

Searching for alternative health and social care integration measurement tools – a rapid review of the existing systematic models

Samuli Tikkanen and Pekka Räsänen

Department of Social Research, University of Turku, Turku, Finland

Timo Sinervo and Ilmo Keskimäki

Finnish Institute for Health and Welfare, Helsinki, Finland

Merja Sahlström

Finnish Centre for Client and Patient Security, Helsinki, Finland

Tiina Pesonen

Finnish Institute for Health and Welfare, Helsinki, Finland, and

Hanna Tiirinki

Department of Social Research, University of Turku, Turku, Finland

Abstract

Purpose – Health care integration is crucial in improving service equality and patient outcomes. However, measuring integration between the health and social care sectors remains challenging. This article aims to review existing systematic models to identify alternative health and social care integration measurement tools. The review focuses on models that involve systematic planning and long-term cooperation across different organizational sectors.

Design/methodology/approach – The study examines various dimensions and elements of integration, including process, outcome and structural measures. It compares different tools used to measure social and health care integration, such as the Rainbow model, Balanced Scorecard (BSC), Scorecard, PRISMA, SCIROCCO, integRATE, health-data simulation (HSIM) and the model developed by Ahgren and Axelsson. The analysis includes both empirical studies and theoretical frameworks.

Findings – The findings highlight the importance of standardized measurement methods to assess the impact of integration initiatives on patient outcomes, healthcare costs and the quality of care.

Originality/value – The review contributes to the ongoing discourse on social and health care integration, particularly in the Nordic context. The results can inform social and healthcare providers, policymakers and researchers in evaluating and improving integration initiatives.

Keywords Integrated health and social care, Health and social care, Integrated healthcare, Health care integration, Measurement tools

Paper type Literature review



1. Introduction

Health care integration has become an increasingly important topic in healthcare delivery systems worldwide (Bautista *et al.*, 2016). Integrating health and social care services is considered a critical method for improving equality of services (Nummela *et al.*, 2019). Integrating healthcare services is essential to improve patient outcomes, enhance the quality of care and reduce healthcare costs. Health care integration refers to the coordination and collaboration of various providers and services to deliver comprehensive and seamless patient care (Armitage *et al.*, 2009). Health care integration aims to provide the proper care at the right time, in the right place and by the right provider. Clients who require multidisciplinary services often use both social and health care services, and thus, integration between different sectors is more important from orientation, effectiveness and cost viewpoints (Tiirinki *et al.*, 2022).

While there is widespread recognition of the importance of health and social care integration and even health care integration, there is still no consensus on measuring integration between different care sectors. The lack of consensus on measurement methods has resulted in inconsistencies in the research findings on health care integration, making it difficult to draw meaningful conclusions or make informed decisions about the effectiveness of integration initiatives.

Therefore, it is essential to have a transparent and standardized method of measuring integration in healthcare to better understand its impact on patient outcomes, healthcare costs and the quality of care. By standardization we mean a measurement tool that produces reproducible and comparable data that is valid for, for example cross-country analysis. This paper reviews the existing literature to explore the different methods of measuring integration in social and health care between various sectors. Our approach is novel in this sense as we restrict our focus to particular types of integration processes, which involve systematic planning and long-term cooperation across different organizational sectors. This paper is written with the Nordic context in mind, where health and social care integration is considered a key aspect in order to provide equal services and keep the costs of the welfare state from rising due to the aging populations.

We apply a rapid research approach to investigate prior research on this topic. Rapid reviews can be used to streamline the methods of systematic reviews, still providing concise results, for example, policy proposals (Watt *et al.*, 2008) or respond to acute crises such as coronavirus disease 2019 (COVID-19) (Brooks *et al.*, 2020; Mullins *et al.*, 2020; Webster *et al.*, 2020). This paper will compare the existing set of tools for measuring social and health care integration, help to understand different standardized measures and improve the evaluation of integration initiatives. The general pitfall of a rapid review is a raised risk of bias due to rapid reviews generally having fewer researchers going through the searches or appraising the quality of the studies selected (Tricco *et al.*, 2015).

Overall, the findings from this review will contribute to the ongoing discourse on social and health care integration in the Nordic context that social and healthcare providers and researchers can utilize to evaluate integration initiatives effectively.

2. Definitions and approaches to integration

2.1 Definitions of integration

In a more general sense, integration combines separate elements into a singular whole. Integration is “glue” that binds separate entities together to pursue common goals and optimal results (Kodner and Spreeuwenberg, 2002).

