The Effectiveness of Geriatric Rehabilitation

An exploration of effectiveness outcome measures and characteristics of treatment environment

MSc BA Thesis

Author:	B. Veneberg, MSc
Supervisors University of Twente:	ir. E.J. Sempel
	prof. dr. ir. A. Bruggink
Supervisor ParView:	drs. ing. V. Zevenhuizen
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University of Twente
Department of Finance

Abstract

Background

Effectiveness of care is an essential aspect of geriatric rehabilitation. Usually, there are indicator sets to measure the effectiveness of care. However, this is not the case for geriatric rehabilitation. Therefore, the aim of this study was to identify effectiveness outcome measures feasible for geriatric rehabilitation. Additionally, characteristics of treatment environment that could influence the effectiveness of geriatric rehabilitation were explored.

Methods

To identify outcome measures and characteristics of treatment environment for geriatric rehabilitation, a literature search was performed. Thereafter, in the quantitative phase, the feasibility of the identified outcome measures was assessed using questionnaires. The questionnaires were send to managers and geriatric doctors of organizations providing geriatric rehabilitation in the Netherlands. Interviews with a geriatric doctor, a manager, and nurses in the qualitative part of this study provided insight into the effect of the characteristics of treatment environment on the effectiveness of geriatric rehabilitation.

Results

Eight outcome measures were identified from the literature, seven of these outcome measures are feasible for geriatric rehabilitation. One additional feasible outcome measure came up during the quantitative research. Eight characteristics of treatment environment were identified from the literature, seven characteristics are expected to influence the effectiveness of geriatric rehabilitation.

Conclusion

This study contributes to the effectiveness of geriatric rehabilitation by providing a first set of outcome measures. Additionally, this study provided insight into characteristics of treatment environment that

can influence the effectiveness of geriatric rehabilitation. Follow-up research is recommended and may include an assessment of the validity and reliability of the outcome measures.

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1. Introduction

In this chapter, the subject of the study is provided. First, this chapter starts with a background of geriatric rehabilitation. Second, the problem statement is defined. Thereafter the research question is provided, and the contribution of the study is discussed. Finally, the outline of the study is presented.

1.1 Background

The population of people in the Netherlands is ageing. In 1990 there were 1.9 million inhabitants 65 years and older in the Netherlands. In 2019, this number increased to over three million. The expectation is that there will be almost five million people 65 years and older in the Netherlands by 2050 (CBS, 2020). An ageing population is associated with an increase in multimorbidity and geriatric syndromes such as impaired cognition, frailty, gait and balance problems, which leads to an increased risk of disabilities (Stucki et al., 2018; Chatterji et al., 2015; WHO, 2011). Patients with multimorbidity and geriatric syndromes are more likely to get hospitalized (Covinsky et al., 2011). Forty per cent of the frail and older persons (>70 years) are hospitalized at some moment (Covinsky et al., 2011; Gill et al., 2010). After hospitalization, 11 per cent of those older persons are referred to a geriatric rehabilitation facility (Marengoni et al., 2008). In 2018, 52.000 patients were treated in a geriatric rehabilitation facility in the Netherlands (Actiz, 2019). Currently, 146 healthcare organizations in the Netherlands provide geriatric rehabilitation.

Geriatric rehabilitation is a sophisticated type of care provided in skilled nursing facilities. It is defined as a multidisciplinary set of evaluative, diagnostic and therapeutic interventions to restore functioning or enhance residual functional capability in older people with disabling impairments (Boston Working Group, 1997). The primary goal of geriatric rehabilitation is that patients return to their home situation; on average, 73% of geriatric patients accomplish this goal. However, other follow-up care options will be considered if this is not possible. Follow-up care can include, for example, admission to a nursing home or hospice. Patients are often referred to a geriatric rehabilitation facility from the hospital, but they may also enter it from their home situation. In order to define if patients are

qualified for geriatric rehabilitation, triage by a geriatrician will be performed preliminary to the intake at the facility. Five different diagnosis groups of geriatric rehabilitation can be distinguished: cerebrovascular accident, elective orthopaedics, trauma, amputations, and a miscellaneous group for other diagnoses, for instance, heart failure or chronic obstructive pulmonary disease. Geriatric rehabilitation is complex, and many care professionals are involved in the care process since patients have different diseases, conditions, and symptoms and therefore different needs regarding treatment. The elderly care physician is often the principal of the rehabilitation team. Other members usually include the nursing staff, physiotherapist, psychologist, social worker, speech therapist, orthopedist, and dietician (Verenso, 2020; Holstege et al., 2017).

Geriatric rehabilitation is an expensive type of care. The costs of geriatric rehabilitation in the Netherlands were more than 700 million in 2018. Geriatric rehabilitation is relatively expensive since the care is complex, and many healthcare providers are involved. The average length of stay was 39 days in 2019, which is also a reason for the substantial costs of care (Actiz, 2020). In order to keep the healthcare system affordable, it is important to provide care as effectively as possible. Since the costs and effectiveness of geriatric rehabilitation are important factors, it is necessary to understand how healthcare is financed and what effective care is.

Four system laws regulate the healthcare system in the Netherlands; Healthcare law, Long-term care act, Social support law, and the Juvenile law (in Dutch: Zorgverzekeringswet (Zvw), Wet langdurige zorg (Wlz), Wet maatschappelijke ondersteuning (Wmo) en de Jeugdwet). Geriatric rehabilitation is regulated by the Healthcare law, which is responsible for 60 per cent of the total healthcare budget in the Netherlands. Within the Dutch healthcare system, every resident must have healthcare insurance (Rijksoverheid, 2016). There are ten healthcare insurers in the Netherlands (Zorgwijzer, 2022). These healthcare insurers receive money through premiums from insured customers. Nevertheless, more than the premiums is needed; the other half of the necessary money comes from the government. The government received this budget for healthcare insurers through taxes. Healthcare insurers use their budget to buy healthcare for their insured customers, since they are obliged to offer them the primary healthcare they need. However, healthcare is expensive, and there is limited money available. Therefore healthcare insurers negotiate with healthcare providers and pay strict

budgets for a specific type of treatment (Diagnose Behandel Combinatie in Dutch) (Rijksoverheid, 2016). For this reason, providers of geriatric rehabilitation care have to negotiate with healthcare insurers about the amount of money they receive for a specific treatment. When providers of geriatric rehabilitation care exceed their budgets, they have to negotiate again with the insurer about the reimbursement. Unfortunately for the healthcare provider, the negotiation is not always successful. Consequently, it is essential for providers of geriatric rehabilitation to treat the patient within the predetermined DBC. In order to do so, care should be provided as effectively as possible.

To provide more information about what effective healthcare is and why providers of geriatric rehabilitation need to deliver effective healthcare, this concept is now explained. Effectiveness refers to the extent to which a given intervention or service produces health outcomes in individuals to whom it is offered. Measuring effectiveness helps to identify efficient ways of achieving desired outcomes (Konu et al., 2009). Assessing the effectiveness of geriatric rehabilitation could help identify which aspects of the delivered care could be improved. Arising from there, improving the effectiveness of geriatric rehabilitation could result in better health outcomes for patients. For example, patients can be discharged earlier from the geriatric rehabilitation facility when better health outcomes can be achieved. This is beneficial for the provider of geriatric rehabilitation since the provider receives a fixed budget for a specific treatment, regardless of the number of days the patient is admitted to the facility. Providing ineffective healthcare could thus result in long-term rehabilitation of geriatric patients, which results in financial problems for the provider of geriatric rehabilitation. Additionally, when healthcare insurers suspect that an organization provides ineffective healthcare, the insurer could give the provider of geriatric rehabilitation a discount on the healthcare budget for the next period, which means that the healthcare provider receives a cut on the budget, resulting in more financial discomfort for the healthcare provider.

Since effectiveness is an essential aspect of geriatric rehabilitation, organizations would like to have indicators to measure the effectiveness. Additionally, organizations want insight into the different aspects influencing effectiveness. However, studies and information on the concept effectiveness are scarce for geriatric rehabilitation. There are no established outcome measures for geriatric rehabilitation or studies describing factors that can influence the effectiveness. Variations in effectiveness are likely

to be attributable to variations in a range of contextual factors influencing the effectiveness of healthcare, such as organizational characteristics and characteristics of the treatment environment (Øvretveit, 2011; Taylor et al., 2011). Therefore, organizational characteristics (e.g. size and location) and characteristics of the treatment environment (e.g. therapy time and composition of treatment team) could be used to identify which aspects influence the effectiveness of geriatric rehabilitation (Taylor et al., 2011).

1.2 Problem statement

Providers of geriatric rehabilitation experience financial pressure from health insurers and are forced to evaluate the effectiveness of care. However, there are no established outcome measures for the effectiveness of geriatric rehabilitation. Additionally, there are no studies describing factors that can influence the effectiveness. Exploring outcome measures to evaluate the effectiveness of geriatric rehabilitation could help providers of geriatric rehabilitation to stay or become financially healthy. Additionally, exploring characteristics of the treatment environment that could influence the effectiveness of geriatric rehabilitation could help providers to redesign healthcare to be more effective.

1.3 Research question

This research explores different effectiveness outcome measures for geriatric rehabilitation and characteristics of the treatment environment that could influence the effectiveness. Therefore the following research question is formulated:

‘’ How can the effectiveness of geriatric rehabilitation be measured, and what characteristics of the treatment environment could influence the effectiveness? ’’

1.4 Contributions

It is relevant to study effectiveness outcome measures and characteristics of treatment environment for geriatric rehabilitation for scientific and practical reasons.

The subject is relevant from a scientific perspective for several reasons. First, this study will contribute to the theory by describing the possible effect of characteristics of the treatment environment on the effectiveness of geriatric rehabilitation. The influence of characteristics of the treatment environment on the effectiveness of geriatric rehabilitation has not been studied before. Herewith this study aims at reducing the knowledge gap around this subject. Second, the effectiveness outcomes can be benchmarked between organizations. Differences can be identified and explained, resulting in best practices. Sharing information on best practices creates awareness of differences, increases efficiency, and decreases costs (Fontaine et al., 2010; Park et al., 2015).

