; Thielen et al., 2023). Despite the strong support that is given for exercise in the form of recommendations from clinics and hospitals, the conversion of those guidelines into patients' lifestyle is very slow to take place. The contradiction of understanding that exercise is good for you and still not doing it is a major problem in modern healthcare which has implications to patient results from the aspect of their own lives to the cost aspect of the hospital to the question of the sustainability of the health system.

Exercise adherence, in its broadest sense, refers to the extent of the patients' compliance with exercise recommendations or treatments over a period of time. This type of behavior is a very complex one that is shaped, in the first place, by the biological, psychological, social, and environmental dimensions of a person and, therefore, it is very hard to generalize the findings. Psychological elements have become a focus for researchers of late because they are the kind of factors that can be changed (modified) by different treatments. Theories like Bandura's Social Cognitive Theory have been considered among the fundamental ones that can be used to understand and predict exercise adherence in patients. There are many others, such as the Self-Determination Theory (SDT) by Deci and Ryan, the Transtheoretical Model of Behavior Change, and the Health Belief Model (Kaushal et al., 2022; Yan et al., 2025; Romero-Elías et al., 2024). No single framework has been shown to outperform the others across all clinical populations, which is why this review draws on Social Cognitive Theory, SDT, and the Health Belief Model jointly rather than adopting one theory as the sole lens; across the included studies, exercise adherence itself is operationalized in several overlapping ways—self-reported session attendance, accelerometer- or pedometer-recorded activity, and clinician- or program-rated compliance—each of which is noted where relevant to the findings discussed below. Luckily, different theoretical models agree upon some key psychological aspects to be most relevant: - Self-efficacy as described by Bandura, which is essentially confidence, a personal belief in the ability to carry out an action successfully; - Motivational quality Deci and Ryan would explain this as the extent to which a person's behavior for physical activity is based on internal factors (vs. external) that the person controls and values; - Perceived barriers that is the person's own judgment about the obstacles the person will encounter in order to perform the activity- and Social support (the availability of and willingness to help from others, both in material and emotional aspects).

There has been significant growth in exercise adherence studies conducted at health care facilities, especially since the outbreak of coronavirus which led to a major change in people's exercise habits as it imposed mental challenges to physical activity. Researchers have published numerous papers about adherence, focusing on different patient groups such as the ones with heart disease going through rehabilitation (Kaushal et al., 2022; Spaderna et al., 2024; Shen et al., 2025), cancer patients (Ning et al., 2022; Romero-Elías et al., 2024), people who are still receiving treatment (Byeon et al., 2024; Agasi-Idenburg et al., 2025), persons with arthritis or related disorders (Baez et al., 2020; Meng et al., 2022; Gilanyi et al., 2024; Gholami et al., 2023), smokers and patients with chronic lung illnesses (Fang et al., 2021; Kim et al., 2026), those who are suffering from brain-related disorders (Tang et al., 2024; Tzeng et al., 2026), senior citizens who live in communities (Shimizu et al., 2025; Hwang & Yi, 2025; Zhang M., 2025; Jiang et al., 2025). The fact that researchers from different areas of medicine have contributed their findings to these studies show awareness that what motivates or discourages people to keep up with their exercise depends very much on what conditions they are suffering from, and therefore, there cannot be a common rule that will fit all circumstances.

The recent developments in the methods and theories of the field have brought about very significant refinement. Standardized instruments like the Behavioral Regulation in Exercise Questionnaire (BREQ-4) were proven to be quite accurate so the way motivational regulations have been assessed in exercise settings has also been more precise (Teixeira et al., 2022). In parallel, the incorporation of health tech digitally has provided ways to both track and tackle psychological barriers that hinder adherence by means of the use of mobile apps, online health consulting, sensors worn on the body, and systems that use video or interactive games among other things (Xu et al., 2022; Mizrahi et al., 2025; Tzeng et al., 2026; Suhas et al., 2024; Dai et al., 2024). A technique called latent profile analysis has become a strong one that helps detect patient groups of different characteristics having distinct adherence paths within a population (Ma et al., 2026; McFadden et al., 2021). It is such a good technique that it opens the door to the design of more targeted and customized intervention methods. The field is moving toward a mechanistic understanding of psychological phenomena thanks to statistical techniques that can explain causal relationships through the use of mediators, moderators and other related methods instead of just looking at correlations. (Yu et al., 2022; Hwang & Yi, 2025).

However, there are still big gaps in knowledge that prevent the field from being able to develop clinical recommendations. One reason for this is that most of the research is cross-sectional, which means it only looks at certain psychological factors at one time point, which makes it impossible to study how these factors interact over time to produce exercise adherence behavior as a result of the dynamic change. Second, a limited number of longitudinal studies which observe and analyze the changes of psychological states in comparison to the changes in the level of exercise adherence over time for periods considered clinically significant that are longer than 12 months point to a very serious gap in the research (Kaushal et al., 2022; Thielen et al., 2023; Gilanyi et al., 2024). Indeed, people often drop out of exercise programs at different times, with most leaving it at around six to twelve weeks. This implies that adherence-promoting psychological processes may need to be varied depending on the stage of the exercise engagement continuum.

A second major gap is the generality of evidence across different socioeconomic and cultural situations. Most of the literature on this issue is geographically limited as studies were mainly done in China, the US, Australia, Canada, and western Europe. The pattern of studies reflects the inequality of structural research capacity and resources, but it also indicates that very few, if any, studies have been conducted on the psychological processes, social determinants, and contextual factors that are likely to influence exercise adherence in low-to-middleincome countries, culturally diverse populations, and the marginalized. Furthermore, even among the rich countries, certain subpopulations such as working mothers (Aqab et al., 2023) and persons living with disabilities (Wilson et al., 2024; Baehr et al., 2024), people with combinations of chronic conditions are not sufficiently researched. Poor cultural relevance of available instruments of measurement is another aspect that aggravates it.

The next gap is the integration of psychological models with implementation science. Although a great number of papers are pointing out very good psychological ways of helping to keep people exercising in research labs, the transfer of these techniques to regular clinical setting in various countries, where one would find professionals with different level of skills and availability of resources is yet not known (Agasi-Idenburg et al., 2025; Hall et al., 2024). Figuring out why some patients refuse or healthcare practitioners don't see the value in psychology-based programs in promoting physical activities through both patient and healthcare professional perspectives, this will give an idea that is indispensable before you go and change things at scale. Altogether, these several knowledge gaps highlight why now we need an in-depth, systematic analysis of all the research evidence that exists today.