Integrated care is a somewhat undefined general concept that aims to provide coordinated and comprehensive care to individuals by bringing together different health care sectors and services (Bautista *et al.*, 2016). Integrated care can be seen and measured from a variety of perspectives, such as care coordination oriented flows of services (Wu *et al.*, 2019), as a tightly

knit networks of care institutions (Ahgren and Axelsson, 2005) or client satisfaction as recipients of care services (Elwyn *et al.*, 2015). The common factor is often integrated in the more general sense, bringing together elements that used to be separate.

Historically care has been a field with divided working methods and cultures between different sectors. Especially from a managerial perspective, integration between health and social care is vital when planning a well performing health care system (Kodner and Spreeuwenberg, 2002). Measuring integration will help understand the realities of the system, whether it is truly more efficient, economically sustainable or provides a better service to the patient. Due to health care being a large and often somewhat decentralized system, with multiple roles and processes to compare, it can be a ruthless task to measure integration since there is not a singular standardized approach to do it.

Integration can be measured using various methods, including process, outcome and structural measures (Ahgren and Axelsson, 2005). Process measures focus on the actions taken by service providers, such as the coordination of care and communication between providers. Outcome measures assess the impact of integrated care on patient health and satisfaction, while structural measures evaluate the organization and delivery of integrated care. Most integration measurement tools try to evaluate holistically, from the process to outcomes (e.g. Scirocco, PRISMA, IntegRATE and RMIC-MT). Also, worth noting is that most integration measurement tools are based on subjective self-assessments of individuals and only measure integration from the actors' perspectives while often including a diverse group of actors.

2.2 Social and health care system in Finland

The Finnish health and social care system is mainly based on publicly financed and provided services (or outsourced to private companies) to which everyone in the country is entitled. A comprehensive reform in health and social services organizations occurred in January 2023.

The responsibility for organizing health and social care, social welfare and rescue services were transferred from municipalities and joint municipal authorities to new regional organizations and well-being services counties. A municipality is form of local government, while a well-being service county is an independent governmental body consisting of all the municipalities of a region. In administrative terms, the reform is the most significant change in the history of the Finnish health and social care system in the last 100 years.

After the reform, there are 21 well-being services counties, and the division into counties is mainly based on the division into regions. The region of Uusimaa, where a third of the Finnish population (total of 5.5 million) lives, is divided into four well-being services counties. Exceptionally, compared to the rest of the country, the City of Helsinki continues to be responsible for organizing health, social and rescue services and the Helsinki area hospital district is in charge of all specialized care in the Uusimaa region. The well-being services counties are self-governing. Their funding is based on central government funding, and they do not have the right to levy taxes. Differences in the service needs of the counties are considered when determining funding (Keskimäki *et al.*, 2023.).

2.3 Integration in the Finnish social and health care system

In the Finnish context, integrated care has been emphasized in recent years to improve the quality of social and health care and reduce costs. Compared to the case in most other countries, Finland's health care and social care are already relatively integrated (Keskimäki *et al.*, 2018). The most notable contrast between the Finnish model and those of other countries is its objective to merge social and health care into a single system.

As a marked objective, the Finnish health and social care system strongly promotes integrated health and social services (Tuirinki *et al.*, 2022). The reform has been considered

necessary to ensure equal services, reduce inequalities in health and well-being and curb the growth in costs.

The Finnish government has introduced legislation to support integrated care, including the Act on Health and Social Services Reform, which aims to promote health and social services integration in the country. The guiding principle is to safeguard equal and quality health and social services for all and reduce inequalities in health and well-being. The aim is to integrate health and social services seamlessly with one another. Health and social services need to use the best and most efficient practices to achieve this goal (Tirinki *et al.*, 2022).

3. Methods

The study questions were as follows:

- Q1. What health and social care integration measures have been studied using existing tools?
- Q2. What dimensions and/or elements have been described for measuring health and social care integration?
- Q3. Are there integration measurement tools that cross sectoral boundaries of health and social care?

The first research question examined the processes/cases, including descriptive information such as the case, how and when and the use of standardized measurement tools. The second research question examined the different dimensions of integration, such as services, financial management, feedback, etc. The third research question examined whether the processes overlapped different service sectors and whether there were different measurement points.

