Master Thesis

The influence of care pathways on the quality of work among healthcare providers

A systematic review

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Abstract

Background: Care pathways in modern healthcare aim to improve patient outcomes and reduce healthcare costs. By providing a clear and consistent approach to care, care pathways can help to improve the quality of care, reduce the risk of treatments and medical errors, increase patient satisfaction and improving the use of resources. However, healthcare providers in the healthcare sector are under high pressure. This affects the quality of work. At the moment, there is little knowledge about how care pathways influence the quality of work among healthcare providers. Care pathways could be seen as a tool to reduce the pressure on healthcare providers, which will be good for the quality of work and care.

Aim: The aim of this research is to provide an overview of how care pathways influence the quality of work among healthcare providers.

Method: PubMed and Web of Science were searched to conduct a systematic review in the form of a narrative synthesis. Articles were included if they met the inclusion criteria. 1276 Articles are identified of which 13 are included in this review. CASP tools are used the assess the quality of the articles.

Results: The results are categorised according to three indicators of quality of work. Those are job demands, job control and social support. The findings of the studies showed that healthcare providers have different views on how care pathways influence these indicators. Overall, care pathways have a positive impact on the quality of work, but it does depend on what position the healthcare provider is in and how the indicators are interrelated.

Conclusion: Healthcare providers stated that the use of care pathways reduced or even eliminated medical errors. Following standardised guidelines and knowing that fewer or no mistakes are made results in a lower workload and time pressure. However, it does sacrifice decision autonomy and skill discretion because everything is already mapped out in advance. The way multidisciplinary teams function also influence the quality of work. Take into account the coherence of the indicators, because they are not isolated. Further research on this topic is needed to get a broader understanding of how care pathways influence the quality of work among healthcare providers.

Keywords: care pathways, job demands, job control, social support, standardisation, evidence-based, multidisciplinary teams.

Preface

This Master's Thesis presents my research into the current literature on how care pathways influence the quality of work among healthcare providers. It was a great opportunity to be able to combine my interest in healthcare and my Master's specialisation in Organisational Design and Development. This Master's Thesis is also a representation of the academic skills I have learned and developed during my three-year Bachelor's degree in Business Administration and Master in Organisational Design and Development. During my study period, I not only learned a lot academically and scientifically, but also on a personal level. I am proud of myself for being able to develop into the person I am today.

Further, I would like to thank my supervisor Patrick Vermeulen for providing me constructive feedback. My parents and friends also deserve a shoutout. I want to thank them for their support and help finding the right balance between hard work and relaxation. This made the process of this Master's Thesis manageable, doable and fun.

I have enjoyed delving into the topic of this thesis, and writing it. I hope you also enjoy reading about it.

Iris Giesen
Nijmegen, June 2023

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Introduction

In recent decades, the healthcare sector has encountered profound challenges and changes (Batalden & Davidoff, 2007; S. M. Lee & Lee, 2021; May et al., 2018; Pikó, 1994). One of these challenges is to solve the high-pressure healthcare organisations are under for a long time (Portoghese, Galletta, Coppola, Finco, & Campagna, 2014; Silla & Gamero, 2013). Healthcare organisations are under pressure to provide high-quality care, but this has not been easy because striking a balance between service demand and resource constraints is difficult (Hogan, Barry, Burke, & Joyce, 2011). Burnout symptoms and dissatisfaction are already common among healthcare providers due to the demanding and stressful nature of their jobs (McFadden et al., 2021; Ora, Ball, Reinius, & Griffiths, 2020). This negatively affects the quality of work among healthcare providers (Clegg, 2001; Pikó, 1994; Silla & Gamero, 2013). The quality of work expresses the degree of meaningfulness of organisational jobs (Achterbergh & Vriens, 2019). According to Achterbergh & Vriens (2010), several indicators of the quality of work represent whether organisational opportunities for employees to live a fulfilled life in the context of doing their job are created. Healthcare providers not being able to live a fulfilled life while doing their job potentially increase personnel turnover and may eventually lead to a reduction in the quality of care (Achterbergh & Vriens, 2019; Kieny et al., 2018). An interesting development that recently received a lot of attention to improve the quality of care concerns the phenomenon of 'care pathways'. Various synonyms are used for care pathways, such as clinical pathways (De Bleser et al., 2006). In this research, the term care pathway is used. Care pathways are standardised, evidence-based guidelines of care that outline the steps to be taken at each stage of a patient's treatment from diagnosis to recovery (van Zelm et al., 2021). In the 1990s, care pathways were already introduced to combine nursing and medical activities into multidisciplinary care plans for surgeries (Kitchiner, Davidson, & Bundred, 1996; Munitiz et al., 2010). Nowadays, care pathways are a key component of modern healthcare, aiming at improving patient outcomes and reducing healthcare costs. By providing a clear and consistent approach to care, care pathways can help to improve the quality of care, reduce the risk of treatments and medical errors, increase patient satisfaction and improve the use of resources (De Bleser et al., 2006; Munitiz et al., 2010; van Hoeve, 2020). Overall, care pathways offer a promising approach to improving care, reducing healthcare costs and ease pressure, but their success will depend on the careful implementation and the performance of healthcare providers (Colquhoun, Squires, Kolehmainen, Fraser, & Grimshaw, 2017; Kieny et al., 2018; van Zelm

et al., 2021). Healthcare providers, according to the International Labour Organisation (2007) (ILO), include physicians, nurses, midwifery professionals, and allied health professionals.

In the current literature, care pathways are mainly written about with an emphasis on what it offers for patients, the effect on the quality of care and cost reduction (De Bleser et al., 2006; Munitiz et al., 2010; van Hoeve, 2020). Many researchers mention that more research is needed on the influence care pathways have on healthcare providers (Allen, Gillen, & Rixson, 2009; De Bleser et al., 2006; Deneckere et al., 2012; Gurzick & Kesten, 2010; Hogan et al., 2011; Ovretveit, 2010), as it becomes more important and popular to pay attention to the quality of work (Dechawatanapaisal, 2017; Walton, 1986). No study fully addresses the relation between care pathways and quality of work among healthcare providers. There are, however, several studies that have addressed aspects of the quality of work in relation to care pathways. The study by Hogan et al., (2011) is about healthcare professionals' experience of the implementation of care pathways. It turned out that care pathways require major organisational change that pressures the quality of work among healthcare providers. Also, Allen et al., (2009) and Rotter et al., (2011) argue that care pathways require a change in the work of healthcare providers. Care delivery in care pathways is usually carried out by multidisciplinary teams, allowing healthcare providers to collaborate with and learn from colleagues outside their departments (Allen et al., 2009; Deneckere et al., 2012). The research of Gurzick & Kesten (2010) focuses on the role of clinical nurse specialists in evidence-based practice through the development of care pathways. The research of De Bleser et al., (2006) describes many definitions and characteristics of care pathways. Care pathways are being implemented in more healthcare organisations (Evans-Lacko, Jarrett, McCrone, & Thornicroft, 2010; Grocott, Edwards, Mythen, & Aronson, 2019), but a systematic overview of how care pathways influence the quality of work among healthcare providers is lacking.

1.1 Research aim and research question

Since there is no overall overview of the influence care pathways have on the quality of work among healthcare providers, the aim of this research has therefore been defined as contributing to the theoretical knowledge about the influence of care pathways on the quality of work among healthcare providers. To achieve the research aim, the following research question is raised: '*How do care pathways influence the quality of work among healthcare providers?'*

1.2 Approach

The research question will be answered through a systematic literature review. A variant of systematic reviews was used namely narrative synthesis. To address the earlier addressed research gap, the available academic literature is searched, screened and analysed in a structured manner. In total 1276 articles were found, of which 13 were eventually used for the analysis. The findings are displayed and summarised. The Critical Appraisal Skills Programme (CASP) tool is used for the quality assessment of the articles. Through this systematic review, the literature about care pathways and their influence on the quality of work among healthcare providers is merged and critically discussed, which provides input for further research.

1.3 Relevance

Research on the impact of care pathways on the quality of care is not new. Numerous studies have already been conducted on this (Batalden & Davidoff, 2007; De Bleser et al., 2006; C. R. May et al., 2018; van Zelm et al., 2021). By contrast, this research focuses on how care pathways influence the quality of work in healthcare organisations that have implemented care pathways. This research contributes to the existing literature in two ways. Firstly, several studies discuss aspects of quality of work in relation to care pathways (Allen et al., 2009; Atwal & Caldwell, 2002; Brunault et al., 2014; De Bleser et al., 2006; Deneckere et al., 2012; Gurzick & Kesten, 2010; Hogan et al., 2011; Kieny et al., 2018; Ovretveit, 2010; Rotter et al., 2011; Vanhaecht, Sermeus, & De Witte, 2007), but there has been no study that considers three indicators of quality of work (job demands, job control, social support) in relation to care pathways and how care pathways influence these indicators. Looking at the coherence of the indicators is important, because they are interrelated and studying them separately adds little value (Karasek, 1979; Sérole et al., 2021; Van Yperen & Hagedoorn, 2003). Secondly, according to Vanhaecht et al., (2012), there are numerous misunderstandings regarding the usage and potential of care pathways. The World Health Organisation (WHO), requires that the delivery of care should be effective, safe, people-centred, timely, equitable, integrated and efficient (Awosoga et al., 2022; Kieny et al., 2018). Care pathways have been evaluated as an effective tool to deliver care efficiently (Allen et al., 2009; Hogan et al., 2011; Ovretveit, 2010; Vanhaecht et al., 2007), which is then likely to reduce the pressure on care. Healthcare providers are a group at high risk for stress, burn-outs, and lower rates of well-being, because of their occupational demands (McFadden et al., 2021). Care pathways can be seen as a tool that influences the quality of work. Therefore, it is important to display and expand knowledge about

the relation between care pathways and the quality of work. Misunderstandings about care pathways can be clarified. To improve the quality of care it is important to understand more about the quality of work among healthcare providers (Kieny et al., 2018).