Besides the scientific relevance, there are practical contributions. GRZ E-cademy, a partnership for organizations that provide geriatric rehabilitation, is developing a method to gather effectiveness data from geriatric rehabilitation facilities. This study contributes by providing insight into the outcome measures the GRZ E-cademy can collect and the possible factors influencing the effectiveness. This method could be used to monitor the process for several years and to assess whether the effectiveness of geriatric rehabilitation improves.

1.5 Outline of the study

The outline of the thesis is as follows; the literature review in chapter two describes performance in healthcare first. After that, organizational factors that could influence effectiveness are elaborated. Paragraph 2.3 focuses on outcome measures to evaluate the effectiveness of geriatric rehabilitation. Paragraph 2.4 explores different characteristics of the treatment environment that could influence the effectiveness of geriatric rehabilitation. The organizational factors, characteristics of the treatment environment and outcome measures will be used to construct a conceptual framework in paragraph 2.5. In chapter three, the methodology is elaborated. Chapter four presents the results. Finally, the conclusion and discussion are included in chapter five.

2. Literature review

In order to explore the effectiveness of geriatric rehabilitation, a broader understanding of performance in healthcare is needed. Therefore the concept of performance and how effectiveness is related to this is elaborated in paragraph 2.1. Thereafter, paragraph 2.2 explores organizational factors that can influence performance. When the concept of performance and factors influencing the performance are elaborated, paragraph 2.3 will focus on this study's first aim: exploring effectiveness outcomes for geriatric rehabilitation. Paragraph 2.4 focuses on the second aim, exploring different characteristics of the treatment environment of geriatric rehabilitation. Finally, a conceptual framework is presented in which all the aspects of the literature review are included.

2.1 Performance in healthcare

A key pillar of healthcare is to report and measure performance. In healthcare, performance means maintaining the well-being of patients and achieving business goals simultaneously (Bradea & Mărăcine, 2015). Organizations that provide healthcare are frequently pressured to limit costs from increasing expenditures on treatments and achieve high efficiency to sustain the quality of treatment (Aletras et al., 2019; Weir et al., 2009). Therefore, assessment of performance in healthcare is important to ensure high-quality care (Rahman et al., 2019). Furthermore, recent developments in science and technology have made the healthcare sector highly efficient at collecting data using systems like electronic health records. Hence, collecting field-level data gets easier and accumulating them to create secondary data for research purposes and to get an insight into the organization's performance is essential.

Efficiency and effectiveness depend on performance. Pinprayong and Siengthai (2012) wrote that organizational performance is effectiveness multiplied by efficiency. However, the distinction between efficiency and effectiveness is not always clear. Efficiency is the ratio of useful work a machine or process performs to the total energy expended or heat taken. The effectiveness of an organization constitutes its ability to perform a function with optimal input and output levels. Peter Drucker (1967) stated that effectiveness is doing the right things, and efficiency is doing things right.

Measuring and reporting performance aims to improve care quality and ensure transparency and accountability (Brand et al., 2012; NHHRC, 2009; Smith et al., 2008). Several researchers studied performance in healthcare. Most of the studies attempt to identify and predict indicators to measure the performance of a healthcare organization. Healthcare facilities face enormous challenges and pressure due to the increasing number of patients. Research focusing on overall performance indicators in healthcare facilities may aid decision-makers in costing and fixing patient treatment levels. Identifying these indicators can also help managers plan and act in the future (Rahman et al., 2019).

Arah et al. (2004) explored the effectiveness of healthcare and its indicators. They wrote that, on a national scale, effectiveness often implies the achievement of high-quality care outcomes. Internationally effectiveness often implies the efficient achievement of system objectives. Indicators are, therefore, mainly outcome indicators and less process measures. Arah et al. (2004) conclude that effectiveness becomes the core of health systems performance. This represents the urgency of measuring and assessing effectiveness in geriatric rehabilitation. Arah et al. (2006) developed a conceptual framework for The Health Care Quality Indicator Project of the Organization for Economic Cooperation and Development. The study aimed at developing a set of indicators for comparing healthcare quality across member countries of the Organization for Economic Cooperation and Development and gives an overview of dimensions in healthcare performance. The authors concluded that a healthcare performance framework takes a clinical or technical view of healthcare in relation to health (needs). This indicates that besides the clinical and technical aspects of measuring performance in geriatric rehabilitation, patients' health needs can be considered.

Veillard et al. (2005) constructed a performance assessment framework for hospitals. The study provides six dimensions for assessing hospital performance: clinical effectiveness, safety, patient-centeredness, production efficiency, staff orientation, and responsive governance. Over one hundred indicators were identified. However, the authors argue that limiting the number of indicators and selecting key ones is essential. In this study, the effectiveness of healthcare is explored, which is one dimension of hospital performance. Besides Veillard et al. (2005), Meier et al. (2013) also wrote that key performance indicators are required to assess performance. Hence the set of effectiveness outcomes for geriatric rehabilitation has to be compact.

2.2 Organizational factors influencing performance in healthcare

Now that some background information about performance in healthcare has been elaborated, the literature is consulted about organizational factors that could influence performance in healthcare to gain a broader understanding of performance.

2.2.1 Size

The size of hospitals and other healthcare organizations is a common factor related to performance and efficiency (Garcia-lacalle & Martin, 2010). More comprehensive hospitals or healthcare organizations are frequently thought to produce at inferior expenses than more modest hospitals or healthcare organizations. The fundamental argument is that more extended hospitals or healthcare organizations serve from economies of scale, encountering diminishing expenses per production while volume increments. More extensive hospitals or healthcare organizations might produce at more economical charges due to the subsequent arguments: specialized material usually comes in assemblies of some minimum quantity, so more extensive production causes more efficient usage. Advantages from the department of labour may occur since a more extensive workforce promotes reducing the variety of services delivered by any employee allowing for standardization. Additionally, a larger workforce and technological infrastructure may support compensating more efficiently for sicknesses, withdrawal of employees or technological difficulties. On the other hand, diseconomies of scale may appear to exceed a particular size, possibly since a more extended hospital or healthcare organization results in high expenses for overhead, bureaucratic forms of organization, and complex interdependencies proposing difficulties of coordination and cooperation (Street et al., 2010).

The literature also comprises different opinions about the mechanism of economies of scale within healthcare. Different authors argue that larger hospitals perform better than smaller hospitals, supporting the existence of economies of scale (Prior, 2006; Ferrier & Valdmanis, 2004). Additionally, some studies support the existence of economies of scale but argue that only hospitals with around one hundred beds experience the positive benefits from the mechanism and that the mechanism becomes

exhausted for hospitals with around two to three hundred beds (Ahgren, 2008; Dranove, 1998; Lindrooth et al., 2003). On the other hand, some studies disagree with economies of scale within healthcare. These studies conclude that smaller hospitals perform better than larger hospitals since smaller hospitals are easier to manage (Huerta et al., 2008; Oliveira & Bevan, 2008; Pina & Torres, 1996). Lastly, some authors do not find any relationship between size and efficiency and explain differences in performance as a consequence of internal management factors (Chern & Wan, 2000; Mick & Wise, 1996; Weil, 2003).

2.2.2 Specialization vs Economies of scope

The number of services a hospital or other healthcare organization provides may influence (financial) performance. There are two ways the amount of services influences the (financial) performance.

On the one hand, the mechanism of economies of scope argues that increasing the range of provided services results in lower costs and better performance. This could be achieved when providing two or more services is more efficient than providing each service individually (Panzar & Willig, 1981; Street et al., 2010). These expense benefits can be created through shared utilization of resources such as technology, employees, or general overhead such as spreading fixed expenses of operating rooms or intensive care units over various distinct but interrelated operations (Street et al., 2010). Thus, for instance, it might be less costly to establish the emergency department, fracture, trauma and orthopaedic wards nearby rather than locating them in separate areas, as this indicates that equipment is shared and personnel in various departments can operate more efficiently together.

On the other hand, the opposite of economies of scope is also argued, indicating that hospitals and other healthcare organizations that specialize experience lower costs than hospitals that provide many services (Dranove, 1987). One understanding of specialization is to preserve resources for particular objectives when otherwise, there would be competing demands on their use (Harris, 1977; Kjekshus & Hagen, 2005; Street et al., 2009). A different argument is that specialization facilitates expertise to develop and flourish. Hospitals and healthcare organizations that specialize may be more

experienced at evaluating practice over a more bounded variety of activities. Clinical outcomes can improve if doctors perform the same procedure more frequently (Street et al., 2010).

2.2.3 Technology

The relationship between hospital costs and technological equipment has been on the research agenda for several decades. Many of the investigations were, and some are still, inspired by non-price competition among hospitals (Joskow, 1983; Luft et al., 1986). The latter argue that, as in most Western health systems, patients are not sensitive to hospital prices (since they are insured), and the quality of care delivered tends to be hard to judge; hospitals can feel motivated to (over-) invest in "high technology" as a competitive strategy to attract (profitable) patients. This may result in a "medical arms race", which can cause higher hospital expenditure and increase costs per case.

At the same time, it has been stressed that technology investments in hospitals may encompass product, process and organizational innovation that can be hypothesized to influence hospitals differently (Zweifel & Breyer, 1997). For example, technological equipment may increase total costs per case but may also decrease total costs per case. Similarly, process and organizational innovation can be hypothesized to increase or decrease costs per case. Given the theoretical background, it is hard to justify any general statement about the expected relationship between hospital costs and technology or technical equipment.

The multidimensional character of technology is one of the reasons why general technological indices - in its simplest form, the sum of the number of services each hospital offers from a list of possible services - are criticized as they are not able to account for the heterogeneity of technology (Spetz & Maiuro, 2004). Moreover, an underlying hypothesis suggesting a specific relation between technology on the one side and hospital costs on the other can hardly be specified, undermining well-grounded modelling.