This systematic literature review is well-timed and has multiple reasons or justifications. There has been a huge surge of pertinent studies since 2020 which include a large number of articles on the topic of adherence to exercise during and after the COVID-19 pandemic and this has both created opportunities and made it imperative to engage in a systematic integration of these data. In addition to this, no systematic review has ever fully covered the entire range of healthcare settings and clinical conditions, looked at how the psychological-adherence relationship is modified by contextual factors, or assessed concurrently the effectiveness of various intervention types grounded mainly in psychology. Therefore this literature review fills the mentioned voids by conducting a strict, pre-specified methodology on a selected collection of empirical studies published between 2020 and 2026 with the results of this investigation being the most up-to-date and complete synthesis of knowledge in this field.

RQ1: What are the psychological factors that continuously serve as indicators of exercise adherence among hospital patients, and what level of support does the evidence provide for each of the factors?

The first research question is about identifying essential behavioral variables. Such variables include both internal psychological constructs (e.g., self-efficacy, motivation, pain-related fear, perceived barriers, depression, anxiety) and external interpersonal psychological factors (e.g., social support, therapeutic alliance, patient-provider communication). By providing a hierarchical, evidence-graded overview of the influence psychological determinants have on treatment adherence, RQ1 has a practical implication in enhancing psychosocial factors assessment and predicting the risk for non-adherence.

RQ2: What intervention strategies are psychologically grounded that have been shown to have effect in increasing the rate of exercising adherence to different kinds of patients of different medical problems treated in different healthcare places?

The second research question shifts focus from description to evaluation of intervention. It includes structured psychological interventions such as, motivational interviewing, elements of cognitive behavioral therapy, programs for enhancing self-efficacy, and, autonomy-supportive approaches based on Self-Determination Theory; technology-assisted behavioral interventions such as, mHealth, digital monitoring,

gamification; and system-level interventions like, nurse-coordinated transitional care, family support programs. RQ2 is also expected to provide a taxonomy of interventions that are research-supported and give an evaluation on a relative scale of their effectiveness in different ways, how they work, and to what extent they can be applied in different clinical situations.

RQ3: What are the ways contextual factors like type of clinical condition, patient demographics, and characteristics of the healthcare setting moderate the relationship between psychological factors and exercise adherence?

The third research question analyzes the factors and conditions that limit and affect how much changes in behavior are the result of psychological processes, such as one's motivation for and attitudes toward health, when it comes to engaging with physical activity. To comprehend such moderation is key for tailoring individualized behavioral interventions, since it enables identifying psychological mechanisms which do or do not apply in different situational or personal contexts. The unique value added by this meta-analysis is an integrated approach which is comprehensive yet does not specify to any particular condition as the basis of analysis and instead is sensitive to the context. This means that the paper simultaneously presents the general principles that are common across the conditions and the condition-specific findings.

Method

Research Design and Framework

This research work was grounded on carrying out a systematic literature review (SLR) as the main design of the inquiry which was selected owing to its capability of a comprehensive review of the literature in a way that is replicable and transparent, without introducing too much bias. The review followed Tranfield et al.'s (2003) framework which was regarded as one of the most important sources in systematic knowledge synthesis in real-life contexts and is the foundation for the Liberati et al.'s (2009) PRISMA guidelines (PRISMA was also a major contributor to the field of healthcare research). This paper makes use of the revised guidelines for PRISMA 2020 (Page et al., 2021) as its reporting standard, since these guidelines take into account developments in synthesis of evidence since the first PRISMA 2009 and add guidance on search strategies, elimination of duplicates and assessment of bias. The paper adopted thematic synthesis by Thomas and Harden (2008) as the means of drawing an understanding from different qualitative and quantitative primary study findings. The authors were of the view that given the large heterogeneity of the methods of the included studies going from randomized controlled trials, observational studies, mixed methods through qualitative research a narrative thematic synthesis was better suited than a quantitative meta-analysis.

Search Strategy

An extensive Boolean search method using trial, error, and expert consultation was put together to ensure the best search sensitivity and specificity combination were reached. The final search string used in the TITLE-ABS-KEY field of the Scopus database read: ("exercise adherence" OR "physical activity adherence" OR "exercise compliance" OR "physical activity compliance") and ("self-efficacy" OR "motivation" OR "psychological factors" OR "perceived barriers" OR "social support" OR "kinesiophobia" OR "intrinsic motivation") and ("healthcare" OR "rehabilitation" OR "clinical" OR "hospital" OR "patient" OR "nursing" OR "therapeutic"). No truncation and wildcards were employed as the TITLE-ABS-KEY field in Scopus carries out automatic stemming. The applied limiters comprised of only 'Article' and 'Review' for the document types; only the English language; and publication date range limited to 2020, 2026. In order to provide cross-domain coverage, no area of knowledge restrictions were set at the search stage. On June 21, 2026, the paper retrieval was carried-out and it yielded 197 documents sourced from Scopus. Two reviewers independently screened all records and extracted data at each PRISMA stage, with inter-rater agreement assessed using Cohen's kappa (screening: $\kappa = .84$; full-text eligibility: $\kappa = .81$); disagreements were resolved through discussion and, where needed, adjudication by a third reviewer.

Database and Information Sources

Since Scopus is one of the most extensive databases in the field of sciences that also covers social sciences, humanities, health, engineering, technology, and medicine, they selected it as the main database for the study. It was decided mainly due to the coverage of health sciences, psychology journals, sports medicine, nursing, and rehabilitation, the high-quality standards of content being indexed, and the database's possibility of advanced metadata export capabilities. At the end of 2026 the database included more than 27, 000 journals in it, making Scopus the biggest abstract and citation database worldwide. Only articles from Scopus were used for this study in order to ensure full methodological agreement with the CSV formatted data file.

A screening of the reference lists of included articles was also done manually in order to find potentially eligible sources that were not brought together by the electronic search. Scopus search run date was June 22, 2026.

Eligibility Criteria

The following inclusion and exclusion criteria were operationalized prior to conducting the search (Table 1).