This research also has social relevance. Firstly, it might be beneficial for healthcare providers. It can offer them insight into the conditions in which they work and how this affects their quality of work. Perhaps wishes regarding working conditions in care pathways can be quite easily fulfilled by healthcare organisations. This could result in a higher quality of work (Simoes & Esposito, 2014). Secondly, it is useful for healthcare organisations to understand the influence of care pathways on the quality of work among healthcare providers. They can use this information to increase the quality of work for their employees and bind them so that personnel turnover decreases. For healthcare organisations it is also important to have healthcare providers who are mentally in good shape, enjoy their work and are willing to adopt new ways of working (Colquhoun et al., 2017). Improving the quality of healthcare providers' work can potentially help reduce pressure, workload and personnel turnover in the healthcare sector (Kieny et al., 2018; Salisbury, Murphy, & Duncan, 2020; Silla & Gamero, 2013). Lastly, care pathways can contribute to the increase in the quality of care (Deneckere et al., 2012; Kitchiner et al., 1996). Increasing quality of care improves overall public health which is beneficial for society as a whole (Grocott et al., 2019).

1.4 Outline

This thesis consists of five chapters. Chapter two describes the theoretical background that is relevant to the research. In it, indicators of the quality of work, care pathways and their relation is explained. Chapter three discusses the methodology. It states how the research was conducted. In chapter four the results are shown based on the findings of the included articles. Chapter five consists of the conclusion and discussion. It answers the research question, and the research is reflected on, and recommendations are made for future research.

Chapter 2. Background literature

This chapter reviews the relevant literature for this research. The two central concepts are 'quality of work' and 'care pathways'. Both are explained in this chapter and broken down into indicators and characteristics. Paragraph 2.1 is about the quality of work. Paragraph 2.2 focuses on care pathways. The chapter concludes with the relation between care pathways and quality of work.

2.1 Quality of work

In this research the criteria to realise a fulfilled working life are divided into three indicators to measure the quality of work that are valuable for answering the research question. Karasek (1979) argues that based on his job strain model two work-related indicators of the work environment at the individual level substantially influence the level of psychological strains and, therefore, on workers' well-being and the quality of their work. The two indicators are job demands and job control (Karasek, 1979; Nordenmark, Vinberg, & Strandh, 2012). The model proposes that psychological strain in the work environment is caused by the combined effects of job demands and the range of decision-making freedom available to the worker confronted with those demands (Karasek, 1979). Kasarek's model states that job demands and job control influence the psychological strain of employees however, the model's empirical evidence is mixed (De Lange, Taris, Kompier, Houtman, & Bongers, 2003; Nordenmark et al., 2012). The model fails, for example, in providing solid evidence of the interactions between job demands and job control in forecasting the employee's well-being and the quality of work (Sargent & Terry, 2000). To find out this interaction, several studies have been conducted on indicators that might influence the relationship between job demands and job control on the quality of work (R. L. Lee & Ashforth, 1996; Portoghese et al., 2014). Studies by Alarcon (2011), Johnson & Hall (1988), and Sargent & Terry (2000) showed that the extent to which employees receive or experience social support influences the quality of work. It turned out that a lack of social support negatively impacts the high job demands and the low job control. Poor social support leads to higher psychological strain (Achterbergh & Vriens, 2019; De Sitter, 1994; Karasek, 1979).

The indicators job demands, job control and social support are explained in the following sub-sections. Table 1 summarises the indicators. Ultimately, it is important to look at

the coherence of the indicators, because outcomes are caused by combined effects (Karasek, 1979). An imbalance of job demands, job control and social support might raise the risk of work-related stress (Karasek & Theorell, 1990). This affects the quality of work and can cause an increase in personnel turnover (Achterbergh & Vriens, 2019). Van Yperen & Hagedoorn (2003) showed that the amount of social support impacts the effect of job demands and job control, like a mediator.

2.1.1 Job demands

The indicator job demands is referred to as the physical, psychological, social and organisational aspect of a job that requires sustained physical or mental effort and is associated with certain physiological and psychological costs (Bakker & Demerouti, 2007). Workload, time constraints, emotional labour, role ambiguity, and interpersonal conflict are all examples of demands. High job demands often lead to work-related stress and burnouts, especially when certain job resources are unavailable. Resources such as salary, autonomy, rewards and learning opportunities (Bakker & Demerouti, 2014). However, job resources do not always lead to negative outcomes. They can also lead to engagement, job satisfaction and organisational commitment (Bakker & Demerouti, 2007). As a result, both positive and negative psychological well-being is linked to job demands (Bakker & Demerouti, 2007, 2014). Bakker & Demerouti (2014) argue that some challenging demands are required in all jobs, because, otherwise work engagement and job performance may suffer.

This research delves further into the degree of workload and the degree of time pressure (Achterbergh & Vriens, 2019; Karasek, 1979). A high degree of workload can result in physical and mental exhaustion, poor work-life balance and a reduction in job satisfaction (Leiter & Maslach, 2004). Time pressure is a relevant source of stress that results from a lack of time to finish job-related tasks (Kinicki & Vecchio, 1994). A high degree of time pressure is also linked to employee health problems and job dissatisfaction (Silla & Gamero, 2013).

In the healthcare sector, it is common that job demands are high and that increasing workload and time pressure cause negative consequences for both healthcare providers and patients (Hogan et al., 2011; Portoghese et al., 2014). High workload and time pressure have been linked to increased levels of burnout, turnover rates and dissatisfaction among healthcare providers (McFadden et al., 2021; Ora et al., 2020; Shanafelt et al., 2012). This results in decreased psychological well-being and bad quality of work for healthcare providers (Karasek,

1979; Silla & Gamero, 2013). High workload and time pressure can also result in errors, hurried decision-making and insufficient documentation, which leads to a reduction in the quality of care (Silla & Gamero, 2013; West, Dyrbye, Erwin, & Shanafelt, 2016).

2.1.2 Job Control

The indicator job control refers to the employee's autonomy and decision-making power and ability to determine their tasks and behaviour during the working day (Bakker & Demerouti, 2007; Smith, Tisak, Hahn, & Schmieder, 1997). Job control is linked to the firm's authority structure and technology (Karasek, 1979). Researchers have acknowledged that job control is an important predictor of work-related stress and personal outcomes (Awosoga et al., 2022; Portoghese et al., 2014; Smith et al., 1997). Employees who have more job control are better able to cope with and manage job-related issues that arise from the pressuring job demands. Therefore, higher job control is related to an increase in job satisfaction, less stress and better health outcomes (Portoghese et al., 2014; Rostami et al., 2021). Job control can be determined by two measures. Those are decision autonomy and skill discretion (Karasek et al., 1998; Nordenmark et al., 2012; Smith et al., 1997). Decision autonomy is a socially agreed-upon form of job performance control in which employees decide how to tackle job tasks and when they are finished (Nordenmark et al., 2012). Skill discretion refers to the control over the use of an employee's initiative and skills on the job (Nordenmark et al., 2012). A satisfied degree of job control is not always possible for employees, resulting in a feeling of powerlessness (Karasek, 1979; Sargent & Terry, 2000). This negatively affects the psychological well-being of employees, which in turn will reduce the quality of work (Bakker & Demerouti, 2014; Brunault et al., 2014).

In the healthcare sector, the degree of job control may vary. Physicians in general have a higher degree of job control because of their autonomy in making clinical decisions (Shanafelt et al., 2012). Nurses may have less job control because of their role as support staff (Rostami et al., 2021). Care pathways are likely to allow healthcare providers to rearrange job control, which potentially contributes to the prevention of burnout (Alarcon, 2011).

2.1.3 Social support

The indicator social support is referred to the extent to which individuals receive emotional, information and tangible resources from their colleagues, supervisors and other sources within

their work environment (House, 1988; Johnson & Hall, 1988; Leach et al., 2017). Social support can be determined by the measure social integration (House, 1988; Minssen, 2006). Social integration is the degree of the existence or quantity of social relationships (House, 1988). Several studies emphasise the importance of social support to the maintenance of good health. Social support reduces the negative health effects of psychological stress and possibly other health risks (Deneckere et al., 2012; Kaplan, Cassel, & Gore, 1977; Portoghese et al., 2014). Employees who receive social support have less job stress compared to those who receive no or little social support (Halbesleben & Buckley, 2004; Sargent & Terry, 2000). Social support is associated with the psychological well-being of employees, and therefore, related to the quality of work (Bakker & Demerouti, 2014).

In the healthcare sector, social support can take many forms. Healthcare providers can develop social relations and reduce feelings of isolation, connecting with colleagues who have comparable or, on the contrary, different activities and responsibilities. People thrive in communities and perform best when they share their praise, comfort, happiness, stress, and humour with people they like and respect (Leiter & Maslach, 2004). Social support reaffirms a person's membership in a group with shared values (Leiter & Maslach, 2004). Working in multidisciplinary teams within care pathways affects social relationships and according to several studies do multidisciplinary teams increase teamwork and leads to better care (Atwal & Caldwell, 2002; Deneckere et al., 2012; Evans-Lacko et al., 2010). Brunault et al., (2014) argue that teamwork results in a better quality of work. Teamwork also requires communication (Minssen, 2006). However, if this is insufficient, the team will not function well (Gausvik, Lautar, Miller, Pallerla, & Schlaudecker, 2015). Additionally, in teams, it is also possible that people do not engage in the right way because they assume others on the team will sort it out (Mañas et al., 2018). These are possible pitfalls of teamwork which could influence the quality of work.