A common alternative is using specific technology indices modelled from a vector of known efficacious technologies at the hospital level (Pitterle et al., 1994; Prince, 1998). However, this category of explanatory variables is also problematic when used to explain cost variation between hospitals. The

main reason is that technologies or technological equipment to be included are commonly selected more or less arbitrary. At the same time, empirical studies confirm that variable omission and variable selection concerning hospital technology substantially affect the results of parametric hospital cost functions (Cremieux & Ouellette, 2001; Street et al., 2010).

2.3 Measuring effectiveness in geriatric rehabilitation

Now that performance in healthcare and organizational factors influencing the performance have been elaborated, the focus on geriatric rehabilitation will be made. Effectiveness is a dimension of performance, as mentioned in the introduction. This study aims to explore the effectiveness outcomes of geriatric rehabilitation. Measuring and assessing effectiveness is new within geriatric rehabilitation. However, based on other rehabilitation disciplines, several effectiveness outcomes can be identified from the literature.

2.3.1 Readmission

The first possible outcome measure for geriatric rehabilitation is readmission to the hospital (Bachmann et al., 2010). Readmissions could indicate insufficient care or admission of patients unsuitable for geriatric rehabilitation. According to Benbassat and Taragin (2000), on average, 9% to 48% of the readmissions are preventable since the readmissions were caused by substandard care during the treatment. This substandard care could include poor resolution of the main problem, unstable therapy at discharge, and inadequate post-discharge care. Readmissions are costly and disadvantageous for the effectiveness of geriatric rehabilitation (Leppin et al., 2014). Since particularly elderly are readmitted to a hospital or nursing home, together with the fact that readmissions could be caused by substandard care and the negative influence on the effectiveness of care, this outcome measure can be seen as a variable to measure the effectiveness of geriatric rehabilitation.

2.3.2 Accomplishment of rehabilitation goals

The purpose of geriatric rehabilitation is that patients return to their home situation. In order to achieve this purpose, patients have to accomplish predetermined rehabilitation goals. Ineffective care can be one of the reasons for not achieving rehabilitation goals. In this case, the patient will be transferred to long-term care. When geriatric patients could not accomplish the rehabilitation goals, the rehabilitation care was ineffective since the patient was not suitable for geriatric rehabilitation or the provided rehabilitation therapy was of bad quality (Janssen et al., 2019). For this reason, accomplishing rehabilitation goals is regarded as a measure of the effectiveness of geriatric rehabilitation. This variable has been used before as an outcome measure for the effectiveness of rehabilitation in papers by Zeeli and Isaacs (1988) and Stolee et al. (1999).

2.3.3 Functional improvement

Depending on the patient's diagnosis, an essential objective of geriatric rehabilitation is that patients achieve functional improvement. Patients enter a geriatric rehabilitation facility in one state and may change due to the therapy (Rubenstein et al., 1991). Patients receive therapy from different professionals to gain functional improvement. Also, other factors in the rehabilitation facility, such as an enriched rehabilitation environment, could influence the functional improvement of patients. When healthcare and therapy are effective, patients can achieve more functional improvement quickly. Therefore, functional improvement can be seen as an essential measure of the effectiveness of care. Functional improvement can be measured using the Barthel or USER score (Bachmann et al., 2010; Bouwstra et al., 2019). Functional improvement is a standard outcome measure in rehabilitation and is often used in studies to assess the effect of the provided care and therapy (Zeeli & Isaacs, 1988; Stolee et al., 1999; Johnston et al., 2003; Kauh et al., 2005; Boult et al., 1998; Wade, 2003).

2.3.4 Length of stay

The length of stay represents the number of days a patient is admitted to the rehabilitation facility. Organizations that provide geriatric rehabilitation receive a fixed amount of money to treat a specific

condition. This is called a diagnosis treatment combination (diagnose behandelcombinatie in Dutch). Since the organization that provides geriatric rehabilitation is not reimbursed per day that the patient is treated in the facility, it is profitable for the organization that a patient returns to the home situation whenever this is possible. When the treatment is effective, patients accomplish their rehabilitation goals earlier, which results in a return to the home situation, hence a financial incentive. The length of stay is thus a significant indicator of the cost and effectiveness of treatment and, therefore, essential to consider. Length of stay is also used in many other studies to measure the effectiveness of rehabilitation (Johnston et al., 2003; Kauh et al., 2005; Boult et al., 1998; Holstege et al., 2017).

2.3.5 Discharge destination

The primary goal of geriatric rehabilitation is that patients return to their home situation. However, unfortunately, not all patients achieve sufficient functional improvement to return home. This could be because patients were admitted to a geriatric rehabilitation facility, while this type of care was inappropriate for them. In this case, patients are often referred to a nursing home where they stay for a more extended period or the rest of their life. Furthermore, geriatric rehabilitation is costly compared to care in a nursing home. Therefore, treating patients in a geriatric rehabilitation ward is inefficient when they do not improve enough to return to their home situation (Demers et al., 2004; Kauh et al., 2005). Therefore, patients' discharge destination is an essential measure of effectiveness.

2.3.6 Mortality

Instead of returning to the home situation or transferring to a nursing home, it is also possible that a patient deceases. This could have different causes, e.g. admission of patients who are too ill or fragile for a geriatric rehabilitation ward. Medical errors or lousy quality of healthcare could also result in the death of patients. When patients decease, geriatric rehabilitation can be considered ineffective since patients cannot accomplish rehabilitation goals and return home (Bachmann et al., 2010; Rubenstein et al., 1991).

2.3.7 Complications

Within healthcare, there is the risk of patients who develop complications. Complications often result in an increased demand for care from the patient who developed a complication. Complications can occur spontaneously or can be the result of a medical error. Complications are disadvantageous for the effectiveness of geriatric rehabilitation since the length of stay and demand for healthcare could increase, possibly without financial compensation (Prvu Bettger & Stineman, 2007).

2.3.8 Patient satisfaction

The last outcome measure for geriatric rehabilitation identified from the literature is patient satisfaction (Janssen et al., 2019). Patient satisfaction refers to the extent that patients are satisfied with the received rehabilitation care. This satisfaction is based on functional improvement and the total complete experience during the treatment. This could include the daily care nurses provide, the quality of food, the friendliness of personnel, and whether the coffee is tasty. Thus, this measure goes beyond the objective measures and implies the total experience during the treatment in a geriatric rehabilitation facility. Patient satisfaction is mainly measured using the Netto Promotor Score (NPS) (Janssen et al., 2019).

This paragraph identified eight outcome measures for the effectiveness of geriatric rehabilitation from the literature. Another aim of this study is to explore factors that can influence the effectiveness of geriatric rehabilitation. Therefore the following paragraph focuses on aspects that can influence the effectiveness of geriatric rehabilitation.

2.4 Characteristics of treatment environment

While exploring the effectiveness of geriatric rehabilitation, factors that could influence the effectiveness are essential to consider. In paragraph 2.2, a few organizational characteristics that could influence performance are elaborated. However, these organizational characteristics are more on a macro level since they influence performance. Effectiveness is a dimension of performance, and when

exploring this effectiveness, more micro-level characteristics can be considered. In the case of geriatric rehabilitation, the characteristics of the treatment environment can be regarded as more micro-level characteristics. Therefore this paragraph explores the different characteristics of the geriatric rehabilitation treatment environment that could influence its effectiveness.

2.4.1 Therapy time

The first characteristic of the treatment environment that can be identified from the literature is therapy time. The therapy time is the amount of time spent on physical therapy by a physiotherapist or occupational therapist. When the geriatric patient is recovering from a cerebrovascular accident, therapy time can also include therapy from a speech therapist. Several studies showed that most patients have a low activity level during inpatient rehabilitation. Therefore therapy from a therapist is essential for geriatric patients (Huijben-Schoenmakers et al., 2014; Huijben-Schoenmakers et al., 2009; Vermeulen et al., 2013; De Weerdt et al., 2000; Skarin et al., 2013; Janssen et al., 2014; West & Bernhardt, 2012). Higher training intensity and higher physical activity result in better functional ability and a higher percentage of recovery (Talkowski et al., 2009; Lenze et al., 2012). Therefore, more therapy time could result in better rehabilitation outcomes, which is beneficial for the effectiveness of geriatric rehabilitation. While there is evidence that more therapy time results in better rehabilitation outcomes, not all organizations provide the maximal amount of therapy to their patients. The reason behind this is that providing therapy is costly. Delivering more therapy than necessary has, therefore, a negative influence on the financial performance of an organization. Finding the right balance could be complicated, and because of this, organizations make different tradeoffs resulting in diverse practices regarding therapy time.

2.4.2 Group training

The second characteristic of the treatment environment that could influence the effectiveness of geriatric rehabilitation is whether group training is offered. Group training is a therapy involving more than two geriatric patients, usually with a similar degree of functional ability. The patients participating in group

training are undertaking the same exercises or activities under the direction of one therapist (English et al., 2007). Studies show that group training has a positive influence on the empowerment and self-esteem of patients. Additionally, group training socially activates patients, resulting in fewer feelings of loneliness (Savikko et al., 2010; Nilsson & Nygård, 2003). These factors support discharge from the rehabilitation facility to home (Nilsson & Nygård, 2003). Besides the positive effect on geriatric patients, group training could positively affect business results since group training is often used to increase practice time without increasing staffing (English et al., 2017; Hammond et al., 2015; English et al., 2014).

2.4.3 Enriched rehabilitation environment

An enriched rehabilitation environment is another factor within geriatric rehabilitation facilities that could influence the effectiveness. An enriched rehabilitation environment encourages patients to do physical training and activities that contribute to the rehabilitation process outside the standard therapy time. Geriatric rehabilitation facilities implement different types of interventions for an enriched rehabilitation environment, and some organizations do not implement an enriched rehabilitation environment (Tijsen et al., 2019). An enriched rehabilitation environment positively affects patients' activity and reduces the time spent inactive and alone (Janssen et al., 2014). Therefore an enriched rehabilitation environment can have a double effect; when a patient has fewer feelings of loneliness and has more social contacts, this could have a positive effect on the rehabilitation process, resulting in an earlier discharge. Additionally, extra physical exercise is also likely to have a positive effect on rehabilitation outcomes. Therefore, the possible earlier discharge due to these two factors positively influences the rehabilitation facility's effectiveness.