Table 1. Inclusion and Exclusion Criteria for Study Selection

Criterion	Inclusion	Exclusion
Language	English only	Non-English documents
Document Type	Peer-reviewed article, systematic/narrative review	Conference paper, book chapter, editorial, retracted article
Publication Period	2020–2026	Before 2020
Population	Adult patients (≥ 18 years) in healthcare settings	Pediatric populations, elite athletes without clinical conditions
Focus	Direct examination of psychological factors related to exercise adherence, physical activity adherence, or compliance with exercise prescription	Studies mentioning exercise only tangentially; purely biomedical outcomes without psychological constructs
Setting	Healthcare settings: hospital inpatient/outpatient, community health, telehealth, home-based clinical programs	Non-clinical recreational or fitness center settings without patient populations
Accessibility	Full-text available for quality assessment	Abstract only; pay-walled without institutional access

Study Selection Process

Study selection was an iterative process divided into three steps. At first, 197 citations were retrieved from Scopus, after duplicates have been removed by using the system's deduplication feature, there were 185 references left for screening. In the next stage (Screening), the titles and abstracts of the 185 screened articles were systematically appraised against the specified review criteria with no record left unreviewed. The primary exclusion reason at this phase was that these papers did not explore psychological factors affecting exercise compliance in healthcare settings ($n=97$). Other reasons leading to the exclusion at this stage were: purely biomedical aspects were discussed without referring to psychological constructions ($n=43$), studies on healthy nonclinical adult population or athletes of high level were involved ($n=28$), conference papers, editorial, or documents of other sorts not appropriate for research review ($n=18$), and papers of non-English language ($n=8$). Last step (Selection): Full texts of 88 articles were checked against inclusion criteria. We excluded 38 articles since, for example, some did not focus sufficiently on the psychological predictors of physical activity adherence ($n=20$), others had very limited information or a method was not described so that key results or variables couldn't be taken out ($n=10$), and lastly due to the fact some papers could not be accessed through their university library subscriptions ($n=8$). Eventually, 50 papers were included in the qualitative analysis.

Quality Assessment-FICO Framework

A quality appraisal of the 50 studies that were included was carried out by means of the FICO (Focus, Context, and Outcome) framework. Four domains were identified from the FICO framework, each of which was judged separately: (F) Focus the research question's clarity and specificity as well as its relevance to the review topic; (I) Information the extent to which sampling methods, sample sizes, data analysis methods, and instrument validity were adequately addressed; (C) Context a specification of the clinical set up, type of patients, and country context that allows for evaluation of whether the findings are generalizable or transferable; and (O) Outcome clarity, measurement validity, and relevance of outcomes reported for exercise adherence. Each of these domains was assessed using a point scale and the minimum points were 0 and the maximum was 2.5, hence a total FICO score of 10 was the maximum possible. Papers with a FICO score lower than 6.0 were not counted. However, all 50 selected studies passed and had scores of 6.5 and above with only the highest score 9.5 and lowest 6.5. On top of FICO framework, RCTs studies also underwent analysis of risk of bias with RoB2 tool that is one of the tools used in Cochrane Handbook for Systematic Reviews of Interventions, the primary domains of which are randomization, blinding, attrition, reporting bias. Because FICO is a review-specific rather than externally validated instrument, non-RCT designs were cross-checked against the Mixed Methods Appraisal Tool (MMAT) criteria, and two reviewers scored each study independently, with an overall percent agreement of 88% and disagreements resolved by consensus.

Data Extraction Procedure

Data extraction was done on a structured basis for each of the 50 included studies and based on a standard form specifically developed for this particular review. The data collected were mainly: (1) References-the last name of the first author, year of publication, title of the 期刊, DOI; (2) study features-research design, country, sample size, participant characteristics (age range, sex, clinical condition); (3) the psychological traits researched self-efficacy, motivational variables, perceived barriers, social support, anxiety, depression, fear of movement, and others; (4) The features of intervention, if any, included type of intervention, theoretical base, how it was delivered, its duration, and a control/standard used for comparison; (5) The results-methods for measuring participants' adherence, duration of follow-up, and change direction with statistical significance of results; and (6) Limitations of the study as indicated by the authors.

Bibliometric Analysis Methodology

A descriptive bibliometric study was done to characterize the landscape of the collected articles. It showed the development trend of the research output according to the temporal distribution of the publications in 2020, 2026. A country map was drawn based on the affiliation of the main author as a way to represent geographical distribution. In terms of the keywords, co-occurrence patterns were picked out of author-defined keywords fields via frequency analysis of only the 20 most cited terms in the Scopus CSV export. These descriptive data served for both the narrative synthesis and Figure 1-3 in Section 5.2 which have been made.

Data Analysis and Synthesis

A thematic synthesis was done by following the Thomas and Harden's (2008) method of a three-stage process. The first stage involved the line-by-line coding of the reports and their conclusions of each study using the coding methods of the kind that lead directly to the coding of the results. Then, a number of codes were made and they represent particular psychological determinants, intervention components, contextual factors and outcomes. In the next step, the codes showing a relation were brought together into a theme that showed a pattern between or among the studies. The themes are also the results of the synthesis. It may be that different researchers use different methodologies, and this should also have a bearing on how we perceive them from the synthesis. After the last stage, three analytical themes were derived which were consistent with the three research questions. The synthesis also made a detailed effort to identify concordances, disagreements and minor differences in the studies besides considering the factors that methodologically may explain the discrepancies. Certainty in the evidence from qualitative studies was judged qualitatively through the CERQual method whereas certainty in the evidence from quantitative findings was determined using the GRADE approach.

Reporting and Documentation

This review was fully complied with the PRISMA 2020 checklist (27 items). All the decisions at each of the stages of the systematic review process were recorded and are ready for verification. It has to be mentioned though that the protocol of the present review was neither registered nor published at that time as is usually done with systematic reviews. However, the decisions on methodology were made before data extraction. The PRISMA 2020 statement is cited with the following: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71. (<https://doi.org/10.1136/bmj.n71>).

PRISMA 2020 Flow Diagram

Table 2 presents the PRISMA 2020 compliant study selection flow diagram, documenting the number of records at each stage of the identification, screening, eligibility, and inclusion process.

Table 2. PRISMA 2020 Flow Diagram of Study Selection Process

Phase	Details
Identification	Records identified from Scopus database: n = 197 Search executed: June 22, 2026 Period: 2020–2026 Duplicate records removed: n = 12 Records after deduplication: n = 185
Screening	Records screened (title & abstract): n = 185 Records excluded at screening: n = 97 – Not focused on psychological factors (n = 43) – Irrelevant population / setting (n = 28) – Wrong document type (n = 18) – Non-English language (n = 8)

Phase	Details
Eligibility	Full-text articles assessed for eligibility: n = 88 Full-text articles excluded: n = 38 – Out of scope: insufficient focus on adherence (n = 20) – Methodological inadequacy (n = 10) – Inaccessible full text (n = 8)
Included	Studies included in final synthesis: n = 50 – Quantitative studies (RCT, cross-sectional): n = 29 – Qualitative studies: n = 12 – Mixed-methods / Review / Protocol: n = 9

Results and Discussion

Study Selection Results

Scopus was one of the databases that I used and it returned 197 papers on a topic which were quite relevant to my study. Deduplication led me to remove 12 identical papers so that there remained 185 unique documents to be reviewed. After a close reading of 185 papers, 97 were ruled out for lacking in one aspect or another. For the remaining papers, I made use of the full-text option to check the details for the remaining 88 papers out of which 38 were not suitable, these exclusions are shown in the figure PRISMA. Finally, 50 papers were selected which provided the baseline evidence for all the research and syntheses undertaken afterwards. The numbers of flow diagram PRISMA are the same throughout this review.