Quality of work	Job demands	Workload
		Time pressure
	Job control	Autonomy
		Skill discretion
	Social support	Social integration

Table 1: Summary quality of work indicators

2.2 Care pathways

This research takes place in the context of care pathways. They are created to reduce the length of stay and unnecessary costs while preserving or improving the quality of care (De Bleser et al., 2006; Hogan et al., 2011). Care pathways were used not only to increase efficiency but also to extend the use of guidelines in daily practice for clinical actions (Vanhaecht et al., 2012). Overall, care pathways have been evaluated as an effective tool to deliver care efficiently (Allen et al., 2009; Hogan et al., 2011; Ovretveit, 2010; Vanhaecht et al., 2007).

2.2.1 What are care pathways?

The European Pathway Association defines a care pathway as 'a complex intervention for the mutual decision-making and organisation of care processes for a well-defined group of patients during a well-defined period' (Vanhaecht et al., 2012, p. 30). Care pathways aim is to provide a clear and consistent approach to care, help to improve the quality of care, reduce the risk of treatments and medical errors, increase patient satisfaction and improve the use of resources (De Bleser et al., 2006; Hogan et al., 2011; Schrijvers, van Hoorn, & Huiskes, 2012; Vanhaecht et al., 2012). Specialist medical care is increasingly being organised to use care pathways. However, there can be significant differences in interventions classified under the term care pathways (Oostenbrink, Razenberg, & Raatgever, 2010; Ovretveit, 2010; Vanhaecht et al., 2012). The difference may arise from the fact that there are many different definitions for care pathways (Batalden & Davidoff, 2007; Marleen, Schepper, & Coussens, 2007; van Zelm et al., 2021). The study of De Bleser et al., (2006) found 84 different definitions of care pathways. Due to different definitions of care pathways, there can arise differences between the implementation, aims and outcomes of care pathways (De Bleser et al., 2006). To determine which patient groups care pathways can be applied to, several studies have been conducted to classify and design different care pathways according to the degree of predictability and conformity of the care process (Schrijvers et al., 2012; Trajano, Ferreira Filho, de Carvalho Sousa, Litchfield, & Weber, 2021). Each patient is unique, but it appears that care for certain patient groups is highly comparable and thus plannable (Oostenbrink et al., 2010). The research of Oostenbrink et al., (2010) makes a distinction between four different types of care pathways. Those are time-fixed, phase-based, modular and individual care pathways. Given the scope of this thesis, the types of care pathways and the differences between them are not included.

2.2.2 Characteristics of care pathways

The features of care pathways may vary depending on the specific care pathway or treatment they are designed to address. However, the European Pathway Association proposes some general characteristics of care pathways (Schrijvers et al., 2012; Vanhaecht et al., 2007). The research of De Bleser et al., (2006) has classified various characteristics of care pathways into 16 subcategories. Given the scope of this thesis, only the characteristics standardisation, evidence-based and multidisciplinary teams are used and analysed, as they are most likely to influence the quality of work.

The first characteristic is standardisation. Hawe, Shiell, & Riley (2004) argue that in complex interventions, the function and process of the interventions should be standardised. For care pathways this means the delivered care is standardised. Standardisation of care refers partly to uniformity in reducing the variability of care practice (De Bleser et al., 2006). The order and timing of medical interventions and treatments are already specified for patients suffering from a specific medical disease (Oostenbrink et al., 2010; Rotter et al., 2011). Documentation, monitoring and evaluation of potential deviations and results have also been standardised. Care pathways are kind of guidelines that just need to be followed and errors reduce (Vanhaecht et al., 2007). Evidence-based is the next characteristic. Providing care is an extremely precise discipline and nothing can be taken for granted. That is why it is crucial the implemented care pathways are based on the most reliable information and are evidence-based (van Zelm et al., 2021). An explicit statement of the goals and key elements of care based on evidence, best practice, and patients' expectations and characteristics is in place (Vanhaecht et al., 2007). The last characteristic is multidisciplinary teams. According to Ovretveit (2010) and Deneckere et al., (2012), care pathways promote collaboration in multidisciplinary teams. They encourage multidisciplinary teamwork and communication while indicating who should do what and when (Allen et al., 2009; De Bleser et al., 2006). Coordination of the care process is managed by the definition of roles and sequencing of the activities of different areas of expertise (Vanhaecht et al., 2007). Xyrichis & Ream (2008) define teamwork in healthcare as a dynamic process involving two or more health professionals with complementary or different backgrounds and skills who share common health goals and exert concerted physical and mental effort when assessing, planning, or evaluating patient care.

2.3 The relation between quality of work and care pathways

This paragraph explains the relation between quality of work and care pathways. Care pathways are portrayed as an innovative and efficient way of working to improve the quality of care and reduce care costs (Allen et al., 2009; De Bleser et al., 2006; Hogan et al., 2011). The use of care pathways can enable good, efficient and effective care (Schrijvers et al., 2012; Vanhaecht et al., 2007). If care is delivered efficiently, patients' stay decreases (Pearson, Kleefield, Soukop, Cook, & Lee, 2001). Care pathways can be seen as a tool that influences the quality of work, because the indicators of the quality of work can be affected by care pathways. Standardisation increases evidence-based guidelines healthcare providers should follow and the risk of errors reduces (De Bleser et al., 2006). This might reduce work pressure and autonomy. Less work pressure has a positive impact on the quality of work (Silla & Gamero, 2013). Working in multidisciplinary teams affects how social support is perceived by healthcare providers and how autonomy is distributed (Brunault et al., 2014; Deneckere et al., 2012). When the quality of work is low, employees are less motivated to do a good job (Awosoga et al., 2022). In healthcare, it is important that the quality of work is in order because if it is not, personnel turnover may increase, which could lead to a decrease in the quality of care (Awosoga et al., 2022; Kieny et al., 2018). It can be argued that performing better care in care pathways leads to decreasing pressure on healthcare and a decreasing pressure can result in better quality of work (Awosoga et al., 2022).

Chapter 3. Methodology

This chapter discusses the methodology. The chapter begins with the chosen research approach, followed by the search strategy. Then the selection criteria are discussed. The next paragraph is about the analysis method. The final paragraph covers research ethics.

3.1 Research approach

This research was conducted through a literature review. Literature reviews can take many different forms, depending on the subject area and the particular purpose of the review (Chetwynd, 2022). This research uses a systematic review. A systematic literature review is a method of conducting scientific research in which results from different studies are compiled and analysed (Chetwynd, 2022; Page et al., 2021). The research is conducted with a variant of systematic reviews, namely a narrative synthesis. This was suitable because a narrative synthesis refers to 'an approach to the systematic review and synthesis of findings from multiple studies that rely primarily on the use of words and text to summarise and explain the findings of the synthesis' (Popay et al., 2006, p. 5).

The aim of this research is to provide an overview of how care pathways influence the quality of work among healthcare providers. Therefore, a systematic literature review is appropriate. By analysing studies about care pathways and their influence on the quality of work, the research aim can be reached. Further, this systematic review is based on three steps. Those are searching, screening and analysing (Boiral, Guillaumie, Heras-Saizarbitoria, & Tayo Tene, 2018; Tranfield, Denyer, & Smart, 2003).

3.2 Search strategy

This research was carried out during the period February 2023 to June 2023. A search was conducted in online databases to select articles based on search queries. The used databases are PubMed and Web of Science. Those databases were chosen, because they are large, have the ability to use queries and have high-quality academic sources.

A five-step search strategy was used to locate relevant articles. This strategy is often called block search. Firstly, an initial search of the databases was undertaken with search terms. Each search consisted of a three-term combination. The first search term was 'care pathways' or a synonym. The second search terms were indicators of the quality of work. The third search terms were related to the characteristics of care pathways. The most relevant articles were shown first in the databases. Table 2 shows the search terms.

Search term 1	***Search term 2***	***Search term 3***
Care pathways OR clinical pathway	Job demands OR job control OR social support	Standardisation OR evidence-based OR multidisciplinary teams

Table 2: Used search terms

After the initial search through the two databases, a total of 1276 articles were found (PubMed n = 824 and Web of Science n = 452). Secondly, those were scanned and eventually 104 articles remained to be screened based on the inclusion criteria. 52 Articles were selected that met the inclusion criteria. The next step was to view into more detail at the title, and abstract and then closely examine the entire text of the article. After this, 11 articles remained for the analysis. Lastly, 2 articles were selected by examining the reference lists of useful articles or that were recommended as related articles. This is also known as the snowball effect (Vennix, 2016). Ultimately, this research used 13 articles. To address the quality all those articles did undergo a quality assessment, shown in appendix 2 and 3. The search strategy is visually illustrated in figure 1. The search terms and queries are shown in appendix 1.