2.4.4 Composition of the multidisciplinary team

The fourth factor that could influence the effectiveness of organizations that provide geriatric rehabilitation concerns the composition of the multidisciplinary team. The team of professionals that treats geriatric patients forms a multidisciplinary team. As mentioned earlier, the rehabilitation team

consists of many different healthcare professionals. A multidisciplinary team should consist of a group of healthcare providers with different knowledge, backgrounds, and skills who depend on each other to reach common goals (Shaw, 1976). According to the paper of Van Balen et al. (2019), a multidisciplinary team should at least consist of a doctor educated in geriatric rehabilitation, a physiotherapist and a nurse, with the possible addition of an occupational therapist, a dietician, a psychologist, a speech therapist, a psychologist, and a social worker. Organizations that provide geriatric rehabilitation could define the composition of the team. Consequently, the composition of the team differs per organization. Whether a professional is included in the multidisciplinary team could influence the rehabilitation outcomes since the treatment depends on the composition of the multidisciplinary team. When there is, for example, no social worker available, it is possible that there is not enough attention for the patient's social network. A social worker usually prepares the patients' social network for the discharge of the patient. The lack of a social worker in the multidisciplinary team could result in a delayed discharge when a patient's discharge is unprepared. A delayed discharge is detrimental to the effectiveness of geriatric rehabilitation facilities.

2.4.5 Differentiation in diagnosis groups

The fifth characteristic of the treatment environment concerns the differentiation of different diagnosis groups within a geriatric rehabilitation facility. There is consensus that geriatric rehabilitation should be provided in specialized wards or units. This means that every diagnosis group (orthopaedics, COPD, stroke, etcetera) is treated in a specialized setting (Van Balen et al., 2019). The study of Stott and Quinn (2013) demonstrated the importance of a specialized setting for different diagnosis groups. Specialized units delivered better outcomes than general wards. However, not all organizations that provide geriatric rehabilitation have specialized wards for the different diagnosis groups. Whether a geriatric rehabilitation facility organizes healthcare delivery in specialized wards or not is, therefore, likely to influence the effectiveness of the facility since specialization could result in more effective healthcare.

2.4.6 Focus on psychological rehabilitation

Besides physical rehabilitation, psychological rehabilitation is also essential (Stason et al., 1997). Therefore the following characteristic of the treatment environment that could be identified is whether there is attention to the psychological health of patients. Depression is prevalent in the geriatric population. Fifteen per cent to 25 per cent of the elderly in nursing homes experience symptoms of depression (Montano, 1999). Depression could result in multiple comorbid illnesses. Depression may also delay discharge from a geriatric rehabilitation facility since depressed patients are likely less motivated to participate in therapy (Wells et al., 2003). The study of Teasell et al. (1999) shows that when patients with depression-related symptoms are treated with antidepressants, the rehabilitation outcomes are better compared to patients without treatment for these symptoms. Harris et al. (1988) showed that an improvement in physical functioning is related to the psychological health of patients in geriatric rehabilitation wards. Harris stated that early diagnosis and treatment of symptoms related to depression are essential for the rehabilitation process. In order to identify geriatric patients with depression, Diamond (1995) argued that all admitted patients should be screened for depression to facilitate early treatment. If patients are psychologically healthy, they are more likely to recover earlier, which is beneficial for the effectiveness of geriatric rehabilitation.

2.4.7 Focus on nutritional status

Patients in geriatric rehabilitation facilities frequently have significant nutritional issues (Wells et al., 2003). Therefore, the following characteristic of the treatment environment that can be identified is whether there is attention to the nutritional status of patients. There are several reasons for the inadequate intake of nutrients. First, the elderly could experience changes in food preferences and could lose their appetite feelings (Beelen et al., 2017). Protein-rich food intake may decrease, while the need for protein consumption rises as people age. This is disadvantageous for the nutritional status of geriatric patients and could result in malnutrition (Beelen et al., 2017; Asai, 2004). Raynaud and Lesourd (2000) and Asai (2004) underlined the importance of nutritional status since it can affect rehabilitation. Additionally, malnutrition is a risk factor for mortality and could lead to complications and readmissions. Signs of

malnutrition are nonspecific; apathy, fatigue, and a decline in muscle strength, therefore it is essential to recognise malnutrition. Including a dietician in the multidisciplinary rehabilitation team could promote the recognition of malnutrition and improve the nutritional status of geriatric patients. Besides the negative impact of malnutrition on the health status of geriatric patients, the rehabilitation process could also be negatively influenced directly. Geriatric patients with malnutrition are often too weakened to complete therapy sessions. Malnutrition could also lead to several infections, resulting in an interruption of therapy sessions. Thus, malnutrition could negatively affect the geriatric rehabilitation process and the effectiveness of geriatric rehabilitation.

2.4.8 Triage

A current debate in geriatric rehabilitation is about the admission and triage of patients, and this forms the last characteristic of the treatment environment that could be identified. Careful selection of patients has generally been advocated to improve the cost-effectiveness of care. When patients are not likely to suit one of the rehabilitation programs provided in the facility or are not likely to be appropriate for rehabilitation, the patient should be treated at another facility or within another type of care (Winograd, 1991; Rubenstein et al., 1991). A strong positive correlation exists between a patient's functional progress and the initial assessment or triage. Therefore this triage or admission assessment must be carefully performed (Poduri et al., 1996). Currently, the triage and admission of patients to a geriatric rehabilitation facility differ per region and organization that provides geriatric rehabilitation. When one organization rejects a patient since the patient does not fit a geriatric rehabilitation program, another organization may admit the patient to a comparable rehabilitation program. This results in patients treated in geriatric rehabilitation facilities being transferred to another type of care after some time without any functional improvement. This is detrimental to the effectiveness of the geriatric rehabilitation outcomes of a facility (Van Balen et al., 2019). This triage process can be associated with sub-optimization. Suboptimization is a reduced output level resulting from an inefficient or ineffective process or system. Within this study, the assumption is made that geriatric rehabilitation facilities treat comparable patient groups per diagnosis group. However, since some facilities that provide geriatric

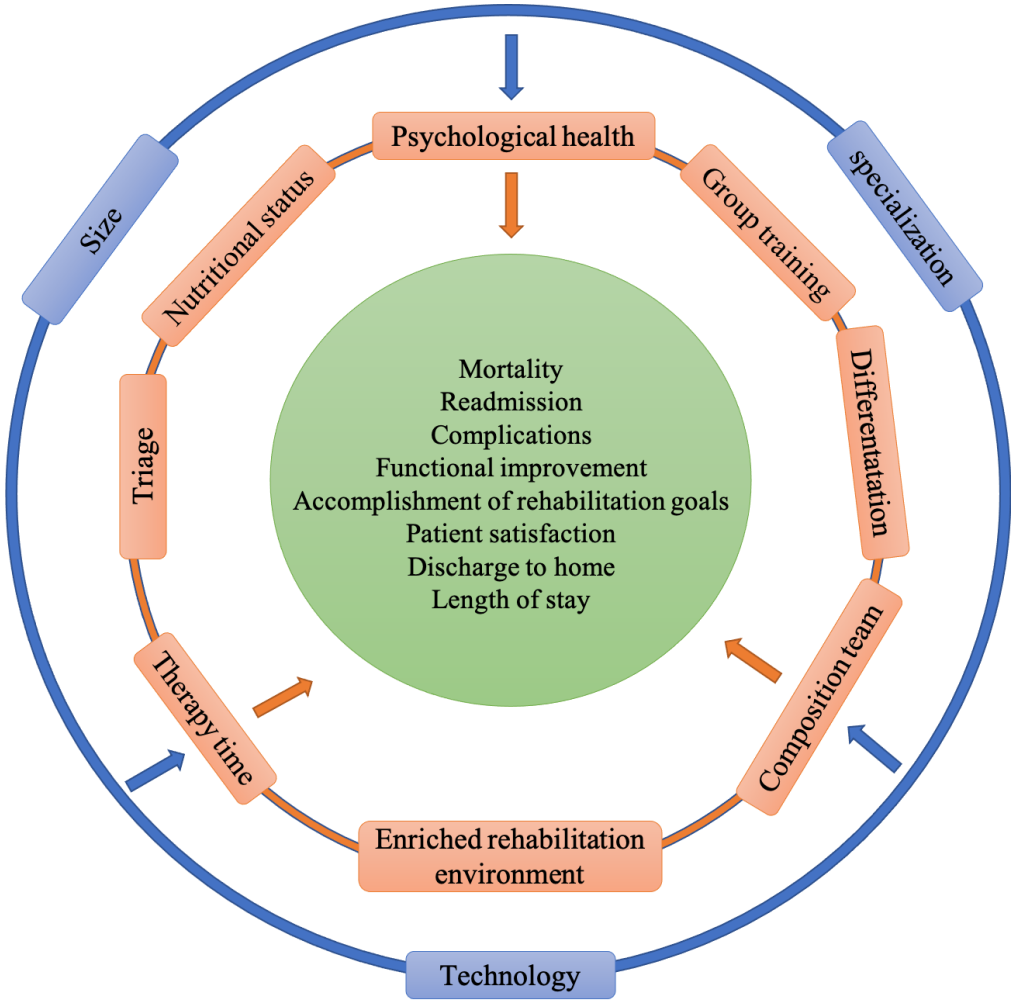
rehabilitation care admit patients that were rejected somewhere else, the effectiveness of these organizations can be influenced. The phenomenon of only admitting favourable patients likely to rehabilitate quickly is called cherry picking and is officially prohibited by law. The existence of a suboptimal situation due to the current triage process and its influence on effectiveness outcomes has to be kept in mind.