The search was conducted using three major academic research databases, namely Web of Science, PubMed and Google Scholar, all relevant databases in the field of health care integration. The search terms used were “integrated care measurement,” “care coordination measurement,” and “integrated health care measurement,” “social and health care integration measurement” and “social care integration measurement.” We summarize the selected search terms and the integration components they aim to capture in [Table 1](#).

This study utilizes a rapid review methodology that follows a systematic approach to better understand how the integration process has been measured between health and social care sectors. This literature review examines the existing tools for the system level analysis of health and social care integration process measurement. From a Finnish perspective, it would be important to measure integration within and in between social and health care, not just one or the other.

Search term	Captured components	Example studies
Integrated care measurement	Coordination, management and/or continuity of the process	Wu <i>et al.</i> (2019) and Bainbridge <i>et al.</i> (2016)
Care coordination measurement	Coordination and cooperation in client/patient-centered approach	Chorfi <i>et al.</i> (2018)
Integrated health care measurement	Properties and qualities of the integration process	Oostra <i>et al.</i> (2023) and Ahgren and Axelsson (2005)
Social and health care measurement	Integration across social and health care sectors and interconnections between sectors	Grooten <i>et al.</i> (2018) and Singer <i>et al.</i> (2011)
Social care integration measurement	Organizational level for client-centered approach	Glovec <i>et al.</i> (2022)

Source(s): Author’s own creation/work

Table 1.
Selected search terms
and the captured
components

During the initial analysis phase, Google Scholar search alone generated some 6.2 million responses for the term “integrated care measurement.” Due to many papers written in the field with content irrelevant to our study, relevant papers were identified by defining search terms and searching for relevant matches in the titles of articles. Irrelevant hits included for example articles regarding specific medical treatment paths for patients and articles examining only limited aspects of integration, not offering a system-wide perspective. A similar approach limiting searches to titles has been used in several instances to reduce the number of irrelevant search hits (Genet *et al.*, 2011; Normadhi *et al.*, 2019). This is also a risk for bias since all possible measures might not have explicitly stated in the name of the article that the subject measured is health or social care integration. We included several similar search terms often used in articles to reduce this bias efficiently (see Table 1). We did not include for example the word “tool” since articles including the term would appear on the search if the article were to contain the other search terms. This leads to the possible limitation where articles don’t include the term “measurement”. One researcher conducted the searches and two researchers oversaw the selection process.

4. Selection of studies

By focusing on words found in titles, a total of 149 papers were found. From this corpus, 96 papers were found to be unique. After narrowing down to articles that measure the integration process of social and/or health care, an additional time frame for inclusion was added (2003–2023). The time frame was selected to guarantee a sufficient number of relevant studies from different contexts in digital form. A flow chart of the selection process is displayed in Figure 1. After screening for irrelevant articles by reading the title, abstract and keywords, 85 papers remained. After screening for irrelevant articles by reading the title, abstract and keywords, 85 papers remained. After screening for irrelevant articles by reading the title, abstract and keywords, 85 papers remained. After screening for irrelevant articles by reading the title, abstract and keywords, 85 papers remained.

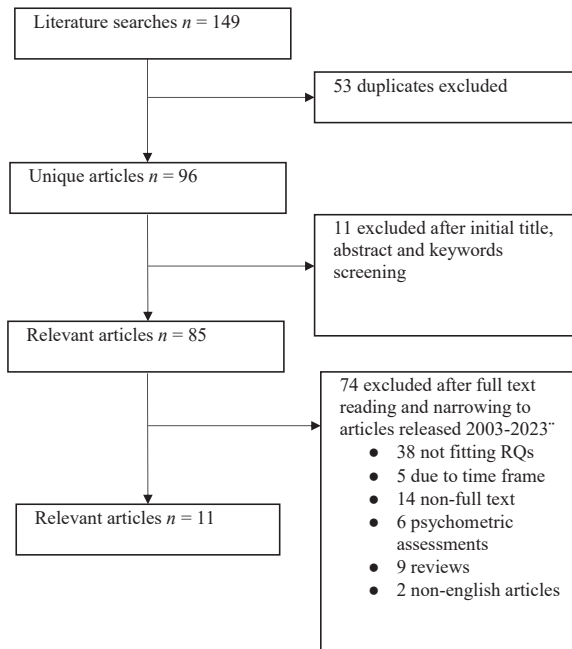


Figure 1.
Search chart

Source(s): Author’s own creation/work

On the second screening round (reading full-text articles), any review and non-full-text articles were removed to focus on case studies and theoretical tools; afterward, 40 full-text articles remained. The included material was analyzed with a data-based content (or thematic) analysis. After reading 40 full-text articles, irrelevant articles, like psychometric assessments of measurement tools, the pool of examined articles was narrowed down from 40 to 11 papers that strictly fit our research questions.