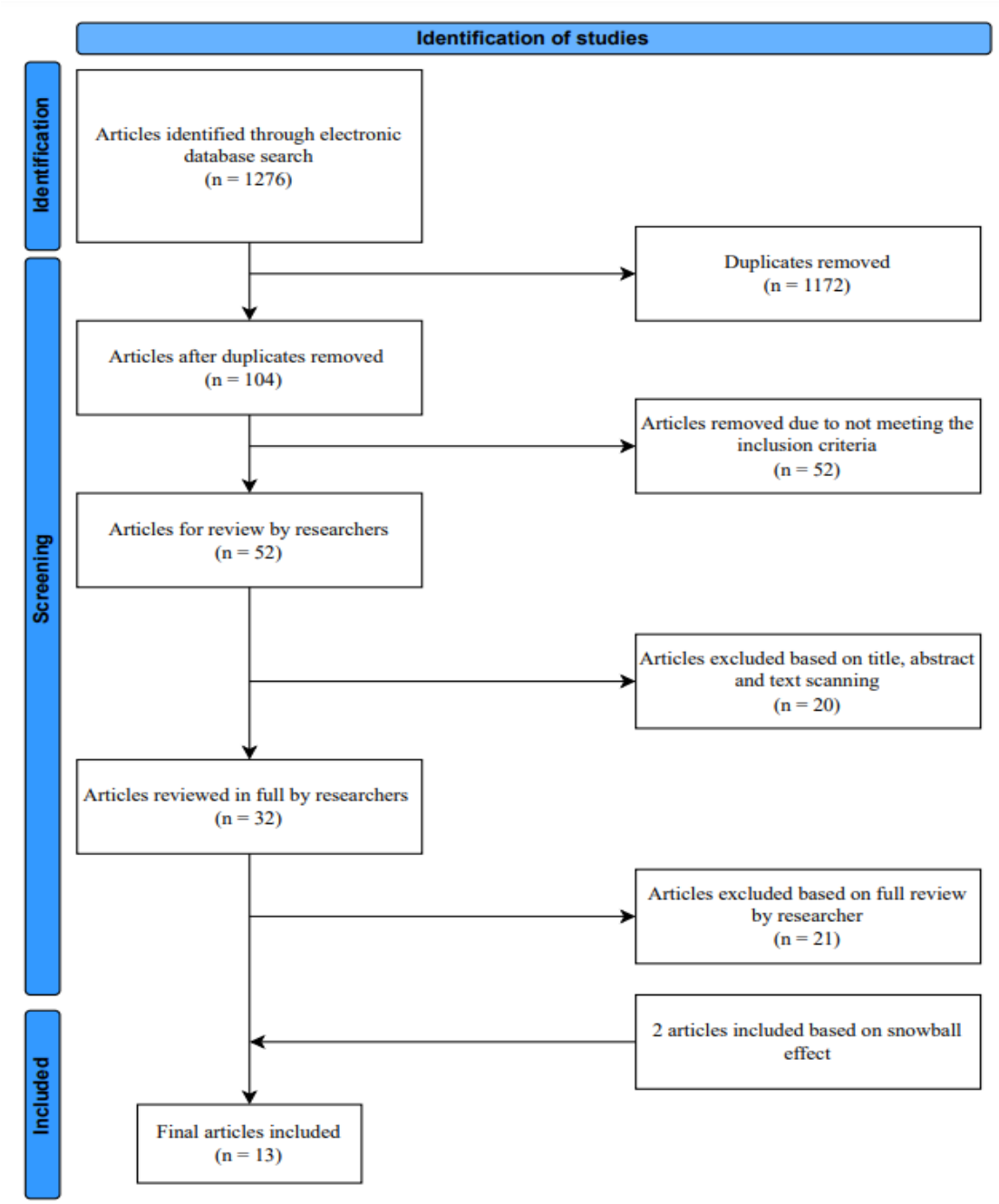

Figure 1: Flow chart of the search strategy

3.3 Selection criteria

This paragraph discusses the inclusion and exclusion criteria. Inclusion criteria and exclusion criteria were used to select articles suitable to use. Only studies that met all inclusion criteria and none of the exclusion criteria are included in the review. The inclusion criterium published from 1990 onwards is chosen because since then care pathways were introduced in the healthcare sector (Kitchiner et al., 1996). The geographical location where studies took place is

not a limitation for their usage in this review. The table below provides insight into the criteria applied.

Inclusion criteria	Exclusion criteria
Articles published from 1990 onwards	Articles published in a language other than English
Articles published in peer-reviewed and academic journals	Everything that is not an article
Articles that include characteristics of care pathways that could be related to indicators affecting the quality of work among healthcare providers	Full text of article unavailable
Qualitative or review articles	Quantitative articles
Articles in which the implementation of care pathways is in progress or is completed	Articles focusing only on the implementation process of care pathways
Articles focusing on aspects of the quality of work	Articles focusing on the quality of care
Articles focusing on healthcare providers working in care pathways	

Table 3: Inclusion- & exclusion criteria

3.4 Analysis method

3.4.1 Quality assessment

After the search process has taken place, a collection of articles was made that will actually be used for the analysis. The included articles are three reviews and ten qualitative studies. These needed to be screened on their quality (Tranfield et al., 2003). Critical Appraisal Skills Programme (CASP) are used to assess whether the article was suitable. The quality assessment of the evidence to be synthesized is an important stage in systematic reviews (Long, French, & Brooks, 2020).

The CASP-tool is a general purpose tool for assessing the strengths and weaknesses of any research (Long et al., 2020). To assess the quality of the qualitative studies a checklist consisting of ten question is used, each focuses on a different methodological aspect of the qualitative study (CASP, 2022; Long et al., 2020). The used checklist for systematic reviews

consists of eleven questions and comes from the JBI international research organisation (Aromataris et al., 2015; Joanna Briggs Institute, 2020). While answering the questions, researchers can consider whether the research is appropriate for use, as well as whether the findings were well-presented and meaningful (Long et al., 2020). The questions of the used CASP tools are shown in figure 2 and 3.

1. Was there a clear statement of the aims of the research?
2. Is a qualitative methodology appropriate?
3. Was the research design appropriate to address the aims of the research?
4. Was the recruitment strategy appropriate to the aims of the research?
5. Was the data collected in a way that addressed the research issue?
6. Has the relationship between researcher and participants been adequately considered?
7. Have ethical issues been taken into consideration?
8. Was the data analysis sufficiently rigorous?
9. Is there a clear statement of findings?
10. How valuable is the research?

Figure 2: Questions of the CASP qualitative checklist (CASP, 2022)

1. Is the review question clearly and explicitly stated?
2. Were the inclusion criteria appropriate for the review question?
3. Was the search strategy appropriate?
4. Were the sources and resources used to search for studies adequate?
5. Were the criteria for appraising studies appropriate?
6. Was critical appraisal conducted by two or more reviewers independently?
7. Were there methods to minimize errors in data extraction?
8. Were the methods used to combine studies appropriate?
9. Was the likelihood of publication bias assessed?
10. Were recommendations for policy and/or practice supported by the reported data?
11. Were the specific directives for new research appropriate?

Figure 3: Questions of the CASP systematic review checklist (Joanna Briggs Institute, 2020)

3.4.2 Data extraction

After the quality assessment took place the screening process is finished and all the data was gathered to start the analysis. For the analysis, data extraction is based on the data extraction approach with standardised data-extraction forms of Vermeerbergen, Van Hootegem, & Benders (2017). Several study characteristics were collated and data on characteristics of care pathways and data of healthcare providers working in care pathways related to quality of work

were coded. This information is arranged in table 4. Coding is often used for analysing data in primary qualitative research and for systematic reviews to combine and integrate insights from multiple studies (Thomas & Harden, 2008).

Authors (Year)	**Location**	**Study purpose**	**Data collection method (qualitative or review)**	**Number of participants /articles**	**Participants ' profession**	**Characteristic(s) care pathways**	**Quality of work indicator(s)**
(Denecker e et al., 2012)		Finding out the relationship between care pathways and teamwork	Systematic review	26 Articles		Multidisciplinary teams	Workload, Skill discretion, Social support, Social integration
(Evans-Lacko et al., 2010)		Summarise what is known about factors which help or hinder clinicians in adopting and putting care pathways into practice	Systematic review	42 Articles		Multidisciplinary teams	Job demands, Autonomy
(Hwang, Tchoe, Chung, Park, & Choi, 2023)	Korea	Exploring the experiences of quality improvement personnel in implementing care pathways	Qualitative study	16 Participants	14 Nurses, 2 Physicians	Evidence-based, Multidisciplinary teams	Job demands, Job control, Autonomy, Skill discretion Social support
(Jabbour, Newton, Johnson, & Curran, 2018)	Ontario, Canada	To explore a set of factors that influence clinical pathway implementation	Qualitative study	15 emergency departments, 30 Participants	15 Nurses, 15 Physicians	Evidence-based	Job demands, Workload, Time pressure, Autonomy Social integration
(Jarva et al., 2021)		Identifying and describing the competence areas of healthcare professionals working in care pathways and factors influencing these competences	Systematic review	32 Articles		Evidence-based, Multidisciplinary teams	Job control, Autonomy, Skill discretion
(Khandake r et al., 2013)	England	Exploring views and experiences on care pathways of mental health professionals	Qualitative study	19 Participants	5 Consultants, 3 Team leaders, 3 Social workers, 2 Clinical psychologist s, 2 Psychiatric	Standardisation , Multidisciplinary teams	Job demands, Autonomy, Skill discretion, Social integration

					nurses, 1 Staff grade doctor, 1 Therapist, 2 Senior trust managers		
(Leach et al., 2017)	North Carolina	Describing current care team designs and care professionals' perceptions of ideal team designs	Qualitative study	44 Participants	Healthcare professionals	Multidisciplinary teams	Social support
(Liberati, Gorli, & Scaratti, 2016)	Italy	Analyse the boundaries that affect collaboration and care integration in multidisciplinary teams	Qualitative study	180 Hours of observations , 42 interviews	20 Nurses, 22 Physicians	Multidisciplinary teams	Social integration
(Ly et al., 2021)	Alberta, Canada	Identify the clinical behaviours, attitudinal factors, and environments that potentially influence clinical pathways in complex clinical settings	Qualitative study	42 Participants	17 Physicians, 25 nurses	Evidence-based, Standardisation , Multidisciplinary teams	Job demands, Workload, Time pressure, Job control, Autonomy
(Mæhle, Hanto, & Smeland, 2020)	Norway	Finding a way for emergent and formal structures to coexist in practicing care pathways	Qualitative study	66 Participants	Key medical personnel and nurses	Evidence-based, Multidisciplinary teams	Job demands, Social support
(O'Hara et al., 2020)	United States	Examining physician perspectives of clinical pathways	Qualitative study	30 Participants	All physicians	Standardisation , Evidence-based, Multidisciplinary teams	Job demands, Workload, Time pressure, Job control, Skill discretion Social support
(Rees, Huby, McDade, & McKechnie, 2004)	Scotland	To investigate professionals' experiences and views on the implementation of care pathways	Qualitative study Individual and group interviews	15 Participants	7 Psychiatric nurses, 4 social workers, 3 Therapists, 1 Nurse student	Multidisciplinary teams	Job control, Autonomy, Skill discretion, Social support
(Tørseth & Ådnanes, 2022)	Norway	Examining how mental health professionals made sense of care pathways	Qualitative study	37 Participants	3 Psychiatrist, 17 Psychologists, 6 Nurses, 6 Others	Standardisation	Job demands, Workload, Time pressure, Job control, Autonomy, Social support