2.5 Conceptual framework

Now that different aspects of performance in healthcare and effectiveness in geriatric rehabilitation have been described, a conceptual framework can be constructed (figure 1). This conceptual framework is explorative and based on expectations. The foundation for these expectations is the literature described in the previous paragraphs. The organizational factors in the blue circle are expected to influence the characteristics of the treatment environment and, herewith indirectly, the effectiveness outcomes. The characteristics of the treatment environment are expected to influence the effectiveness outcomes of geriatric rehabilitation directly.

The conceptual framework is based on the literature explored in this chapter. However, it is essential to investigate the framework further to answer the research question adequately. First, how do the factors in the orange circle relate to the outcome measures in the green circle? Additionally, it is essential to investigate whether the outcome measures in the green circle are feasible to measure the effectiveness of geriatric rehabilitation. In the methodology chapter, it is further elaborated on how these relations and aspects will be studied.

Figure 1 Conceptual framework



3. Methodology

In this chapter, the methodology is discussed. The methodology is divided into two parts; a quantitative and a qualitative part. The study design is given in paragraph 3.1, and the quantitative part of this study is described in paragraph 3.2. Finally, the qualitative part is presented in paragraph 3.3.

3.1 Study design

The effectiveness of geriatric rehabilitation is explored in this study. An explorative quantitative and qualitative study design is applied to answer the research question: *How can the effectiveness of geriatric rehabilitation be measured, and what characteristics of the treatment environment could influence the effectiveness?*

In the literature review in chapter two, different outcome measures for the effectiveness of geriatric rehabilitation are identified from the literature. Additionally, the characteristics of the treatment environment of geriatric rehabilitation are described. These aspects were combined in a conceptual framework. The characteristics in the orange circle are expected to influence the effectiveness outcome measures in the green circle. However, further research is necessary to explore these relations, which will now be elaborated.

First, it is essential that the outcome measures in the green circle are feasible, which means that organizations providing geriatric rehabilitation can measure the intended aspect and apply the outcome measure in practice. For example, when an outcome measure aims at measuring the improvement in the Barthel score of a patient, the indicator is feasible if the Barthel score is available or can be made available (Veneberg et al., 2023). A quantitative method will be applied to assess the feasibility of the effectiveness outcomes. Using online questionnaires, different organizations that provide geriatric rehabilitation were asked to provide data on different effectiveness outcomes. The extent to which organizations can deliver the desired data will provide insight into the feasibility of the effectiveness outcomes.

Second, this study aims at identifying characteristics of the treatment environment that could influence the effectiveness of geriatric rehabilitation. The conceptual framework included these

characteristics on the orange circle. However, information from the professionals working in geriatric rehabilitation is essential to explore these characteristics further. Therefore, in the qualitative part of this study, different healthcare professionals working in geriatric rehabilitation were interviewed. During the interviews, the healthcare professionals were asked about their opinion about the characteristics of the treatment environment identified from the literature and whether they expect an influence on effectiveness outcomes. The COREQ (Consolidated Criteria for Reporting Qualitative Research) checklist was used to ensure that essential items of qualitative research were considered (Appendix 1).

3.2 Quantitative methodology

3.2.1 Study population

All 146 healthcare organizations that provide geriatric rehabilitation in the Netherlands were approached to participate in this study and were sent the questionnaire with outcome measures. A manager or elderly care physician of every organization was contacted. Contact details of the manager and elderly care physician of the organization were provided by the commissioning party of this study, ParView.

3.2.2 Data collection

The data was collected using an online questionnaire with the Microsoft Excel program. Using an online questionnaire comes with several advantages and disadvantages. The benefits of an online questionnaire are that it is easier to approach some populations. In the case of this research, there are not many managers of geriatric rehabilitation facilities. Using an online questionnaire, they can be approached easily. Another benefit is that an online questionnaire saves time for the researcher since not all respondents have to be visited individually. The researcher can also perform a preliminary analysis of the collected data. In this way, the researcher can analyze the entire dataset more easily (Llieva et al., 2002). Another advantage is that online questionnaires can save costs. Respondents must not be physically visited, and no papers must be sent through the post (Llieva et al., 2002; Watt, 1999; Witmer et al., 1999).

There are also disadvantages of online questionnaires. The response rates of internet-based research are often lower than other studies. Frequently, participants start with the questionnaire and quit after the first few questions. Some respondents quit after reading the instructions since the research is not appealing enough (Buhrmester et al., 2011; Rice et al., 2017). There are also many studies in which researchers reported that respondents started responding randomly or quit the questionnaire after 20 – 30 minutes. This limits the data collection of time-consuming questionnaires (Crump, McDonell, and Gureckis, 2013; Rice et al., 2017). Another disadvantage is that the researcher cannot verbally instruct participants and answer questions when the respondent is responding to the questionnaire. The respondent can contact the researcher through email or telephone. However, online communication is much more complicated than personal communication (Crump et al., 2013; Rice et al., 2017).

Regmi et al. (2016) state that six methodological components are critical to successful online surveys. These six components were considered during the development of the questionnaire. The first component is a user-friendly design and layout. The format of the questionnaire should be easy to navigate around and should need only minimal computer skills to complete the survey. The questionnaire was conducted with the Excel program. Excel has a clear layout and needs minimum computer skills to complete the survey. Additionally, the questions should be straightforward to read. Also, the answering instructions should be unambiguous since respondents are answering the questionnaire without the help of the researcher. When extra help from the researcher is necessary, the respondent could contact the researcher for additional explanation or help.

The second component includes the selection of participants for the survey. Within this research, it is predetermined who the respondents are. The questionnaire was sent to geriatric doctors and managers of all 146 geriatric rehabilitation facilities in the Netherlands. It was essential to obtain a high response rate. To achieve a high response rate, the Association for geriatric rehabilitation Studio GRZ and the GRZ E-cademy contacted the affiliated organizations to underline the importance of participating in this research. As an incentive to participate in this research, the respondents received a summary of the research outcomes. The questionnaire was available for four weeks.

The third component is avoiding multiple responses from the same respondent. Multiple responses can be identified since respondents send the Excel file back by email. Additionally, the

respondents should be able to complete the questionnaire in multiple sessions. This option is possible within Excel; respondents can save the file on their computer while answering.

The fourth component that needs to be considered is data management.

The data will concern the organizational characteristics and effectiveness measures (table one) over 2020. Since the effectiveness is assessed per diagnosis group, the Excel file collected the data separately for every diagnosis group that the organization provided. Data were analyzed using SPSS and were saved on a secured server.

Ethical issues form the fifth component since online administration of surveys raises unique ethical questions. First, it is vital to provide all information regarding the study, participants' rights, and the researchers' contact details are provided. Privacy and confidentiality are also essential; therefore, all data is anonymised. The last aspect regarding ethical issues is the right to withdraw or omit items. Respondents had the possibility in Excel to omit specific data. The BMS Ethics Committee of the University of Twente approved this research.

The last component is pilot testing of the survey. A pilot test can ensure that the questions are in the correct order, that the questions are adequate, and that the content is comprehensive. Whenever organizations cannot provide specific information, a pilot test will verify this before sending the questionnaire. A pilot test was performed four weeks before sending out the questionnaire. Doing so solved errors or vagueness before sending out the irrevocable questionnaire.

3.2.3 Variables

Data collected using the online questionnaire concerns outcome measures for the effectiveness of geriatric rehabilitation. These outcome measures were identified from the literature and included in the green circle of the conceptual framework (figure 1). Table one presents these characteristics, the necessary data (column 2) will be processed in the questionnaire.

Table 1 Required data: effectiveness outcomes

Effectiveness outcome	**Necessary data**	**Source / prior study**

Readmission hospital	% patients that are readmitted to the hospital during admission at geriatric rehabilitation	Bachmann et al. (2010); Benbassat & Taragin (2000); Leppin et al. (2014)
Complications	% patients with complications during admission	Prvu Bettger & Stineman (2007)
Mortality	% patients that passed away during admission	Rubenstein et al. (1991); Bachmann et al. (2010)
Functional improvement	-Average Barthel score at admission (per diagnosis group) -Average Barthel score at discharge (per diagnosis group) Or -Average USER at admission (per diagnosis group) - Average USER at discharge (per diagnosis group)	Rubenstein et al. (1991); Bachmann et al. (2010); Bouwstra et al. (2019); Zeeli & Isaacs (1988); Stolee et al. (1999); Johnston et al. (2003); Kauh et al. (2005); Boult et al. (1998); Wade (2003)
Discharge to home	% of patients that are discharged to the home situation	Demers et al. (2004); Kauh et al. (2005)
Accomplishment of rehabilitation goals	% of patients that accomplished rehabilitation goals	Zeeli and Isaacs (1988); Stolee et al. (1999); Janssen et al. (2019)
Patient satisfaction	Average NPS score	Janssen et al. (2019)
Length of stay	Average length of stay in days (per diagnosis group)	Johnston et al. (2003); Kauh et al. (2005); Boult et al. (1998); Holstege et al. (2017)
Treatment intensity	Average treatment intensity per week (per diagnosis group)	Huijben-Schoenmakers et al. (2014); Huijben-Schoenmakers et al. (2009); Vermeulen et al. (2013); De Weerdt et al. (2000); Skarin et al. (2013); Janssen et al. (2014); West & Bernhardt (2012); Talkowski et al. (2009); Lenze et al. (2012)

3.2.4 Method of data analysis

The data will be analyzed using the statistical package SPSS. The data will be explored using descriptive statistics. The analysis will focus on the type of data the organizations delivered with the questionnaire. There is the possibility that organizations register the outcome measures differently; the analysis identified these differences using the minimum, maximum, mean, and standard deviation. When an outcome measure has a wide variety of numbers with many outliers, likely, organizations register differently. A descriptive statistic overview can provide insight into the number of organizations that were able to fill in the different individual variables. When most organizations cannot provide data for a variable, or the data is registered differently, the variable is not feasible as an outcome measure for geriatric rehabilitation. When enough data for a variable is delivered and equally registered, the variable is considered a feasible outcome measure for geriatric rehabilitation. Additionally, the opinion of three experts working in geriatric rehabilitation will be consulted to confirm the feasibility of the outcome measures. These three experts work at a management level in three organizations that provide geriatric rehabilitation.