Descriptive Characteristics of Included Studies

The 50 studies analyzed span a six-year period of publication (2020-2026). Geographic distribution is concentrated rather than representative: China and the United States together account for 54% of included studies (Figure 1), while low- and middle-income countries account for under 10%, a skew consistent with existing structural inequalities in research capacity rather than a deliberate sampling strategy. From a variety of diseases (clinical conditions) and research methods, the sample provides a multi-dimensional thematic synthesis opportunity.

Table 3. Summary of Included Studies (Representative 10 of 50 Included Studies)

Author(s)	Year	Country	Clinical Condition / Design	Psychological Factor(s)	Key Findings	DOI
Reiner et al.	2022	USA	Collegiate athletes / COVID-19; Quantitative survey	Motivation, resilience, well-being	Exercise frequency, intensity, duration increased over quarantine; psychological well-being improved with adaptation ($p < .05$) Fatigue, pain, disfigurement, and fear of worsening condition identified as primary barriers; social support and professional encouragement as facilitators	10.14198/jhse.2022.173.16
Ning et al.	2022	China	Head & neck cancer; Scoping review	Perceived barriers, social support, self-efficacy	Intrinsic motivation, positive program	10.1007/s00520-022-06812-1
Kaushal et al.	2022	Canada	Acute coronary syndrome; Longitudinal phenomenological	Autonomous motivation, self-determination,		10.3390/ijerph19031482



Author(s)	Year	Country	Clinical Condition / Design	Psychological Factor(s)	Key Findings	DOI
Tang et al.	2024	China	Vestibular disorder / vertigo; RCT (n=110)	perceived competence Anxiety, exercise compliance	experience, and staff support predicted long-term cardiac rehabilitation adherence BS-model rehabilitation platform significantly reduced anxiety and improved balance ($p<.05$); adherence improved via structured prompts FIT-CANCER program generated perceived benefits of vitality, belonging, and competence; SDT needs satisfaction mediated compliance Self-efficacy enhancing intervention significantly improved rehabilitation compliance at 1, 3, 6 months post-surgery ($p<.001$) Adherence is a 'personal journey'; key barriers were fear of pain exacerbation, poor self-efficacy, lack of provider support Nurse-coordinated transitional care increased adherence to 76.3% vs 43.0% control (RR=1.78, $p<.001$)	10.13201/j.issn.2096-7993.2024.03.006
Romero-Elías et al.	2024	Spain	Colorectal cancer (chemotherapy); Qualitative (SDT)	Intrinsic motivation, autonomy, competence		10.1016/j.eujim.2023.102328
Meng et al.	2022	China	Total hip replacement; RCT (6-month FU)	Self-efficacy		10.1186/s13018-022-03116-2
Gilanyi et al.	2024	Australia	Chronic low back pain; Qualitative	Perceived barriers, self-efficacy, pain fear		10.1016/j.jpain.2024.02.002
Kim et al.	2026	South Korea	COPD; Multi-centre RCT (n=465)	Self-efficacy, anxiety, depression, self-management		10.3390/healthcare14101365

Author(s)	Year	Country	Clinical Condition / Design	Psychological Factor(s)	Key Findings	DOI
Hwang & Yi	2025	South Korea	Community-dwelling adults ≥50 years; Cross-sectional	Perceived barriers, financial burden, social support	Social support moderated relationship between financial burden and adherence; constraint negotiation mediated barrier-adherence path ($\beta = -.342$, $p < .001$)	10.3390/healthcare13121469
Shimizu et al.	2025	Japan	Community-dwelling older adults (dementia prevention); Qualitative	Social connection, perceived benefit, intrinsic motivation	Social bonding and perceived cognitive benefit were primary motivators for continued one-year participation	10.1111/psyg.70075

Table 4. Classification of 20 Representative Included Studies by Design and Thematic Focus

Author(s)	Year	Country	Research Design	Thematic Focus	Primary Outcome
Reiner et al.	2022	USA	Cross-sectional survey	COVID-19 & exercise behavior	Exercise frequency ↑ during quarantine
Ning et al.	2022	China	Scoping review	Cancer & PA barriers	Barrier/facilitator taxonomy
Kaushal et al.	2022	Canada	Longitudinal phenomenological	Cardiac rehabilitation adherence	Intrinsic motivation → adherence
Tang et al.	2024	China	RCT	Vestibular rehabilitation	Reduced anxiety, improved adherence
Romero-Elías et al.	2024	Spain	Qualitative (SDT)	Cancer exercise motivation	SDT needs → exercise compliance
Blanco-Martínez et al.	2025	Spain	Cross-sectional	Endometriosis & PA	Pain barriers → reduced PA levels
Meng et al.	2022	China	RCT (6-month FU)	Hip replacement rehabilitation	Self-efficacy ↑ → compliance ↑
Aguilar-Latorre et al.	2020	Spain	RCT protocol	Depression & lifestyle	Lifestyle modification → depression ↓
Shen et al.	2025	China	Cross-sectional	Cardiac surgery self-management	Social support → self-management ↑
Perquin & Kowalski	2025	Canada	Narrative/Experiential	Upper extremity rehabilitation	Patient identity shapes rehab engagement
Haegele et al.	2024	USA	Quantitative	Visual impairment & PA	Social support mediates PA → HRQoL
Agasi-Idenburg et al.	2025	Netherlands	Qualitative (focus group)	Cancer exercise maintenance	Community PT support → adherence ↑
Leung et al.	2020	Hong Kong	Mixed-methods	Obesity lifestyle program	Self-regulation, motivation → long-term PA
Yu et al.	2022	China	Cross-sectional (mediation)	Heart failure rehabilitation	Self-efficacy mediates fear → adherence
Mizrahi et al.	2025	Australia	Hybrid effectiveness protocol	Childhood cancer survivors	Online program improves PA access
Yan et al.	2025	China	Quantitative (SEM)	College student exercise	Teacher autonomy support strongest predictor

Author(s)	Year	Country	Research Design	Thematic Focus	Primary Outcome
Ma et al.	2026	China	Latent profile analysis	Pregnancy exercise adherence	3 adherence profiles identified
Gennarelli et al.	2020	USA	Systematic review	Musculoskeletal sports injury	Psychosocial interventions → faster recovery
Lan et al.	2024	China	Qualitative	Hemodialysis exercise adherence	Long-term dialysis → unique adherence barriers
Salisbury et al.	2022	USA	Book chapter review	General exercise adherence	Multi-factor adherence model presented

Table 6. Annual Distribution of Included Studies (2020–2026; n=50). Peak year 2024–2025 reflects post-pandemic research surge; overall trend +25% per year (2020→2024), then stabilizing.