Table 4: Included articles and their characteristics

3.5 Research ethics

When conducting a study, it is very important to pay attention to ethics (Guillemin & Gillam, 2004). Researchers have to meet many requirements and are not allowed to use just anything and anyone for their research (Guillemin & Gillam, 2004). Ethical issues change so much over time and place and are so broad in scope and context, that the search for a universal internationally accepted standard for ethical assessment in systematic reviews appears illusory (Vergnes, Marchal-Sixou, Nabet, Maret, & Hamel, 2010). There are, however suggestions to deal with ethical issues. Researchers should be reflexive (Guillemin & Gillam, 2004). They must be aware of their biases and that subjectivity may influence the findings of the research. In systematic reviews and their analysis, the quality of research methods and research tools serve as inclusion criteria for determining which studies are included in the analysis. This allows authors to ensure the rigour of the process (Page et al., 2021). To ensure that a systematic review is useful to users, the researcher(s) should write a clear, complete, and accurate description of why the review was conducted, what they did and what they discovered. This also increases transparency (Page et al., 2021).

Chapter 4: Results

The research question of this research was as follows: '*How do care pathways influence the quality of work among healthcare providers?*' This chapter presents the most important findings of the included studies for this systematic review. Each indicator of the quality of work starts with a general explanation of how it is influenced by care pathways, whereafter, a closer look at the measure(s) of that indicator.

4.1 Influence of care pathways on job demands

Care pathways set clear expectations and responsibilities for healthcare providers involved in patient care by creating standardised protocols and evidence-based guidelines. This clarity eliminates uncertainty and possible decision-making constraints, allowing healthcare providers to focus on completing the required activities and treatments along the pathway.

"*Care pathways help streamline communication and what the intervention is*" (O'Hara et al., 2020, p. 3).

Care pathways also increase the predictability and stability of the work (Mæhle et al., 2020). However, the study of Tørseth & Ådnanes (2022) stated that there often is a lack of clarity regarding the overall goals and content of care pathways. The results of Ly et al., (2021) highlighted that care pathways should be evidence-based, concise, brief, efficient, easy to find, eliminate document duplication and it should be easy to integrate in the current practice. To convince healthcare providers of the added value of care pathways, it is important to use evidence and data. A healthcare provider said the following:

"*Right and if there's data or graphs to show a decrease in length of stay, an increase in health of the child, the effects of using that pathway, that's always good to show docs because they're data-driven* " (Jabbour et al., 2018, p. 8).

Participants of the study of O'Hara et al., (2020) stated that care pathways support high-value care by reducing unnecessary use of healthcare resources, promoting evidence-based, and standardising care. A physician said the following:

"C*are pathways standardise care around areas where evidence is clear and eliminate unnecessary variation*" (O'Hara et al., 2020, p. 3).

The findings of Hwang et al., (2023) are complementary to Evans-Lacko et al., (2010). Many factors could support or hinder the use of care pathways. Factors like contextual factors, healthcare policies and regulations. Also, clinical and managerial staff involvement, training, financial rewards and flexibility contribute to the successful use of care pathways. By contrast, healthcare providers' lack of knowledge of care pathways, negative view towards the standardisation of care, staff reluctance to adopt changes in practice, staff turnover, time constraints, inadequate information, a shortage of evaluation and feedback moments and unavailable resources/facilities could lead to a reduction in the quality of work (Evans-Lacko et al., 2010; Hwang et al., 2023). The study of Khandaker et al., (2013) reported that the main effect of care pathways on healthcare providers is the change in their focus of work. Due to care pathways, healthcare providers described their work as more 'time-centred' and 'task-centred'. This approach also led to better responsibility and scrutiny of individual care providers as well as the entire team. Healthcare providers emphasised the importance of care pathways being evidence-based and proving clinical value in terms of both increasing clinical efficiency and health outcomes. Working more efficiently and effectively, workload and time pressure healthcare providers face will decrease (Jabbour et al., 2018; Ly et al., 2021).

4.1.1 Workload

Workload is the first measure of job demands. The standardised approach of care pathways helps to distribute the workload more equally among healthcare providers. Tasks and responsibilities are more shared and reduce the chance that certain people overwork themselves. According to Jabbour et al., (2018), care pathways reduce a healthcare provider's cognitive workload, allowing them to concentrate on more complicated tasks and activities. Healthcare providers also stressed the importance of care pathways reflecting a multidisciplinary team approach. The study of Ly et al., (2021) suggested that nurses should have a clear role in care pathways so that the burden of implementation is not exclusively on the shoulders of physicians. Several nurse-initiated care pathways have been successful and reduced the workload of physicians. Additionally, the involvement of nurses in care pathways improves clinical flow and efficiency. Conversely, several included studies addressed that care pathways negatively impact the workload of healthcare providers. Physicians are concerned that implementing and using care pathways increase their workload because they have to switch to a different way of working (Ly et al., 2021). Many healthcare providers do not think care pathways are the solution to decrease workloads and see care pathways more as a stressor and are somewhat sceptical

(Deneckere et al., 2012; Ly et al., 2021; Tørseth & Ådnanes, 2022). Another disadvantage of care pathways which is shared among healthcare providers that increases the workload is the overload of information. They find it difficult to stay up-to-date with the existing care pathways and are unable to educate themselves. A physician said the following:

"*I mean every month it seems like there's a new care pathway. And it's sometimes hard to keep track of the information*"(O'Hara et al., 2020, p. 5).

The review of Deneckere et al., (2012) also showed that the implementation of care pathways increased workload from another perspective. It turned out that the number of clinical contacts in a care pathway group was considerably higher than in a standard care or non-care pathway group. This is quite remarkable because one of the primary purposes of care pathways is to standardise care by reducing variation and rearranging the care process efficient.

4.1.2 Time pressure

Time pressure is the second measure of job demands. Care pathways can influence time pressure healthcare providers face (Jabbour et al., 2018; Ly et al., 2021; O'Hara et al., 2020; Tørseth & Ådnanes, 2022). Care pathways assist healthcare providers in successfully managing their time by establishing the expected timeframes for treatments and tasks. Care pathways also help healthcare providers prioritise work depending on the urgency. This minimises the risk of unnecessary postponements or hurried decision-making and eased the time pressure that healthcare providers face. Jabbour et al., (2018) highlighted that a well-designed care pathway can assist multidisciplinary teams in determining essential management priorities on time. A physician said the following about time pressure:

"*Care pathways prevent a provider who is looking for some guidance, prevent them having to go chasing down the literature in the middle of a shift*" (O'Hara et al., 2020, p. 3).

Yet, not all healthcare providers are enthusiastic about the timeframes of care pathways.

"*The deadlines between action points are way too short. I often see that I have negative time breaks that do not count as legitimate time breaks, so I'm punished for that*" (Tørseth & Ådnanes, 2022, p. 6).

Hence, the study of Tørseth & Ådnanes (2022) reported that some healthcare providers think that the pathway system's processes do not correlate to a real-world timeframe.

4.2 Influence of care pathways on job control

Guidelines and standardisation limit the healthcare providers' autonomy and decision-making power and ability to determine their tasks. This is consistent with the findings of Hwang et al., (2023). Healthcare providers felt restricted because care pathways standardise care. Some physicians expressed concerns about the experiments to standardise care because there are variations between reality and the theory of practice (Hwang et al., 2023). In addition, healthcare providers must retain control in and over care pathways, otherwise, care pathways stirred up frustrations. A psychologist said the following about this:

"*Everything that is involved with the care pathway is just based on an idea that the government does not trust us or understand what we are doing. They want to control us*" (Tørseth & Ådnanes, 2022, p. 6).

However, many of the included studies showed that clarity about job control and guidelines is preferred so that healthcare providers understand what is expected of them, what they can expect from others and how to act. It also promotes uniformity and reduces unjustified deviations in treatments. A social worker working in a care pathway said the following:

"*Everybody knows exactly who's responsible for doing or achieving what*" (Rees et al., 2004, p. 531).

According to Ly et al., (2021) and Rees et al., (2004), care pathways can solve the lack of clarity concerning professional roles, tasks, practice variance, responsibilities and a lack of coordination. If all this becomes clear through a care pathway, the risk of damaging (one's) professional reputation decreases (Jarva et al., 2021).

"*There's just not a lot of consistency in practice right now, so I think having a little more consistency … to guide their orders of their interventions … is always a benefit*" (Ly et al., 2021, p. 6).

The study of O'Hara et al., (2020) acknowledged that adhering to care pathways makes healthcare providers feel more confident and encouraged, and when their practice corresponds with the guidance.

4.2.1 Autonomy

Autonomy is much discussed in the included articles. For healthcare providers, it is important to have autonomy to organise a treatment. A psychologist mentioned that care pathways can alter care providers' feelings of autonomy.