3.3 Qualitative methodology

3.3.1 Study population

Managers, therapists and nurses involved in the care process of patients in geriatric rehabilitation facilities were interviewed to identify different perspectives and opinions about the different characteristics of the treatment environment and whether the characteristics could influence the effectiveness of geriatric rehabilitation. The population of managers and therapists was selected with purposive sampling at organizations participating in the GRZ E-cademy. The GRZ E-cademy is a network with twenty organizations that deliver geriatric rehabilitation. The network shares knowledge and aims to improve the performance and quality of geriatric rehabilitation. Interview respondents were selected by contacting the contact person of the GRZ-Ecademy of the concerned organization. Whenever the contact person agreed to participate in this research, contact details of a therapist, manager or nurse suitable for participating in an interview about the quality of care were requested. A therapist,

manager, or nurse was regarded as suitable if the contact person expected them to have an affinity with the effectiveness of care. Additionally, the therapists, managers, and nurses were suitable if they were willing to participate in an interview and were sufficiently verbally adequate. The therapists, managers, and nurses were contacted through email or telephone. After the first four interviews with different healthcare professionals, the transcripts were analyzed before conducting other interviews. Interviews were conducted until there was a code saturation (Hennink et al., 2017).

3.3.2 Data collection

The interviews were conducted via video calls using the application Skype, Teams, or Zoom, dependent on the preference of the interviewee. Before the interview started, the respondent was informed about the research and the aim of the interview. The respondent was also asked if there were any objections to recording the interview for analysis. If the respondent agreed, the interview started. An interview scheme (Appendix 2) was used to ensure that predetermined topics were discussed. The interview scheme is based on the characteristics of the treatment environment (table 2). The interviews started with a conversation related to the personal characteristics of the respondent in order to build trust and make the respondents feel comfortable (Gill et al., 2008). The first question was a general question about the perception of the respondent about the effectiveness of geriatric rehabilitation. After that, the different characteristics of the treatment environment were discussed.

3.3.3 Variables

The characteristics of the treatment environment identified from the literature in chapter two were used in the qualitative part of this study. The characteristics can be found in column one of Table 2. These characteristics are included in the orange circle of the conceptual framework (figure 1) and are expected to influence the outcome measures in the green circle of the framework. To explore this relationship, the respondents' opinions about the possible effect of the characteristic of the treatment environment on the effectiveness of geriatric rehabilitation were discussed during the interviews.

Table 2 Required data: Characteristics of treatment environment

Characteristics of treatment environment	**Source / prior study**
Composition of the multidisciplinary team	Van Balen et al. (2019) and Season et al. (1997)
Specialized wards / units	Van Balen et al. (2019)
Triage process	Winograd (1991); Rubenstein et al. (1991); Poduri et al. (1996); Schols (2020)
Enriched rehabilitation environment	Tijssen et al. (2019); Janssen et al. (2014)
Attention to psychological health of patients	Stason et al. (1997); Montano (1999); Wells et al. (2003); Teasell et al. (1999); Harris et al. (1988); Diamond (1995)
Individual therapy time	Huijben-Schoenmakers et al. (2014); Huijben-Schoenmakers et al. (2009); Vermeulen et al. (2013); De Weerdt et al. (2000); Skarin et al. (2013); Janssen et al. (2014); West and Bernhardt (2012); Talkowski et al. (2009); Lenze et al. (2012)
Group training time	English et al. (2007); Savikko et al. (2010); Nilsson and Nygård (2003); English et al. (2017); Hammond et al. (2015); English et al. (2014)
Attention for (mal)nutrition	Wells et al. (2003); Beelen et al. (2017); Asai (2004); Raynaud and Lesourd (2000)

3.3.4 Method of data analysis

The data analysis started with transcribing the audio records of the interviews by hand. The interviews were transcribed entirely. Only fillers and repeated words were removed since they impeded the transcripts' readability and were irrelevant to interpreting the data (Stuckey, 2014). To ensure anonymity, the names of organizations or persons were removed from the transcripts and replaced with the letter X. When the transcripts were completed, they were printed and analyzed by the researcher using colour markers. The first step was open coding; all helpful information in the transcripts received a comprehensive label indicating the content of the information. All information related to the effectiveness of geriatric rehabilitation was regarded as beneficial. The second step was axial coding; all labels were grouped into categories. The last step was selective coding. During this step, the categories from the axial coding phase were connected around one core category. These core categories

were based on the characteristics of the treatment environment, table 2. The expectations and experiences of the respondents concerning the characteristics of the treatment environment and the effect of these characteristics on the effectiveness of geriatric rehabilitation care were mapped. It is also possible that additional characteristics can be identified from the data. Per characteristic of the treatment environment, the possible influence on the effectiveness outcomes will be described.

4. Results

4.1 quantitative results

In this paragraph, the results of the questionnaires will be presented. The questionnaires aimed to get an insight into the feasibility of the outcome measures for the effectiveness of geriatric rehabilitation identified from the literature.

4.1.1 Response rate

All 146 organizations in the Netherlands that provide geriatric rehabilitation were approached to participate in this study. However, due to the Covid-19 pandemic and herewith the pressure on healthcare, a limited number of organizations were able to participate. As a result, 17 organizations responded to the questionnaire; the response rate is 12%.

4.1.2 Descriptive statistics

Table 3 presents the results of the questionnaire. Per effectiveness outcome measure, descriptive statistics are included. There is no standard to assess the feasibility of the outcome measures. Additionally, the burden to assess a measure as feasible differs per outcome measure. E.g. for outcome measures concerning the diagnosis group amputations, it is more likely that the standard deviation, minimum and maximum shows more variation. The concept of intersubjectivity is applied to ensure that the judgement of more professionals is included in considering whether an outcome measure is feasible. Three professionals working in geriatric rehabilitation were consulted to assess the feasibility of the outcome measures based on descriptive statistics. The results will be discussed in the following subparagraphs.

Table 3 Descriptive statistics outcome measures

	Readmission	Mortality	Barthel admission	Barthel discharge	NPS
Valid	14	16	17	17	13
Missing	3	1	0	0	4
Mean	5.51	5.07	11.14	15.72	38.22
Median	4	4.5	11.20	16.0	42
St. dev.	3.18	2.88	1.26	0.93	17.06
Min.	2	2.02	8.96	13.9	7.8
Max.	12.1	12	14.4	17.3	63
	LOS CVA	**LOS trauma**	**LOS orthopeadic**	**LOS amputation**	**LOS miscellaneous**
Valid	17	17	17	14	17
Missing	0	0	0	3	0
Mean	35.47	33.80	24.76	46.14	31.66
Median	36.1	33.33	23.9	48	32.2
St. dev.	9.28	7.71	6.10	15.23	7.41
Min.	19.5	21	13	20	19.5
Max.	49.5	46.6	37	70.3	43.3
	TI CVA	**TI trauma**	**TI orthopeadic**	**TI amputation**	**TI miscellaneous**
Valid	14	14	14	13	14
Missing	3	3	3	4	3
Mean	11.74	8.44	7.94	11.82	10.17
Median	8.47	5.67	5.68	6.37	6.89
St. dev.	10.28	6.98	5.64	14.05	8.80
Min.	3.99	4.49	4.2	3.94	4.70
Max.	41.6	26	23	49.3	36.80
	Discharge home CVA	**Discharge home trauma**	**Discharge home orthopeadic**	**Discharge home amputation**	**Discharge home miscellaneous**
Valid	17	17	17	15	17
Missing	0	0	0	2	0
Mean	73.01	77.92	91.31	65.67	77.27
Median	71	81.48	95	70	76
St. dev.	10.24	8.34	9.58	24.09	6.74
Min.	56	60	70	0	69
Max.	100	91	100	100	92
	Beds CVA	**Beds trauma**	**Beds orthopeadic**	**Beds amputation**	**Beds miscellaneous**
Valid	10	7	8	7	9
Missing	7	10	9	10	8
Mean	17.7	30.86	15.75	7.71	40.22
Median	17.5	20	15.5	5.00	30

St. dev.	9.80	30.99	4.71	4.92	38.10
Min.	1	4	10	3	10
Max.	34	84	23	15	140

	Beds unidentified	**Complications**
Valid	9	0
Missing	8	17
Mean	57.67	-
Median	48	-
St. dev.	40.05	-
Min.	2	-
Max.	139	-

4.1.3 Readmission

The first variable that will be discussed is readmission. This variable refers to the percentage of patients readmitted to the hospital during treatment at the rehabilitation facility. Three organizations do not register the readmission rate, and fourteen organizations do register. Within the organization with the lowest readmission rate, 2% of the patients are readmitted to the hospital. This is 12.1% within the organization with the highest readmission rate. The mean is 5.51%, with a standard deviation of 3.18%. There are no outliers, indicating an equal registration of this readmission rate. Considering this, together with many organizations that register the readmission rate, the readmission rate is feasible as an outcome indicator for geriatric rehabilitation. There was consensus among the experts concerning the feasibility of the readmission rate as outcome measure.

4.1.4 Mortality

Sixteen organizations registered the mortality rate; one did not register this or could not deliver this data. The minimum mortality rate is 2%, and the maximum is 12%. The mean is 5.07%, with a standard deviation of 2.88%. Except for one organization, all organizations register the mortality rate with no outliers, which indicates that the mortality rate is feasible as an outcome indicator for geriatric rehabilitation. There was consensus among the experts concerning the feasibility of the mortality rate as outcome measure.