5. Results

The final analysis included a total of 11 articles. Six articles measured integration with survey data and specific integration measurement tools. The other 5 were theoretical frameworks for measuring integration. Articles used various measurement tools such as the Rainbow model, BSC Scorecard, PRISMA, SCIROCCO, integRATE, HSIM and a model developed by Ahgren and Axelsson. Considering the Finnish perspective, several articles have also measured the integration of both social and health care sectors in a boundary crossing manner. In these studies, integration was studied in the context of different types of services, combining health and social care services.

The data of the empirical studies included can be described as limited. Only two papers included had several hundred respondents: 323 (Oostra *et al.*, 2023) and 216 (Wu *et al.*, 2019), while the IntegRATE pilot had only 15 participants (Elwyn *et al.*, 2015). Hébert and Veil (2004) relied on two focus groups for data gathered every six months for a total of 30 months in three separate geographical areas. Ahgren and Axelsson (2005) gathered self-assessment data from unit managers in one municipality.

Each article included in the analysis approached integration from a different level. Elwyn *et al.* (2015) focused on patient-reported levels of integration, while all other articles focused on measuring integration from the point of view of health and/or social care professionals such as doctors, nurses and social workers. An overview of each article is given in Table 2.

6. Discussion

The study conducted by Oostra *et al.* (2023) took a more comprehensive approach to measuring integration compared to the previous work of Ahgren and Axelsson (2005), which can be considered a forerunner to the RMIC-MT measurement model utilized in Oostra *et al.*'s study.

Wu *et al.* (2019) and Hébert and Veil (2004) had a managerial perspective, paying particular attention to the coordination of care and patient processes. The former emphasized the financial and client perspective of care from a business leadership point of view. At the same time, the latter was more concerned with the outcome or care provided via a well-coordinated system.

The patient-reported measure by Elwyn *et al.* (2015) focused on the subjective remarks of individual clients. Ye *et al.* (2012) paid attention to the self-assessments of particular agents as opposed to systemic processes, or patient flows like Oostra *et al.* (2023) or Wu *et al.* (2019). Ye *et al.*'s (2012) integration score was defined by looking at the actual involvement of agents and the expected involvement of agents by others, side by side, making it a micro-level oriented approach to measuring integration. All other articles in the analysis had a meso- or macro-level approach.

In the conceptual papers, proposed frameworks often included several dimensions for measuring integrated care. Bainbridge *et al.* (2016) broke integration down into system structure, the process of care and outcomes, with each part divided into smaller questions. This way of seeing integration as a combination of structure, process and outcomes was shared by many frameworks that try to measure integration from a holistic perspective, for example, Grooten *et al.* (2018) and Singer *et al.* (2011).

Article	Model	Dimensions measured	Target sector in the empirical study	Health and social care crossing	Type of Study	Country
Oostr <i>et al.</i> (2023)	RMIC-MT	Scope, type and enablers, 8 different domains	Primary care	Yes	Survey	The Netherlands
Wu <i>et al.</i> (2019)	BSC Scorecard	Financial, customer, internal business process and learning and growth	Hospital + Related ICOs	No	Survey	China
Ahgren and Axelsson (2005)	Own model	Continuum of integration: Linkage, coordination in networks and full integration. Vertical, horizontal, intra and inter organizational	Local Health Care	No	Survey	Sweden
Hébert and Veil (2004)	PRISMA	Coordination of all organizations involved in delivering health and social services, a single entry point, case management, a single assessment tool with a case-mix classification system, an individualized service plan and a computerized clinical chart	Provincial health care providers	Yes	Survey	Canada
Elwyn <i>et al.</i> (2015)	INTEGRATE pilot	Information sharing, consistent advice, mutual respect and role clarity	Patients of health care	No	Survey	UK/USA
Ye <i>et al.</i> (2012)	HSIM	Involvement of the agent versus its involvement expected by others equals the integration score	Health, educational, social, justice, recreational and cultural sectors	Yes	Survey	Canada
Bainbridge <i>et al.</i> (2016)	Own Framework	System structure, the process of care and outcomes			Conceptual	
Browne <i>et al.</i> (2007)	HSIM	Structural inputs, functioning and network outputs		Yes	Conceptual	
Chorfi <i>et al.</i> (2018)	BSC Scorecard and SCOR	Public health supply chains focus on processes and the financial side		No	Conceptual	