"*If a patient has trouble with sleep, the care pathway states that I must wait at least four consultations before I can do something about it, because the assessment and diagnostic practice must happen first, even if the patient is obviously depressed and has major sleep issues*" (Tørseth & Ådnanes, 2022, p. 7).

Also, Ly et al., (2021) stressed the significant importance of clinical autonomy in the success of a care pathway. Resistance is more likely to emerge when physicians or nurses have the feeling that their experience is not being appreciated or when the pathway fails to deliver the best possible care. Healthcare providers prefer care pathways as a tool that helps them with their practice instead of a set of predefined instructions. Also, healthcare providers do think it is important to consider the clinical practicability of care pathways. This includes leaning on physicians' clinical experience and gathering feedback on how to best execute or improve a care pathway. Tørseth & Ådnanes (2022) argue that a more general and fundamental issue needs attention. Namely, the desirable workflow for care pathways conflict with professional values and autonomy. As physicians were in control of the diagnosis and treatment, they had a better understanding of care pathways and evaluations than nurses. Nurses, on the other hand, believe that they should have a bigger role in care pathways. In general, nurses see care pathways as an opportunity to learn more about the care process and specify the role(s) they can have in care pathways (Ly et al., 2021).

"*Clinical pathways with defined nursing roles can be very successful*" (Ly et al., 2021, p. 6).

The research of Hwang et al., (2023) also found out the use of care pathways were managed by physicians' orders. Nurses feel differently about this (Evans-Lacko et al., 2010; Ly et al., 2021). Due to disagreement regarding autonomy and decision-making dilemmas arise between physicians and nurses. This hinders interdisciplinary work (Liberati et al., 2016). Because of a lower professional position, nurses can have a feeling of powerlessness and lack of engagement in decision-making (Jarva et al., 2021). Also, in mental care, providers experienced that care pathways improve flexibility and responsive care. Nevertheless, care pathways raise professional and interprofessional disagreements also in mental care (Rees et al., 2004). Jabbour et al., (2018) confirm some conflicting concerns between physicians and nurses. Care pathways

change the scope of work within a care team. Nurses get more responsibility (Jabbour et al., 2018). This is well-received by nurses and most physicians. However, some physicians express concerns that care pathways are a threat to their autonomy and decision-making, particularly if care pathways are cynically seen as 'cookbook medicine'. Healthcare providers reported contradictory trust in interprofessional capacity to utilize the care pathway. Physicians concern about nurses' capacity to execute medical orders and nurses are concerned that physicians do not conform to the care pathway (Jabbour et al., 2018). Conversely, the study of Khandaker et al., (2013) reported that responsibilities about clinical decisions are shared among all healthcare providers.

"*So, there may be some physicians who cannot relinquish that sense of responsibility to the triage nurse staff that they are capable of doing... assessing the child properly*" (Jabbour et al., 2018, p. 10).

Care pathways are thus evidence-based standards and best practices. It influences the decision autonomy of healthcare providers. The standardised and evidence-based steps in care pathways limit the flexibility to diverge from it.

4.2.2 Skill discretion

The second measure of job control is skill discretion. By defining the scope of practice and providing expectations for the required skills and competencies at each phase of the care pathway, care pathways influence the skill discretion of healthcare providers. As care pathways standardise care and are evidence-based, it ensures that healthcare providers can use and improve their skills effectively and efficiently within care pathways. Given the increasing complexity of care delivery in an already knowledge-intensive context, the potential for care pathways to expand staff knowledge is critical (Deneckere et al., 2012). This rise in staff expertise is attributable to care standardisation and the ongoing training updates that are included in care routes. Task uncertainty can be reduced and job engagement improved as a result of team members' perceptions of a better degree of competence. This could have a positive impact on staff turnover (Deneckere et al., 2012). Another study noted that care pathways could also be used as an educational tool and are useful for providers who have little clinical experience. A physician of O'Hara et al., (2020) mentioned the following:

"*Care pathways are good for guidance for younger trainees or for people who have been out for a shorter period of time who don't necessarily have that breadth experience*" (O'Hara et al., 2020, p. 4).

The literature also shows that healthcare providers utilise their colleagues' competence and specialised knowledge to increase their competence. This supports the belief that more experienced and specialised healthcare providers are important resources for improving the skills and competencies of healthcare providers in care pathways and multidisciplinary teams (Jarva et al., 2021). The review of Deneckere et al., (2012) revealed that 10 out of 26 articles reported that the implementation of care pathways increases staff knowledge. From all this, then, it can be suggested that care pathways have a positive influence on professional development and role extension. However, it turned out that several participants of Khandaker et al., (2013) reported that role extension, to some extent, damaged the professional identities of certain care providers. Also, one participant said the following about generic working:

"*A waste of having separate disciplines in the team. For joint working to be good and to work...everybody has to be very clear about their core skills*" (Rees et al., 2004, p. 531).

In addition, Hwang et al., (2023) revealed that some healthcare providers think that using care pathways negatively impacts trainees' education and training.

4.3 Influence of care pathways on social support

The studies of Leach et al., (2017) and Rees et al., (2004) discussed that teamwork generates a supportive work environment and healthcare providers experience personal benefits of sharing stress which positively impacts work satisfaction. Working in teams also allows discussing with colleagues and doing quality checking.

"*Can you just have a brief look, what do you think about this? We also work closely with clinicians that come down and talk to us and ask us about things*" (Mæhle et al., 2020, p. 20).

Strong support from clinical managers of healthcare organisations was also a stimulating factor for the quality of work in care pathways (Hwang et al., 2023). Furthermore, when healthcare providers from different departments and specialisations have a good relationship, working together in multidisciplinary teams is easier (Hwang et al., 2023). Care pathways have the potential to support interprofessional teams in enhancing teamwork. Necessary conditions are a context that supports teamwork and includes appropriate active pathway components that can

mediate an effect on team processes. To achieve this, each care pathway requires a clearly defined team approach customised to the needs of each team (Deneckere et al., 2012). Healthcare providers in multidisciplinary teams are specialists with diverse knowledge, viewpoints and abilities. It allows healthcare providers to delve into the knowledge of others. Leach et al., (2017) also show that well-organised multidisciplinary teams improve patient satisfaction and decrease healthcare providers' burnout. However, the support and control of colleagues are not always preferred. Healthcare providers addressed that their co-workers and their failure to comply with the care pathway may result in some emotions, ranging from anxiety to dissatisfaction. They expressed a feeling of pressure to stick to the care pathway. As a physician describes it:

"*There's pressure to follow care pathways. And it also makes people look back at your care and wonder, 'Why did you do that, why are you not following the care pathway?"* (O'Hara et al., 2020, p. 5).

This pressure to conform leads to care providers expressing emotions of guilt when they fail to comply, which can inhibit high-quality care and can trigger conflicts in a team. Tørseth & Ådnanes (2022) argue that care pathways then could generate frustration among healthcare providers. If care pathways want to support working in multidisciplinary teams it is important to invest in team development, education about integration and change management (Rees et al., 2004). Physicians mentioned that care pathways that are better promoted and supported by the organisation are more accepted and used (O'Hara et al., 2020).

4.3.1 Social integration

A measure of social support is social integration. Collaborating in a team with healthcare providers from different backgrounds requires social integration among team members (Liberati et al., 2016). Social integration supports the feeling of being part of the team and promotes an atmosphere of collaboration working for the same goal. According to Khandaker et al., (2013), care pathways enable active case management and leave room for clear clinical leadership. Good leadership can improve social integration. However, it turns out that it is sometimes very challenging to integrate and work together with different disciplines in multidisciplinary teams. This could cause some frustration (Deneckere et al., 2012). A neurologist said the following about an intensivist:

"*Intensivists are too interventionists! These patients sometimes only need some rest, but nobody can stop them to put tubes everywhere! (...) [This morning] a new patient arrived and the intensivist did an ECG without even thinking just because this is the protocol*" (Liberati et al., 2016, p. 34).

Contrasting views on the right clinical treatment can hinder cooperation in multidisciplinary teams which is not beneficial for social integration and the quality of work. Also, a negative effect of multidisciplinary teams is the frequently newly formed teams. It takes time before a team is a good functioning team. Newly formed teams have to battle through the early stages of group growth (Deneckere et al., 2012).

"*Our docs typically may only spend one, maybe two shifts a week in the ED. And so we may have a locum who spends only one shift a month in our hospital. So they are a much harder group to get consistent because they're just not there enough*" (Jabbour et al., 2018, p. 8).

Interdisciplinary and conformity within a care team were also seen as factors influencing the quality of work within care pathways. Participants of the research of Jabbour et al., (2018) discussed how physicians influence nurses' behaviour and vice versa, which impacts social support. Physicians from various disciplines had different perspectives on nurses' involvement in delivering care. Nurses' responsibility was just to carry out orders. As a result, the valuable contributions provided by nurses were not optimally used. Several nurses confirmed that the hierarchical order, imbalanced power and different opinions about the right clinical treatment hindered collaboration with physicians (Liberati et al., 2016). Often in a newly created multidisciplinary teams, nurses functioned as mediators to improve social integration. In the beginning, physicians found it difficult to work together because of different specializations and views on how to deliver care. Nurses had often already worked with those physicians, making them the translator between the different physicians. Of course nurses also have differences in perspectives on the right clinical treatment. However, those rarely hinder working in multidisciplinary teams (Liberati et al., 2016). One nurse said the following about it:

"*We have our differences, of course, but in the eyes of doctors and patients we are all the same. We do what's best for the patients, no matter what (...). We are in a weaker position, we need to stick together if we want to obtain something*" (Liberati et al., 2016, p. 35).

Nurses compared to physicians are more willing to work in multidisciplinary teams and invest in integration.