4.1.5 Functional improvement

Within geriatric rehabilitation, measuring functional improvement using the Barthel score is common. A high score indicates more functional and physical abilities of the patient. In order to measure the improvement of the patients during rehabilitation, the Barthel is often measured at admission and discharge. All organizations that participated in the quantitative part of this study registered the Barthel score at admission and discharge. The minimum and maximin scores of the Barthel at admission and discharge differ by a few points. However, this can be explained due to the difference in diagnosis groups and expertise of the rehabilitation facility. The facilities with more expertise will likely get the most vulnerable patients with lower Barthel scores. The mean of the Barthel at admission is 11.14, with a standard deviation of 1.26. The Barthel at admission is 15.72, with a standard deviation of 0.93. Therefore, the Barthel at admission and discharge can be regarded as a feasible outcome indicator for geriatric rehabilitation. There was consensus among the experts concerning the feasibility of the Barthel score as outcome measure.

4.1.6 Net Promotor Score

The NPS (Net Promotor Score) indicates how satisfied and loyal patients are. Thirteen organizations registered the NPS, and four organizations did not. The minimum NPS registered score is 7.8, and the maximin registered score is 63, indicating a substantial difference. The mean is 38.22, with a standard deviation of 17.06. An NPS score can range from -100 (all patients are unsatisfied) to 100 (all patients are very satisfied). Considering this large scale, the minimum of 7.8 and the maximum of 63 will likely be correct. However, there is an American and European way in which the NPS score is calculated. The American method results in lower NPS scores. Considering the minimum and maximum, it may be the case that the included organizations calculate the NPS score differently. Nevertheless, the NPS score is feasible as an outcome indicator if the same calculation method is used; otherwise, the outcomes cannot be benchmarked between organizations. There was consensus among the experts concerning the feasibility of the Net Promotor Score as outcome measure.

4.1.7 Length of stay

All organizations register the length of stay for four diagnosis groups (CVA, trauma, orthopaedic, and miscellaneous). Three organizations do not register the length of stay for the diagnosis group amputations, most probably because these organizations do not treat patients with amputations since this is a complex diagnosis group. The length of stay per diagnosis group differs per organization, with the minima ranging from 14 to 17 and the maxima ranging from 37 to 70.3. The high maximum number can be explained by complex patients with an extended stay in the rehabilitation facility. Considering these aspects, the length of stay per diagnosis group is feasible as an outcome measure for geriatric rehabilitation. There was consensus among the experts concerning the feasibility of the length of stay as outcome measure.

4.1.8 Treatment intensity

The treatment intensity is the amount of time spent on physical therapy by a physiotherapist or occupational therapist. When the geriatric patient is recovering from a cerebrovascular accident, therapy time can also include therapy from a speech therapist. First, this outcome measure was not included in the questionnaire. However, participants had the opportunity to provide data on additional outcome measures they consider essential to measure the effectiveness of geriatric rehabilitation. Fourteen organizations filled in the treatment intensity, and three did not mention this outcome. The diagnosis group amputations deviate slightly from this; four organizations did not mention this outcome. The minima are equal across the different diagnosis groups, ranging from 3.94 to 4.7. The maximum treatment intensity differs per diagnosis group, ranging from 23 to 49.3. However, the means are similar across the different diagnosis groups. Outliers can be explained by patients who require a high intensity of treatment. Considering these aspects, treatment intensity is essential as an outcome measure for geriatric rehabilitation and feasible as an outcome indicator. There was consensus among the experts concerning the feasibility of the treatment intensity as outcome measure.

4.1.9 Discharge home

All organizations register the percentage of patients discharged home after rehabilitation, except for the diagnosis group amputations, where two organizations are not registering this outcome. Considering the minimum and maximum, the diagnosis group amputations stand out, with a minimum of zero and a maximum of 100. This significant difference can be explained by the complexity of this diagnosis group and the low number of patients treated in this diagnosis group. For the other diagnosis groups, the minimum ranges from 56 to 70 and the maximum from 91 to 100. Considering the equal distribution, the discharge home is feasible as an outcome indicator for geriatric rehabilitation. There was consensus among the experts concerning the feasibility of the discharge rate as outcome measure.

4.1.10 Number of beds

The number of beds provides insight into the organization's size and whether the organization specializes in a diagnosis group by having a specific number of beds for a diagnosis group. The results show that this varies across the organizations. Seven to ten organizations have specific beds for the different diagnosis groups, and nine organizations have (also) unidentified beds for patients. This is an outcome indicator that every organization can fill in and provides background information about the organization's size. This outcome indicator is therefore considered feasible for geriatric rehabilitation. There was consensus among the experts concerning the feasibility of the number of beds as outcome measure.

4.1.11 Complications

None of the participating organizations registers this outcome measure. Therefore this outcome measure is considered not feasible for geriatric rehabilitation.

All outcome measures included in the conceptual framework (figure 1) are now assessed on feasibility, which answers the first part of the research question. The second part of the research question focuses on identifying characteristics of the treatment environment that could influence the effectiveness. The

conceptual framework includes eight characteristics of the treatment environment in the orange circle. The following paragraph will explore the relationship between these characteristics of the treatment environment and the effectiveness of geriatric rehabilitation.

4.2 Qualitative results

For the qualitative part of this research, one manager, one geriatric doctor, and two nurses from different organizations that provide geriatric rehabilitation were interviewed. During these interviews, the interviewees were asked about perspectives and opinions about the different characteristics of the treatment environment and whether the characteristics could influence the effectiveness of geriatric rehabilitation. The used interview schemes can be found in Appendix 2.

The audio records of the interviews were transcribed. The first open coding phase of the transcripts resulted in 223 different labels that contained information concerning the quality of geriatric rehabilitation care. Forty-six categories were created based on the labels during the second coding phase. During the last coding phase, 46 categories were attached to 14 core categories. After the four interviews, the data was analysed. A code saturation occurred and therefore no more interviews were needed. Per characteristic, the results will be presented in de following subparagraphs.

4.2.1 Composition of the multidisciplinary team

All interviewees mentioned that the composition of the multidisciplinary team influences the effectiveness of geriatric rehabilitation. Different professionals that can be included in the rehabilitation team were mentioned during the interviews; an occupational therapist, physiotherapist, psychologist, social worker, dietician, speech therapist, nurses, geriatric doctor, and a geriatric doctor specialized in rehabilitation. Including more professionals in the multidisciplinary team tends to positively affect the effectiveness of geriatric rehabilitation, according to the interviewees. Especially when the professionals are involved early in the rehabilitation process. During rehabilitation, a multidisciplinary consultation is held regularly, in which patients are discussed. There are interesting indications that including all different professionals working in the rehabilitation team during these consultations has added value to the effectiveness of geriatric rehabilitation. During the interviews, the employee well-being was also

mentioned. This employee well-being does activities with patients, e.g. painting and crafting. This positively affects patient satisfaction (an effectiveness outcome), but the management considered it too expensive to include in the rehabilitation team.

4.2.2 Specialized wards/units

According to all interviewees, organizing the geriatric rehabilitation per diagnosis group positively affects the effectiveness of geriatric rehabilitation. By organizing the rehabilitation per diagnosis group, professionals have more profound knowledge about the patients' specific conditions and the interventions the patients need. Additionally, specific care pathways can be deployed when the rehabilitation is organized per diagnosis group. Care pathways provide clarity and uniformity for both patients and professionals. Two interviewees mentioned that the length of stay (an effectiveness outcome) could be shorter if rehabilitation is organized per diagnosis group. These are interesting indications suggesting that specializing the geriatric rehabilitation per diagnosis group is conducive to the effectiveness of care.

4.2.3 Triage process

All interviewees mentioned that the triage process affects the effectiveness of geriatric rehabilitation. There is no uniform way in which triage is performed. The interviewees encounter problems with triage regularly. Often the triage is incorrect and incomplete, and patients are discharged too early from the hospital. Additionally, regular requests are made for patients without rehabilitation potential. Reasons for this problem are the shortage of available hospital beds and hospitals being pressured to minimise patients' length of stay. Additionally, knowledge in the hospital about the follow-up location of patients is limited, and the triage is not properly thought through in the hospital, according to the interviewees. There are interesting indications that there is much to be gained in this triage process and that this process must be redesigned within geriatric rehabilitation.

4.2.4 Enriched rehabilitation environment

An enriched rehabilitation environment influences the effectiveness of geriatric rehabilitation. An enriched rehabilitation environment motivates patients to exercise outside the regular therapy time. One interviewee mentioned that all patients should be able to rehabilitate in a challenging rehabilitation climate. Another interviewee mentioned that rehabilitation is more fun with a pleasant environment.

4.2.5 Attention to psychological health of patients

According to the interviewees, attention to patients' psychological health influences the effectiveness of geriatric rehabilitation. Patients can suffer from psychological or addiction problems. Therefore, from the start of the rehabilitation process, there should be attention to the psychological health of patients. If psychological/addiction problems can be handled earlier, this would improve the effectiveness of geriatric rehabilitation. Unfortunately, now psychological/addiction problems often result in a delay in the rehabilitation process. One interviewee mentioned that, at her organization, all nurses in geriatric rehabilitation are educated in psychology. Because of this, nurses recognize symptoms better, and patients can be helped better. However, according to this interviewee, a psychologist alone cannot help all patients, and educated nurses are also required.

4.2.6 Individual therapy time

The interviewees mentioned that the influence of therapy time on the effectiveness of geriatric rehabilitation differs per patient. There is a specific turning point per patient in the amount of therapy time they can receive. In the rehabilitation facility, patients are less resilient than in the home situation. Thus providing more therapy time does not automatically result in a faster recovery of patients, hence the therapy time is not a suitable characteristic of treatment environment to influence the effectiveness.

4.2.7 Group training time

Three interviewees agreed that group training could influence the effectiveness of geriatric rehabilitation. One interviewee had no experience concerning this specific subject. Group training time

provides more exercise moments in which patients can practice. Also, patients motivate each other when exercising together. Additionally, if there is no therapy or activity for patients, patients tend to go to bed.