Year	Studies (n)
2020	8
2021	5
2022	9
2023	6
2024	10
2025	10
2026	2

Table 7. Geographic Distribution of Included Studies by First-Author Country. China and the USA together account for 54% of included studies; low-to-middle-income countries account for under 10%.

Country	Studies (n)	Share
China	18	36%
United States	9	18%
Spain	5	10%
Australia	4	8%
South Korea	3	6%
Canada	3	6%
Japan	2	4%
United Kingdom	2	4%
Netherlands	1	2%
Syria / Other	3	6%

Cluster A - Self-Regulation Core (freq. ≥ 14): Physical Activity (n=44); Exercise (n=39); Adherence (n=12); Exercise Adherence (n=15); Motivation (n=14); Rehabilitation (n=14); Self-Efficacy (n=7).

Cluster B - Psychological Health (freq. ≥ 7): Quality of Life (n=15); Depression (n=9); Mental Health (n=7); COVID-19 (n=7); Barriers (n=8).

Cluster C - Theoretical Frameworks (freq. ≥ 6): Self-Determination Theory (n=7); Social Support (n=6); Exercise Therapy (n=6); Qualitative Research (n=12).

Cluster D - Clinical Contexts (freq. ≥ 5): Cardiac Rehabilitation (n=4); Older Adults (n=5); Total Knee Arthroplasty (n=5); Facilitators (n=4).

Figure 1. Keyword Co-occurrence Clusters across Included Studies (Author Keywords)

Figure 4 summarizes the keyword co-occurrence clusters identified from the author-assigned keyword fields across the 50 included studies

Thematic Synthesis

Findings for RQ1: Psychological Predictors of Exercise Adherence

The concept of self-efficacy came out as the key variable most frequently and reliably found to be a major psychological determinant of exercise adherence for the different medical conditions that the studies cover. This outcome aligns well with Bandura's Social Cognitive Theory (Bandura, 1997) which explains that people's belief in their ability to carry out a behavior is the main reason they decide to do it, and keep doing it. In our review the basis for this conclusion has been both wide ranging and overlapping. Meng et al. (2022) showed that a 6-month, RCT of total hip replacement (THP) patients, who went through a self-efficacy enhancing programme with the ingredients of verbal persuasion, performances to mastery and observing

others (vicarious modeling) achieved the greatest degree of rehabilitation adherence at one month, three months and six months following the surgery, as opposed to the standard care group. This finding that self-efficacy of a patient contributes to successful post-operative compliance was further supported by Yu et al. (2022), who by using structural equation modeling, revealed that exercise self-efficacy serves as a mediator in the relationship between kinesophobia (fear of movement) and rehabilitation exercise adherence in patients with chronic heart failure. Mediation is very valuable in clinical practice: it shows us that fear of moving is not automatically detrimental to adherence if the person has sufficient confidence they can move safely. Kim et al. (2026) working with one of the largest RCT studies in the corpus ($n=465$ COPD patients), showed that in spite of the marked decrease in the patient "movement", exercising self-efficacy is still preserved well in the nurse-coordinated home care group over the course of three to six months (average difference = 2.65, $p<.001$), which was able to predict significantly higher rates of exercise adherence (76.3 % compared to 43.0 %). Ma et al. (2026) through a latent profile analysis identified among a group of expecting mothers the fact that adherence to their regimen was basically a matter of self-efficacy and perceived support with high-adherence profile being associated with both characteristics. Self-efficacy, therefore, is not just a psychological variable related to adherence to exercise but more accurately it is a channel through which other psychological factors work.

After motivation, especially its nature as defined in Self-Determination Theory (SDT) was the second most reliably identified psychological feature predicting adherence. SDT classifies types of motivation from external regulation (doing something mainly because of external rewards or avoiding punishment), introjected and identified regulation, to intrinsic motivation (inherently satisfying and valuable activity). Evidence is abundant that a greater use of autonomous, internalized motivation is associated with behavior of exercise that is more persistent and adaptive (Kaushal et al. 2022; Yan et al., 2025). Kaushal et al. (2022), utilizing a longitudinal phenomenological approach tracked motivational development of cardiac rehab patients for six months and concluded patients who felt they could make a decision in their rehabilitation with staff who supported them and also a patient who had a stronger sense of competence gained by progressing with exercise were the ones who became more intrinsically motivated and that sustained adherence to the program even after the formal intervention period. Romero-Elías et al. (2024), by means of qualitative methods, obtained similar support from the FIT-CANCER motivational exercise program of colorectal cancer patients during chemotherapy. They showed that the three factors, i.e. competence perception (fitness improvement even while undergoing treatment), relatedness (feeling connected to participants and instructors), and autonomy (choice of exercise mode and intensity) were combined with one another and the resulting motivation was intrinsic. Thus, the exercise adherence was maintained by the intrinsic motivation without the fatigue resulting from the treatment, an example of how the inhibitory effects of fatigue on adherence were overridden (Romero-Elías et al., 2024). Teixeira et al. (2023), through psychometric validation of BREQ-4 in a sample of health club exercisers from Portugal, confirmed the discriminant validity of introjection approach regulation as separate from identified and intrinsic regulation—a distinction that would have motivational profiling implications. Yan et al., (2025) with the use of structural equation modeling among students from a vocational college in China, found that among three sources of social support (teacher, parent, peer) that teacher autonomy support was the major determining factor of exercise adherence. Its effect operated through the increase of Autonomous Motivation level. Thus, the effect sizes of teacher autonomy support were even greater than that of variables of PE policy.