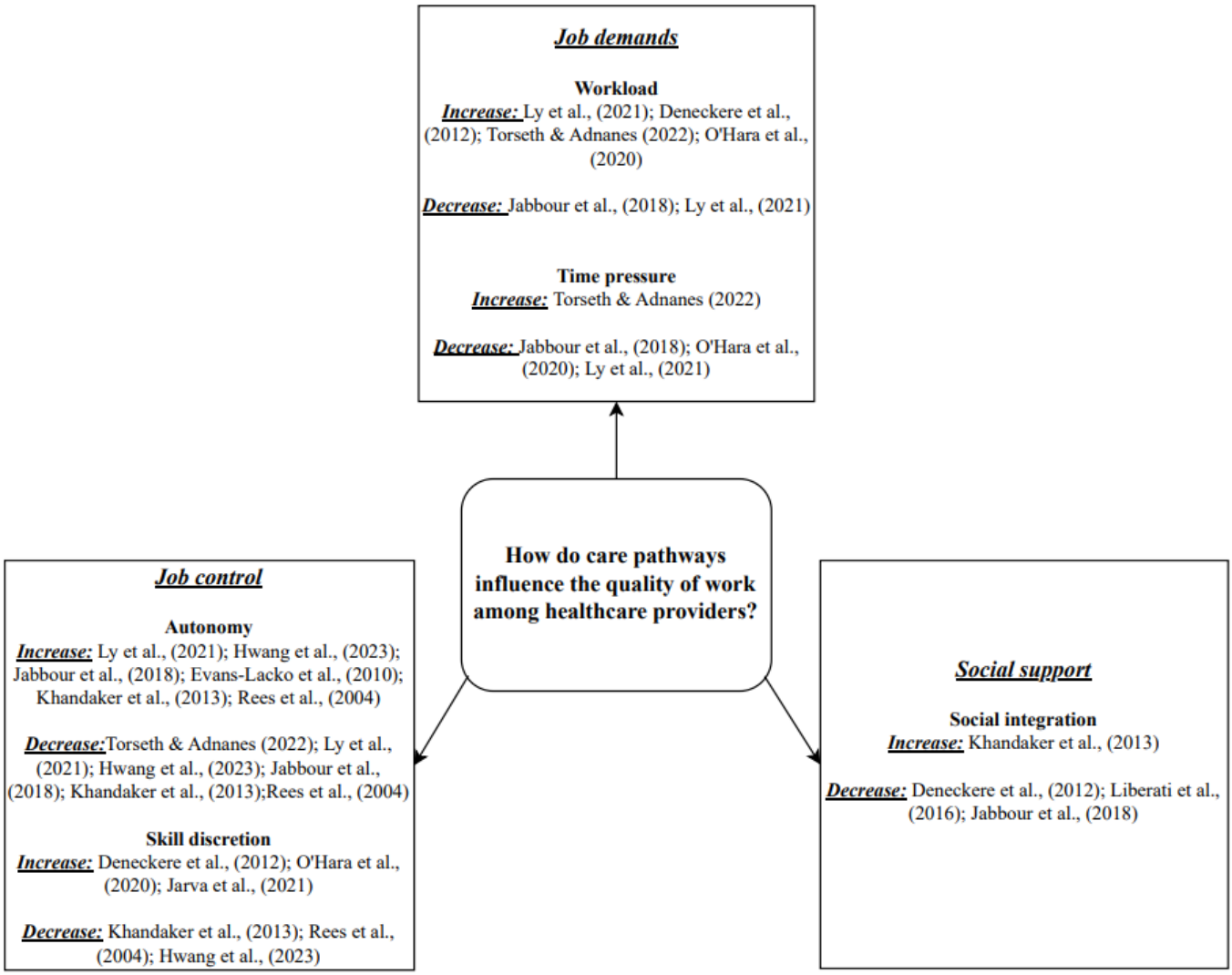

Figure 4: Visual representation of the findings

Chapter 5: Conclusion and discussion

This research aims to contribute to the theoretical knowledge about the influence of care pathways on the quality of work among healthcare providers. This review was conducted to answer the following question: '*How do care pathways influence the quality of work among healthcare providers?*' In this chapter the research question is answered. A thorough review of the included articles resulted in an overview of how care pathways influence the quality of work among healthcare providers. This chapter also covers the discussion.

5.1 Conclusion

Care pathways standardise the care process. Each step of patient care is more streamlined and guidelines are used. Some healthcare providers think that care pathways reduce the workload and time pressure because care is delivered more efficiently and effectively by simply following the steps. However, if there is a lack of clarity, this negatively influences the quality of work. Workload may also increase because after implementing care pathways, the formed multidisciplinary teams have to get used to the changing practices. The workload should decrease after an adoption period, but that is often not the case. Due to care pathways, job control is limited. Care pathways have the opportunity to alter the autonomy of healthcare providers because they just have to follow the guidelines of the care pathway. Many physicians do not like having their autonomy taken away which results in a decrease in quality of work. In contrast, nurses do feel that care pathways give them more autonomy in providing care. Care pathways harmonise practices among physicians and nurses. This struggle around autonomy creates friction between physicians and nurses which negatively influences the quality of work. Nevertheless, care pathways do not take away full autonomy. To provide appropriate decision autonomy, it is crucial to balance the requirement for standardised treatment with the capacity to use the healthcare providers' judgement. Care pathways also influence skill discretion. Following the standardised guidelines healthcare providers can improve their skills very specifically. It will reduce uncertainty and gives confidence. However, following guidelines limits critical thinking and can therefore also hinder the learning process. An absence of social support negatively influences the quality of work. Social integration can increase the feeling of social support, but it is important to be aware of (autonomy) conflicts that may arise between healthcare providers from different disciplines. Multidisciplinary teams have in general a positive influence on quality of work. Healthcare providers feel more included and

incorporated. Achieving a higher quality of work in multidisciplinary teams requires careful management. Bad-functioning teams could lead to an increase in workload and decrease the quality of work.

To conclude, the results show that there are different views on how care pathways influence the quality of work among healthcare providers. Care pathways are seen as a tool for approval and support practices, while others see care pathways as a steering mechanism that deprives them of autonomy. Healthcare providers stated that the use of care pathways reduced or even eliminated medical errors. Working more efficiently and effectively results in a lower workload and time pressure. However, care pathways do sacrifice the autonomy of most physicians. Nurses' autonomy will increase. Skill discretion can increase, but also others say it will decrease because everything is already mapped out in advance. Social support and the functioning of multidisciplinary teams influence the quality of work. Social integration is important to function well in multidisciplinary teams with different disciplines. Knowledge and understanding of the different views on how care pathways influence the quality of work among healthcare providers is important. Acknowledging these differences may help to optimise the quality of work in care pathways.

5.2 Discussion

This section discusses the theoretical and practical implications, a critical reflection on the limitations of this research and recommendations for future research.

5.2.1 Theoretical implications

This thesis has contributed to the existing theoretical knowledge about the influence of care pathways on the quality of work among healthcare providers. Several studies show how care pathways, or a characteristic of care pathways, influence some aspects of the quality of work (Allen et al., 2009; Deneckere et al., 2012; Evans-Lacko et al., 2010; Gurzick & Kesten, 2010; Hogan et al., 2011; Rotter et al., 2011). What this research distinguishes from others is that it takes a broader view of the quality of work with a focus on three indicators, namely job demands, job control and social support. Besides, three characteristics of care pathways (standardisation, evidence-based and multidisciplinary teams) are highlighted that influence the indicators of quality of work. Searching through the existing literature and collecting useful studies about the indicators of quality of work in relation to care pathways and making an

overall overview of it has never been done before. This thesis is of added value because it provides a deeper theoretical understanding of the relation between the indicators of quality of work and care pathways. Each indicator is not isolated, but coherent to the others. Therefore, it is important to look at the indicators in context. The included articles barely did this. High job demands with low control and social support can be a strong predictor for job strain and mental health (Sérole et al., 2021). Healthcare providers in care pathways can experience conflicts regarding autonomy. It could also be argued that high social support and clear job demands can appease conflicts regarding job control to increase the quality of work. If a healthcare provider works in a multidisciplinary team but has the feeling their autonomy is taken away, teamwork may perhaps increase the quality of work, but the lack of autonomy may in turn reduce it. Working in multidisciplinary teams is not necessarily good for job demands and job control (Deneckere et al., 2012; Ly et al., 2021). Standardisation reduces autonomy and can hinder skill discretion (Hwang et al., 2023), but could potentially decrease workload and time pressure.

This research shows the complexities of the interrelatedness of the indicators of the quality of work. Social support can operate as a mediator, but can also be influenced by job demands and job control and vice versa (De Sitter, 1994; Karasek, 1979; Sargent & Terry, 2000; Van Yperen & Hagedoorn, 2003). The research provides an overview of how care pathways influence multiple facets of quality of work, such as workload, time pressure, autonomy and multidisciplinary teamwork and how they interrelate. When talking about quality of work, it is important to look at the indicators in coherence, otherwise potentially distorted outcomes may arise.

5.2.2 Practical implications

The findings of this thesis also add value to practice. Several groups would benefit from a better understanding of how care pathways influence the quality of work among healthcare providers. These are healthcare providers themselves, but also healthcare organisations, patients and society in general. Firstly, the practical implications for healthcare providers. Care pathways are a tool to provide care more efficiently and effectively. The risk of errors is reduced by guidelines and multidisciplinary teamwork is encouraged (De Bleser et al., 2006; Deneckere et al., 2012). This affects the quality of work among healthcare providers. Knowing how it influences the quality of work can help healthcare providers to life a fulfilled working life. Secondly, understanding how care pathways influence the quality of work can enable healthcare organisations to apply adjustments in practices affecting job demands, job control and social

support to optimise the care pathways practices. As a result, it may increase the quality of work. Lastly, patients and society in general potentially can benefit from a better understanding of how care pathways influence the quality of work among healthcare providers. If the quality of work among healthcare providers in care pathways can be improved, patients in care pathways will probably receive a higher quality of care, resulting in better clinical results and overall patient satisfaction (Awosoga et al., 2022; De Bleser et al., 2006; Kieny et al., 2018; Vanhaecht et al., 2007). High quality of care benefits society as a whole. Patients will spend less time in healthcare organisations and costs will reduce (De Bleser et al., 2006; Munitiz et al., 2010; van Hoeve, 2020). It may then create some space in budgets and time for more research into diseases or treatments.