(continued)

<i>Article</i>	<i>Model</i>	<i>Dimensions measured</i>	<i>Target sector in the empirical study</i>	<i>Health and social care crossing</i>	<i>Type of Study</i>	<i>Country</i>
Grooten et al. (2018)	B3-MM Scirocco	12 dimensions. (1) Innovation management, (2) capacity building, (3) readiness to change, (4) structure and governance, (5) Information and eHealth services, (6) finance and funding, (7) standardization and simplification, (8) removal of inhibitors, (9) population approach, (10) citizen empowerment (11) evaluation methods and (12) breadth of ambition		Yes	Conceptual	
Singer et al. (2011)	Framework for measuring integrated patient care	7 dimensions. 5 dimensions of coordination and two patient centered measures. (1) Coordinated within team care, (2) coordinated across care team, (3) coordinated between care teams and community resources, (4) continuous familiarity with the patient over time, (5) continuous proactive and responsive action between visits, (6) patient centered and (7) shared responsibility		Yes	Conceptual	

Source(s): Author's own creation/work

The HSIM framework proposed by Browne *et al.* (2007) and utilized by Ye *et al.* (2012) had a micro-level coordination of care perspective where integration is seen as interplay of structural inputs, their functioning and outputs. This type of integration measurement approach is similar to Chorfi *et al.* (2018) and their hybrid of the BSC scorecard from management studies. This approach is “supply chain,” leadership- and financially oriented, while the “holistic” frameworks approach integration from an institutional perspective.

7. Conclusions

Measuring the degree and success from integration strategies can be approached on many methodological levels – and is, therefore, difficult to analyze. There are many alternative approaches when applied to cross sectoral social and health care contexts. One study may focus solely on the changes in individual roles and practices during the process, while another might concentrate on structural changes at the organizational level. Factors such as these can explain the variation between existing measurement tools. It follows that a comprehensive comparison between existing integration tools is not an easy task to conduct. Despite this, we aimed to contribute to the ongoing discussion on the quality and scope of integration tools available.

This study utilized a rapid review methodology to explore the different methods of measuring health and social care integration between various sectors. We aimed to focus on relevant studies when evaluating the current social and health care integration process in Finland.

Our findings indicate that several integration tools have been developed for various purposes. Most of these aim at being systematic and reliable from one study to another. While this is the case, only a few systematic tools have been used repeatedly.

It should also be noted that the methods and tools for measuring integration are strongly focused on healthcare. The measurement of integration between social and health care services requires common understanding and concepts. However, in several countries, social and health care services operate separately. The challenge of measuring integration also defines it as suitable for each service system. Furthermore, the existing models are not necessarily transferable but must be adapted to suit each service system. This complicates comparing results between countries. Although most integration measurement tools rely on self-assessments, involving individuals in multiple roles would provide diverse and comparable outcomes, particularly within the country being evaluated.

A possible limitation of the study outcome is the inclusion criteria of the last 20 years. This removes the possible older tools and measures developed in the pre-digitalized era. Health and social care integration is crucial in delivering comprehensive and seamless care to patients and clients, improving patient outcomes, enhancing the quality of care and reducing healthcare costs. The need for integrated health and social care is increasing due to the aging of the population and people’s multidisciplinary service needs.

However, the lack of a standardized method of measuring integration between different health and social care sectors has resulted in inconsistencies in research findings. As many different dimensions of integration can be measured, it is not easy to say which tool is the most suitable for a particular problem. The most comprehensive assessment tools may provide the most accurate results. Still, it also raises a question regarding the weight given to each sector measured and the differences between countries, as described earlier. Combining the results of a measure of structural integration with that of process management can be difficult, especially considering the decision-makers and practitioners in social and health care.

Because measuring health care integration seems limited to surveying different actors in care related stakeholder groups, it would seem most beneficial to include as many different voices as possible. Combined with a holistic approach of measuring integration on many levels, it could result in descriptive results within countries and systems while still leaving the problem of comparing different systems unsolved.

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Corresponding author

Samuli Tikkanen can be contacted at: saetik@utu.fi

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