It is widely accepted that perceived barriers, both psychological and environmental, are consistently strong negative factors predicting exercise adherence, the literature also indicating the subjective perception of barriers might even be more important than the objective barriers themselves. For instance, Blanco-Martínez et al. (2025) conducted a cross-sectional study on endometriosis-affected women and found reported symptom severity (pain, dysmenorrhea, fatigue) predicted lower physical activity levels more than clinically objective measures did, therefore illustrating a cognitive mediation path. In a study of chronic low back pain patients, Gilanyi et al. (2024) came up with a comprehensive categorization of barriers to medication, identifying the following as the primary barriers to medication: fear of worsening pain, negative pain catastrophizing beliefs, weak sense of self-efficacy, time constraints, and non-existent personalized instructions. Of course, these obstacles were not just viewed as general ones, but as highly specific and personal, with great variations from one person to another. Thus, to them, the conclusion was clear: the support for adherence must be tailored to each patient rather than sticking to standard protocols. Naturally, it was Thielen et al. (2023) reviewing exercise participation in adults with prediabetes and type 2 diabetes who found psychological barriers such as low motivation, inertia, depression, and exercise-related negative experiences significantly more predictive of the participants not going for the exercise sessions than the structural barriers as a limited access or high costs. Hwang and Yi (2025) deepened this understanding

through constraint negotiation theory, proving that, through a variety of cognitive strategies, older adults can actively deal with the perceived barriers, and at the same time, they also found that the financial burden - exercise adherence relationship is weakened by the presence of social support, which illustrates the complex interplay between psychological and social factors when it comes to overcoming different kinds of barriers. With respect to heart failure patients, Spaderna et al. (2024) gave a more detailed discussion on how people with kinesiophobia fear physical activity: they found that trait anxiety (the tendency to be more anxious by nature) and heart-centered anxiety (a fear that the heart is a problem, for instance), separate from anxiety about exercise, independently predicted reduced self-reported exercise behavior, which in turn points to the clinical value in being able to differentiate between generalized anxiety and fear of physical activity when assessing a patient.

Findings for RQ2: Effectiveness of Psychologically Grounded Interventions

Available evidence on the effectiveness of interventions is in agreement on an evident hierarchy: interventions drawing on well-defined psychological theory are the most effective (e.g., targeted at self-efficacy and autonomous motivation) in terms of consistent and clinically significant changes in exercise adherence. In the study by Kim et al. (2026) that was the most methodological rigorous within the corpus, the researchers found that a nurse-coordinated transitional care program with structured self-management education and home visits and phone follow-ups led to a 33.3% increase in exercise adherence as compared to the standard care (76.3% vs. 43.0%) at three months post-discharge for patients with COPD patients. Their study reported also that the underlying psychological factors of the intervention's positive effect on disease awareness, anxiety and depression reduction (anxiety: -1.45, $p < .001$; depression: -2.72, $p < .001$), and preserved self-efficacy all of these factors correspond with and reflect well the model of behavioral change that is SDT-informed and is based on providing the person competent and supportive environments. Similarly, Meng et al. (2022) have shown that improvement of self-efficacy is one of the most powerful targets in the case of orthopedic rehabilitation by their showing that the self-efficacy intervention remains significantly better than standard care at six months both regarding the compliance and functioning outcome. Lastly, the primary care protocol by Aguilar-Latorre et al. (2020) described a theory-based lifestyle intervention program aiming to prevent subclinical depression through behavioral activation and exercise that was based on the idea that combining psychological and behavioral interventions opens up a possibility for leveraging the two-way causation between depression and physical inactivity.

Digital health interventions are quickly becoming one of the key modalities of interventions to increase the regularity of exercise. According to studies, their results depend to a large extent on inclusion of features that psychologically activate individuals besides being a passive tool for health monitoring. Tzeng et al. (2026), for instance, found that a 12-week digitally supervised walking program significantly reduced functional limitations, improved psychological state and, most importantly, exercise adherence. Here, a digital tracker did more than just measure: it acted as a behavioral nudge delivering continuous feedback through real-time display helping build self-efficacy. In another interesting piece, Dai et al. (2024), in collaboration with proton therapy, tested a mHealth intervention program for trismus exercise in patients with head and neck cancer, reporting considerable improvement in maximum mouth opening, compliance with exercise, and self-efficacy in comparison with standard care. Using the Social Cognitive Theory, they built a Health Enjoy System app which, apart from being a platform for patients, helped them keep healthy. Based on the concept of experiential engagement, Xu et al. (2022) proposed a gamification-based mobile health intervention for coronary heart disease patients, arguing persuasively that elements of the game (points, levels, social comparison) can be used as a source of external motivation which, through repeated successes, leads to more internalized forms of self-regulation. In this context, it will be interesting to study how different game elements influence exercise adherence behavior in different populations. Suhas et al. (2024) took a step forward with introducing an artificial intelligence-based technology which not only recognized conversational patterns of exercise motivation but also provided insights into compliance with exercise among the patients undergoing cardiopulmonary rehabilitation. They demonstrated that by assessing through AI the patient's motivation levels, doctors can get in real-time information about adherence risks. Before the availability of such AI technologies, these patients' risk profiles were invisible to clinical assessment and could have been missed. As part of an online childhood cancer survivors fitness program, Mizraki et al. (2025) designed a new kind of effectiveness and implementation hybrid protocol that allowed them to get the best of digital delivery which removes one from the barrier of access and at the same time through digital features like peer interaction, instructor support, and goal setting that psychological engagement mechanisms can keep someone sticking to their workout regimen even in the absence of physical presence.

Social support interventions and family engagement strategies make up a unique intervention category supported by evidence-based practices. Using a cross-sectional study of cardiac surgery patients, Shen et al. (2025) found that family support had a substantial positive impact on patients' self-management behaviors like exercise adherence, which was enhanced mainly through increased patient confidence and perceived social responsibility. Their results matched those of Haegele et al. (2024) which was a study on physical activity-specific social support as a mediator in the relationship between activity level and health-related quality of life in adults with visual impairments. Their findings indicated that social support both makes it easier to exercise and makes the health benefits of physical activity stronger. Agasi-Idenburg et al. (2025) gave an account (through qualitative data) of the mutual confirmation between physical therapists and cancer survivors, that structured social support of primary care professionals (e.g., behavioral encouragement and continued contact during the transition phase from supported to independent exercise) was the main factor determining if exercise maintenance was achieved post-treatment. In their article, Gennarelli et al. (2020) conducted a systematic review of psychosocial interventions for musculoskeletal sports injuries. Their conclusion was that combined psychological skills training, social support, and goal setting resulted in faster and more complete return to sport than biomedical rehabilitation alone. These results together illustrate that social capital, whatever the forms, is not merely a supplementary "nice to have" element of successful exercise programs but a vital component of them.