5.2.3 Limitations and recommendations for future research

There are some limitations applicable to this research. The first limitation has to do with a lack of research on this topic. Most research on care pathways focused on the impact on quality of care, patient satisfaction, cost reduction and hospital stay. Only a small number of studies have focused on the influence of care pathways on aspects of quality of work. The results of those studies show inconsistent outcomes. The combination of few studies and inconsistencies makes it difficult to draw an unambiguous conclusion. More research is needed to start recognising patterns and being able to draw a general conclusion. Looking at more measures of the quality of work could be helpful. Secondly, this research provides insights into how care pathways influence the quality of work among healthcare providers and enhances the understanding of how care pathways could look to create high-quality of work among healthcare providers. However, the research does not address how to create a care pathway with high-quality work. Future research could focus on how care pathways can be developed in consultation between healthcare organisations and healthcare providers to maximise the quality of work. Lastly, the background literature chapter briefly mentions that there are different types of care pathways. The literature hardly distinguishes between them. For future research, it would be interesting to see whether there are differences in the quality of work between the types of care pathways.

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Appendices

Appendix 1: Search terms and queries

Search	*Query*	*Yield*
#1	Search: **(care pathways) OR (clinical pathway)** "critical pathways"[MeSH Terms] OR ("critical"[All Fields] AND "pathways"[All Fields]) OR "critical pathways"[All Fields] OR ("care"[All Fields] AND "pathways"[All Fields]) OR "care pathways"[All Fields] OR ("critical pathways"[MeSH Terms] OR ("critical"[All Fields] AND "pathways"[All Fields]) OR "critical pathways"[All Fields] OR ("clinical"[All Fields] AND "pathway"[All Fields]) OR "clinical pathway"[All Fields]) **Translations** **care pathways:** "critical pathways"[MeSH Terms] OR ("critical"[All Fields] AND "pathways"[All Fields]) OR "critical pathways"[All Fields] OR ("care"[All Fields] AND "pathways"[All Fields]) OR "care pathways"[All Fields] **clinical pathway:** "critical pathways"[MeSH Terms] OR ("critical"[All Fields] AND "pathways"[All Fields]) OR "critical pathways"[All Fields] OR ("clinical"[All Fields] AND "pathway"[All Fields]) OR "clinical pathway"[All Fields]	238,753
#2	Search: **((job demands) OR (job control)) OR (social support)** ("job"[All Fields] AND ("demand"[All Fields] OR "demanded"[All Fields] OR "demanding"[All Fields] OR "demands"[All Fields])) OR ("job"[All Fields] AND ("controling"[All Fields] OR "controllability"[All Fields] OR "controllable"[All Fields] OR "controllably"[All Fields] OR "controller"[All Fields] OR "controller s"[All Fields] OR "controllers"[All Fields] OR "controlling"[All Fields] OR "controls"[All Fields] OR "prevention and control"[MeSH Subheading] OR ("prevention"[All Fields] AND "control"[All Fields]) OR "prevention and control"[All Fields] OR "control"[All Fields] OR "control groups"[MeSH Terms] OR ("control"[All Fields] AND "groups"[All Fields]) OR "control groups"[All Fields])) OR ("social support"[MeSH Terms] OR ("social"[All Fields] AND "support"[All Fields]) OR "social support"[All Fields]) **Translations** **demands:** "demand"[All Fields] OR "demanded"[All Fields] OR "demanding"[All Fields] OR "demands"[All Fields] **control:** "controling"[All Fields] OR "controllability"[All Fields] OR "controllable"[All Fields] OR "controllably"[All Fields] OR "controller"[All Fields] OR "controller's"[All Fields] OR "controllers"[All Fields] OR "controlling"[All Fields] OR "controls"[All Fields] OR "prevention and control"[Subheading] OR ("prevention"[All Fields] AND "control"[All Fields]) OR "prevention and control"[All Fields] OR "control"[All Fields] OR "control groups"[MeSH Terms] OR ("control"[All Fields] AND "groups"[All Fields]) OR "control groups"[All Fields] **social support:** "social support"[MeSH Terms] OR ("social"[All Fields] AND "support"[All Fields]) OR "social support"[All Fields]	543,695
#3	Search: **((standardisation) OR (evidence-based)) OR (multidisciplinary teams)**	2,434,383

	"reference standards"[MeSH Terms] OR ("reference"[All Fields] AND "standards"[All Fields]) OR "reference standards"[All Fields] OR "standardisation "[All Fields] OR "standard"[All Fields] OR "standard s"[All Fields] OR "standardisation"[All Fields] OR "standardisations"[All Fields] OR "standardise"[All Fields] OR "standardised"[All Fields] OR "standardises"[All Fields] OR "standardising"[All Fields] OR "standardisation s"[All Fields] OR "standardisation s"[All Fields] OR "standardize"[All Fields] OR "standardized"[All Fields] OR "standardizes"[All Fields] OR "standardizing"[All Fields] OR "standards"[MeSH Subheading] OR "standards"[All Fields] OR "evidence-based"[All Fields] OR (("interdisciplinary studies"[MeSH Terms] OR ("interdisciplinary"[All Fields] AND "studies"[All Fields]) OR "interdisciplinary studies"[All Fields] OR "multidisciplinary"[All Fields]) AND ("team s"[All Fields] OR "teamed"[All Fields] OR "teaming"[All Fields] OR "teamness"[All Fields] OR "teams"[All Fields])) **Translations** **standardisation :** "reference standards"[MeSH Terms] OR ("reference"[All Fields] AND "standards"[All Fields]) OR "reference standards"[All Fields] OR "standardisation "[All Fields] OR "standard"[All Fields] OR "standard's"[All Fields] OR "standardisation"[All Fields] OR "standardisations"[All Fields] OR "standardise"[All Fields] OR "standardised"[All Fields] OR "standardises"[All Fields] OR "standardising"[All Fields] OR "standardisation 's"[All Fields] OR "standardisation s"[All Fields] OR "standardize"[All Fields] OR "standardized"[All Fields] OR "standardizes"[All Fields] OR "standardizing"[All Fields] OR "standards"[Subheading] OR "standards"[All Fields] **multidisciplinary:** "interdisciplinary studies"[MeSH Terms] OR ("interdisciplinary"[All Fields] AND "studies"[All Fields]) OR "interdisciplinary studies"[All Fields] OR "multidisciplinary"[All Fields] **teams:** "team's"[All Fields] OR "teamed"[All Fields] OR "teaming"[All Fields] OR "teamness"[All Fields] OR "teams"[All Fields]	
#4	#1 AND #2 AND #3	824

Table 1: Search terms and queries PubMed

For Web of Science, the exact same search terms and queries were used only the output looks slightly different. I did not manage to get the same extended output as in Pub Med.

Search	***Query***	***Yield***
#1	(ALL=(care pathways)) OR ALL=(clinical pathways)	409,250
#2	((ALL=(job demands)) OR ALL=(job control)) OR ALL=(social support)	775,918
#3	((ALL=(standardisation)) OR ALL=(evidence-based)) OR ALL=(multidisciplinary teams)	400,797
#4	#1 AND #2 AND #3	452

Table 2: Search terms and queries Web of Science

Appendix 2: CASP qualitative studies

1. Was there a clear statement of the aims of the research?
2. Is a qualitative methodology appropriate?
3. Was the research design appropriate to address the aims of the research?
4. Was the recruitment strategy appropriate to the aims of the research?
5. Was the data collected in a way that addressed the research issue?
6. Has the relationship between researcher and participants been adequately considered?
7. Have ethical issues been taken into consideration?
8. Was the data analysis sufficiently rigorous?
9. Is there a clear statement of findings?
10. How valuable is the research?

Studies	***Answers***
Hwang et al., (2023)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Highly
Jabbour et al., (2018)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Highly
Khandaker et al., (2013)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Reasonably
Leach et al., (2017)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Reasonably
Liberati et al., (2015)	1. Yes

	2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Highly
Ly et al., (2021)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Highly
Maehle et al., (2020)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Medium 8. Yes 9. Yes 10. Reasonably
O'Hare et al., (2020)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Highly
Rees et al., (2004)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Highly, via snowball related articles
Tørseth et al., (2022)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Medium 8. Yes 9. Yes 10. Highly

Appendix 3: CASP systematic reviews

1. Is the review question clearly and explicitly stated?
2. Were the inclusion criteria appropriate for the review question?
3. Was the search strategy appropriate?
4. Were the sources and resources used to search for studies adequate?
5. Were the criteria for appraising studies appropriate?
6. Was critical appraisal conducted by two or more reviewers independently?
7. Were there methods to minimize errors in data extraction?
8. Were the methods used to combine studies appropriate?
9. Was the likelihood of publication bias assessed?
10. Were recommendations for policy and/or practice supported by the reported data?
11. Were the specific directives for new research appropriate?

Studies	***Answers***
Deneckere et al., (2012)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Yes 11. Yes
Evans-Lacko et al., (2010)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. No 10. Yes 11. Yes
Jarva et al., (2021)	1. Yes 2. Yes 3. Yes 4. Yes 5. Yes 6. Yes 7. Yes 8. Yes 9. Yes 10. Yes 11. Yes