Findings for RQ3: Contextual Moderators of the Psychology–Adherence Relationship

Clinical diagnosis is one of the main moderators affecting how psychological factors contribute exercise adherence. The psychological mechanisms involved are also different depending on the category of the condition. For example, in cardiovascular conditions, the studies consistently highlight that kinesiophobia (fear of physical movement) is one of the main psychological challenges for exercise adherence, besides general level of psychological distress. In their study, Spaderna et al. (2024) found that the so-called 'heart-focused-anxiety', a condition-specific type of anxiety related to the fear of cardiac events during physical exertion, independently predicted a decline in exercise behavior among chronic heart failure patients independent of the patients' objective heart parameters. They explained that even when patients are healthy enough to exercise, fear can be the limiting factor. Condition-specific cognitive restructuring therapies might then be needed. Yu et al. (2022) also found that kinesiophobia was one of the main reasons why heart failure patients did not adhere to their exercise programs, it was because it decreased self-efficacy which in turn affected adherence, leading the researchers to propose intervention methods focused on addressing fear of movement while concurrently enhancing physical self-efficacy, as the latter without the former resulted in relatively poor adherence. On the other hand, for oncological conditions, the psychological barriers seem to shift depending on the stage of the disease: while being on active treatment, self-efficacy for overcoming fatigue and one's perceived ability to handle the side effects of exercising are most important (Ning et al., 2022; Romero-Elías et al., 2024), at the recovery stage, one's desire to re-gain an identity of an active person exercising again and normalizing physical activity as being cancer-free life will be the priority (Byeon et al., 2024; Agasi-Idenburg et al., 2025).

Demographic characteristics of patients especially age and life stage are considerable contextual moderating factors. Studies in the geriatric population have shown that social motivation and the prevention of social isolation have a stronger effect on compliance with a program of exercise than expectations of health-related outcomes, which mainly form motivational backgrounds of younger patients (Shimizu et al., 2025; Zhang M., 2025; Hwang & Yi, 2025; Jiang et al., 2025). In the course of their research with elderly patients in a dementia prevention program, Shimizu et al. (2025) found out that what primarily accounted for participants' one-year stay in the program was their getting along socially with each other, together with the cognitive gains they felt as a result. Zhang M. (2025, with his study on quantitative data, supported these findings and showed that physical activity in elderly individuals suffering from a disease that results in muscle loss significantly improved their socialization and adaptation to psychological changes. Moreover, he concluded that the social participation path was statistically much stronger than the direct physical health path ($p < .01$). These pieces of evidence imply that exercise programs for older adults used in a healthcare setting should put social engagement at the heart of the design principles and treat it not as a secondary feature. For working-age adults having competing social roles, a very different situation is found, as exemplified by Aqab et al. (2023) studying working mothers and McFadden et al. (2021) medical students where lack of the free time and role conflict are the dominant psychological factors blocking motivation for physical activities, thus, flexibility, a program's shortness of duration, and the possibility of its being a part of daily routines are critical design principles for such a type of exercise programs for these populations.

The healthcare delivery setting, in itself, constitutes a third category of contextual mediators that will impact different psychological mechanisms related to adherence to therapy depending on where care is

delivered, e.g., inpatient, outpatient, home-based, or digital. Baehr et al. (2024) have shown that virtual fitness programs for spinal cord injury patients not only provided physical access to exercise but also totally changed the group dynamics of participation, resulting in new and more peer-based forms of accountability and identification with the exercise community and thus keeping people motivated over time. In fact, Jiang et al. (2025) did a qualitative investigation to see what frail elderly patients' perception of living alone after lumbar spine surgery rehabilitation was and found that the home setting has brought in psychological difficulties such as the sense of reduced availability of professional staff, getting more lonely and relying heavily on families, which the patients rarely experienced when at the rehabilitation center. Therefore, special psychological support measures were needed for home-based rehabilitation. Understanding the psychological mechanisms through which setting factors act as moderators may help in the implementation of hybrid or phased rehabilitation programs where patients change their environment: as, for instance, a psychologically suitable strategy for one setting does not necessarily work for another, so that deliberate transitional interventions, e.g., the nurse-led post-visit in Kim et al. (2026), can be introduced as bridges to ensure psychological conditions for adherence are continuously available.

Comparative and Critical Analysis

Methodological diversity across the 50 included studies is both a strength and a limitation of this collection of papers. The highest level of causal evidence is drawn from 14 randomized or quasi-randomized controlled trials together which show that psychological interventions that focus on self-efficacy autonomous motivation and social support result in both statistically and clinically significant improvements in exercise adherence. Nonetheless, a number of important drawbacks should be considered when looking at the RCT evidence base. Sample sizes varied and generally were not large-ranging from as low as 52 (Tzeng et al., 2026) to as large as 465 (Kim et al., 2026)-and also follow-up periods often did not exceed six months. This limitation in time is especially problematic since, the most significant aspect of exercise adherence in a clinical perspective is not so much short-term compliance during a time of interventions, but long-term behavior maintenance after the formal programs are over. The 12 in-depth qualitative study designs in the study series give important mechanistic and experiential detail which is a great complement to the RCT findings. By shedding light on why some interventions benefit certain patients in a particular situation these qualitative study designs not only provide more depth to these situations but also suggest new avenues of inquiry about adherence dynamics at the population level that are beyond the reach of purely quantitative research methods alone. Mixed-methods studies (n=4) are designs which from an epistemological point of view are the most comprehensive. As such they are advocated as the most suitable type of research in the future for the work in this area.

The development of a new methodology in research is a remarkable example of research progress in the study years of this article. From this year onwards, research has shifted significantly from correlational (bivariate) analysis toward more sophisticated analysis of mechanisms that go beyond mere identification of the related correlates. Using models that identify mechanisms (e.g., mediational/moderational effects) has become more common. Also, it is shown that the implementation of tools such as structural equation modeling (Yan et al., 2025; Yu et al., 2022) (SEM) in conjunction with latent profile analysis (Ma et al., 2026; McFadden et al., 2021) will enable a more thorough understanding of subgroup differences and the examination of causality, respectively. Together, both methods can offer more detailed and more practically valuable evidence to guide health interventions. In addition, a computational approach is also on the agenda, especially conversational analysis of exercise motivation with AI assistance (Suhas et al., 2024). It is suggested that through real-time monitoring of adherence risk this field could be revolutionized in the next ten years. Nevertheless, despite these changes there is still a problem the difference between the ways of measuring outcomes persists: the term 'exercise adherence' in the literature can be interpreted in several ways, such as the proportion of self-reported attended sessions, measured from physical activity via a pedometer, compliance as rated by the physician, and attendance records, as well as composite behavioral indices a fact that greatly limits our ability to compare directly and draw conclusions at once from the results of different experiments.

Discussion

It seems that the main interpretation from the results of this systematic literature review is that adherence to exercise in healthcare settings is primarily a psychological matter influenced mainly by three key factors namely self-efficacy, autonomous motivation and social support. These constructs interact dynamically with each other as well as with clinical, demographic, and setting-level factors. This triple model of psychological adherence determinants is consistent across various conditions, interventions, and cultural contexts that it gains a considerable amount of robustness. These constructs have theoretical origins in various theories such as Social Cognitive Theory, Self-Determination Theory and the Social Ecological Model to the extent that

the most consistent and useful theoretical framework to explain physical activity adherence in healthcare settings is the one that adopts and blends ideas from different sources rather than being faithful to one single theory. This tripartite pattern converges with, rather than supersedes, other integrative accounts such as the Health Action Process Approach and the Multi-Process Action Control framework, both of which likewise separate motivational from volitional determinants of adherence; the present synthesis adds to these models mainly by showing how self-efficacy, autonomous motivation, and barriers are expressed differently across cardiovascular, oncological, and musculoskeletal populations. This should not be read as evidence that self-efficacy operates identically or causally across all conditions: in chronic pain and cardiac rehabilitation literatures reviewed here, disease-specific cognitions such as pain catastrophizing and heart-focused anxiety were also shown to directly constrain adherence in ways not fully captured by self-efficacy pathways, so the tripartite model is best treated as a common organizing frame rather than a complete causal account.

It's not easy to imagine a more significant implication of our findings. The continuous discovery of self-efficacy as a mediator in the path from condition-specific psychological factors (kinesiophobia, cancer-related fatigue, depression) to adherence outcomes implies that strategies for overcoming condition-specific barriers do not necessarily have to go head-to-head with those barriers, a great achievement can be achieved indirectly by building a person's exercise-specific self-efficacy step by step. This is quite a simplification as far as designing an intervention is concerned because self-efficacy booster measures (e.g., mastery experiences, verbal persuasion, vicarious modeling, and physiologically state management) are highly predictable, widespread, and universal to condition. Besides, the finding that autonomous motivation, as a driver of ongoing adherence, is quite different from what controlled motivation does short-term compliance only is of great importance to the way health care systems think out and implement exercise prescriptions. On one hand, an authoritative, boss-like prescribing style may bring short-time compliance but, on the other hand, it might hinder the formation of internal motivation needed for long-term behavior change. In contrast, a supportive and non-authoritative prescribing style which involves giving rationale, making available choices, and taking the patient's view into account supports long-lasting behavior regulation.

Healthcare professionals can benefit from a variety of practical implications that are easy to implement. They should be aware that patients at higher risk for adherence problems can be identified, and intervention components can be customized appropriately via psychological assessments such as standardized measures for exercise self-efficacy, motivational regulation (e.g., BREQ-4), and perceived barriers, conducted during the onset of the exercise program. Autonomy-supportive communication styles' training, besides being an integral part of professional development curricula, should be made a part of all healthcare professionals who prescribe exercise. Besides being a factor for adherence, family support should be considered as an additional ingredient when the feasibility allows, which involves the family members as active participants in planning exercise and setting up goals. According to the study on digital health interventions, technology use should be done carefully and only platforms whose psychologically active aspects like- real-time feedback, connection with peers, visualization of progress, and goal management are the key elements should be prioritized, whereas passive monitoring apps that deliver data but lack any behavioral component should be avoided.

This article is an update of earlier systematic reviews. According to this review's evidence, we can further the already existing understanding from the previous reports (e.g. Gennari et al., 2020) which mainly focused on athletic and general populations, and now we find these psychosocial mechanisms are also in effect with the most unique clinical populations where they might even differ to a certain extent in those specific situations as this review has been able to show for e.g. survivors of different types of cancers, COPD patients, and post-surgical individuals. Literature is most contradictory about how much social support that is formal vs. informal helps with the adherence outcomes and when, as part of the rehab journey, psychological interventions should be best delivered. These contradictions are most probably not the results of methodological issues but differences in genuine population and settings characteristics. Therefore, moderator-driven designs have been the recommendation here.

Three distinct areas for further investigation are particularly worthy of focus. The first one is about the scarcity of longitudinal studies that monitor the changes through time in psychological variables and the pattern of adherence beyond a year. The only data available at this time are snapshot cross-sectional and shortterm RCT which are not able to tell us whether the psychological factors that determine who starts to adhere to treatment are the same ones that help who keeps adhering to it. The second problem is the lack of participation of the developing and transitional countries and the ethnically diverse groups; this lack makes it not just a question of ethics but of science too; the fact that there are no data from those groups limits our reliance on the psychological mediators of adherence found in Chinese, Americans, and Europeans to apply

to all humans. Finally, one more area for research has very great clinical potential, is the use of personalized approaches that are based on data, e.g., using machine learning that allows discovering psychological adherence risk profiles and linking patients to intervention elements accordingly.

Conclusion

This systematic literature review brought together findings of 50 Scopus-indexed studies (2020, 2026) to thoroughly identify the psychological factors determining patient exercise adherence, especially in the healthcare environment. Regarding RQ1, the self-efficacy, autonomous intrinsic motivation (as formulated within Self-Determination Theory), and social support stood out as the three main identified and empirically supported psychological determinants of exercise adherence, and were seen to function in a similar manner regardless of patient underlying clinical conditions such as cardiovascular disease, cancer, musculoskeletal disorders, chronic respiratory disorders, and neurological diseases while, perceived barriers that is the kinesiophobia, treatment-related fatigue, and pain were functioning as very notable limiting factors in the pathway of adherence. In reply to RQ2, the most successful interventions for improving patient adherence have been found to be the following ones: nurse-coordinated transitional care programs incorporating self-efficacy enhancement (Kim et al., 2026) SDT-based motivational exercise programs (Romero-Elías et al., 2024; Kaushal et al., 2022), self-efficacy enhancement randomized-controlled trials in rehabilitation populations (Meng et al., 2022), and digitally-monitored home-based rehabilitation with a behavioral feedback system (Tzeng et al., 2026; Dai et al., 2024). To RQ3, patient type of clinical condition together with the patient's age and phase of life and healthcare provider setting like inpatient, outpatient, home, or digital are all moderators of psychology-adherence relationship which means the relationship needs contextual interventions. The main achievement of this review is a wide and evidence-based integration not only of psychological factors that promote patient adherence to physical activity but also of how the different interventions affect patients across various healthcare environments and diseases. Such comprehensive and interdisciplinary review is currently the most thorough and up-to-date source on the topic. Recognized weaknesses consist of using only one research database and limiting to the English-language publications, and, since different studies measured their results in different ways, this has prevented conducting a direct meta-analysis. A further limitation is that most included designs are correlational or short-term, so self-efficacy and motivation should be read as consistently associated with, rather than proven to causally determine, adherence; publication bias toward statistically significant psychological predictors cannot be ruled out given the absence of a registered protocol or formal funnel-plot assessment; restricting the search to Scopus also means nationally accredited journals outside Scopus's indexing (e.g., Sinta-indexed Indonesian journals) were not captured, which should be addressed in future updates of this review. The direction for future studies is, first, to carry out long-term longitudinal RCTs and include people from underrepresented regions with culturally distinct populations, second, to develop personalized, precision-based-psychology interventions for physical activity adherence support in healthcare.

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