4.2.8 Attention for (mal)nutrition

According to all interviewees, attention to malnutrition influences the effectiveness of geriatric rehabilitation. Nutrition is essential to recovery; many extra nutrients are required for rehabilitation. The interviewees mentioned that a dietician should be involved from the beginning of the rehabilitation. By doing so, problems with (mal)nutrition are identified earlier. One interviewee mentioned that a dietician should be involved in the kitchen where the meals for patients are prepared.

4.3 Overview results

Table 4 provides an oversight of the results. The table includes the different characteristics of the treatment environment and whether they could influence the effectiveness of geriatric rehabilitation. In addition, the effectiveness outcome measures and whether they are feasible for geriatric rehabilitation are included. Paragraph 4.2 resulted in seven characteristics of the treatment environment that can influence the effectiveness of geriatric rehabilitation. This effectiveness can be measured using the eight outcome measures that were considered feasible in paragraph 4.1. In Chapter 5 Discussion, the results will be reflected on the conceptual framework established in the 2 Literature review.

Table 4 Overview results

#	**Characteristic of treatment environment**	**Influence on effectiveness**
1	Composition of the multidisciplinary team	YES
2	Specialized units/wards	YES
3	Triage	YES
4	Enriched rehabilitation environment	YES
5	Attention to psychological health	YES
6	Individual therapy time	NO

7	Group training time	YES
8	Attention for malnutrition	YES
#	**Effectiveness outcome measure**	**Feasible**
1	Readmission	YES
2	Mortality	YES
3	Complications	NO
4	Functional improvement (Barthel)	YES
5	Net Promotor Score	YES
6	Length of stay	YES
7	Discharge home	YES
8	Number of beds	YES
9	Treatment intensity	YES

5. Discussion and conclusion

5.1 Statement of principal findings

This study aimed to answer the following research question: *How can the effectiveness of geriatric rehabilitation be measured, and what characteristics of the treatment environment could influence the effectiveness?*

To answer the first part of this research question, nine effectiveness outcome measures for geriatric rehabilitation were identified from the literature. Eight of these outcome measures were considered feasible for geriatric rehabilitation in the quantitative research. The outcome measure complications is not feasible since none of the participating organizations registers this outcome measure. In the quantitative part of this study, participants could provide data on additional outcome measures that were not included in the questionnaire. It appeared that 14 organizations (82%) registered the treatment intensity and considered this as an effectiveness outcome measure for geriatric rehabilitation. In the literature study, the treatment intensity was considered a characteristic of the treatment environment: therapy time. Regarding the fact that 14 organizations register this as an effectiveness outcome measure for geriatric rehabilitation, this aspect is regarded as such in the results section. Reporting nine feasible outcome measures in this study, the first part of the research question *'How can the effectiveness of geriatric rehabilitation be measured'* can be adequately answered.

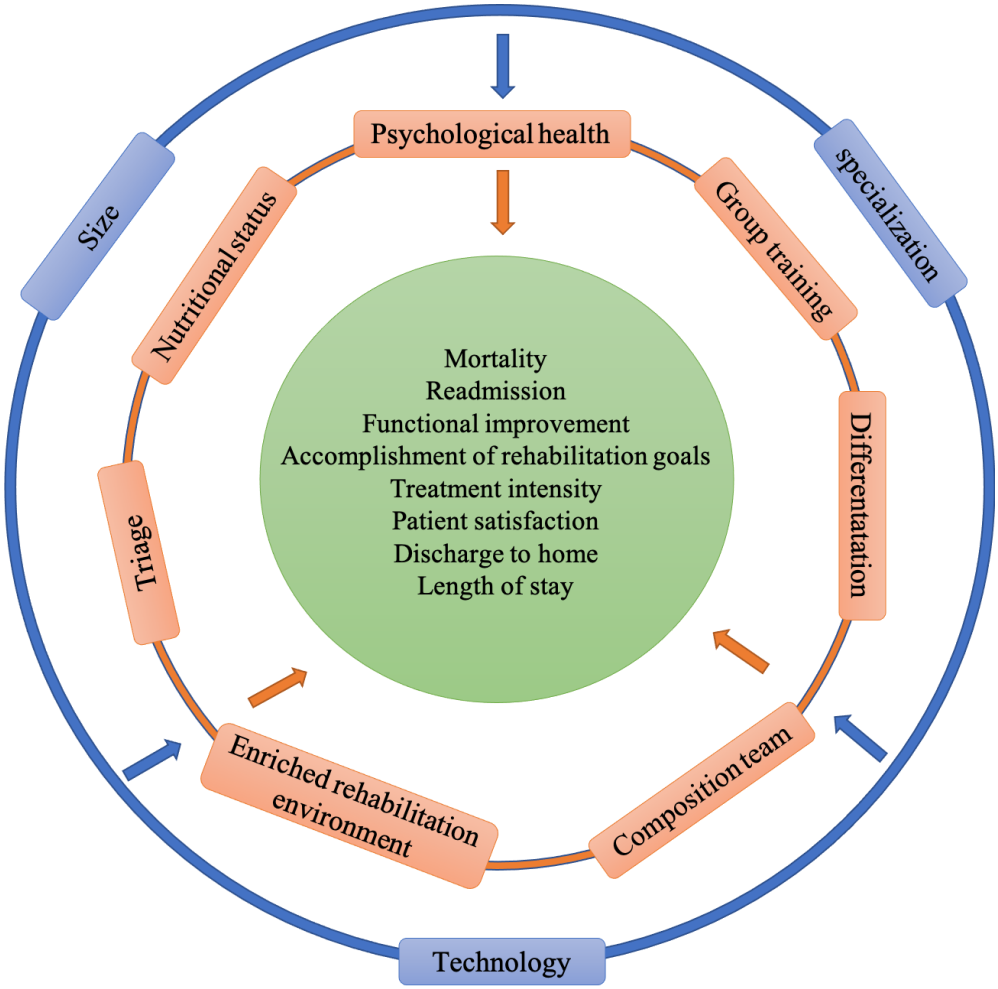
To answer the second part of the research question, characteristics of the treatment environment were identified from the literature. The literature review identified eight characteristics of the treatment environment. In the qualitative part of this study, a manager, geriatric doctor, and nurses were asked about the possible influence of the characteristics of the treatment environment on the effectiveness of geriatric rehabilitation. The qualitative results indicated that seven of these characteristics could influence the effectiveness of geriatric

rehabilitation. The characteristic therapy time is expected not to influence the effectiveness since patients have a burden concerning the maximin treatment intensity. Therefore, more treatment does not automatically result in a higher effectiveness of care. The respondents were asked if they missed any characteristics of the treatment environment. However, no additional characteristics were mentioned. Reporting seven characteristics of the treatment environment that could influence the effectiveness of geriatric rehabilitation, the second part of the research question '*What characteristics of the treatment environment could influence the effectiveness?'* can be adequately answered.

The results of the qualitative research describe how characteristics of the treatment environment can be designed within a geriatric rehabilitation facility to optimize its effectiveness. However, the characteristic Triage stood out since there are interesting indications that there is much to gain within this process. The process is highly inefficient, and participants had no clear vision of an effective way to design this process. The triage process is a subject often discussed within the field of geriatric rehabilitation. There are many different interests at play around triage. Therefore, it is advisable to do more research on this characteristic.

In the literature review, a conceptual framework was established (figure 1). The results show that the conceptual framework has to be adapted; the characteristic of the treatment environment therapy time should be included in the effectiveness outcomes as treatment intensity. The qualitative study results indicate that this characteristic does not influence the effectiveness. However, the quantitative research results show that many organizations register this aspect as an outcome measure. Additionally, the outcome measure complications should be removed from the framework; organizations do not register this outcome measure. The revised conceptual framework can be found in Figure 2.

Figure 2 Revised Conceptual framework



5.2 Strengths and limitations

The feasibility of the outcome measures was considered within this study. Feasibility is relevant since providers of geriatric rehabilitation should be able to provide insight into the desired outcome measures. It could be possible that many organizations did not register an outcome measure that was identified from the literature or that organizations register differently. Therefore including the feasibility aspect is a strength of this study. For the qualitative part of this study, the COREQ checklist was considered. Using the COREQ checklist ensured that essential aspects of qualitative research were considered, which is also a strength of this study.

The response rate of the quantitative part was 12%. Many doctors and managers responded to the invitation mail that they had no time to answer the questionnaire since they were too busy with the COVID-19 pandemic. Every two weeks, a reminder was sent to the managers and doctors that have yet to respond to the questionnaire. After eight weeks, the data collection was stopped. The average response rate from organizations in studies with questionnaires is 36% (Baruch & Holtom, 2008). Therefore, the response rate of 12% is insufficient and is considered a limitation of this study. Representativity can be an issue, given the response rate. It is advisable to do follow-up research later to obtain a higher response rate.

An important limitation to consider is that this study is explorative. The results provide an indication of the effects of characteristics of the treatment environment on the effectiveness of geriatric rehabilitation. Also, the outcome measures are explorative and not a golden standard. The limited nature of this study should be taken into account.

5.3 Interpretation within the context of the wider literature

Compared to the 23 articles from the literature search, the outcome measures in this study are specifically formulated and feasible for geriatric rehabilitation. Various databases have been consulted, but no other effectiveness indicator sets for geriatric rehabilitation were found in the literature. However, in 2013, a workgroup of elderly care physicians and a patient organization formulated a set of seven performance indicators for geriatric rehabilitation (Verenso, 2010). Comparing the Verenso performance indicator set with the outcome measures developed in this study, three indicators are not included in the set with outcome measures in this study; 1) self-management of care, 2) staff expertise, and 3) performance indicator patient experiences with operationalization quality of life. An explanation for the absence of the indicators of self-management of care and expertise of the staff is that these two indicators are more related to the quality of care than effectiveness. These two indicators are included in the indicator set to measure the quality of geriatric rehabilitation, which focusses on the best way to organize geriatric rehabilitation from a quality point of view, regardless of the aspect effectiveness (Veneberg et al., 2023). A possible explanation for the absence of a quality-of-life indicator is that the

quality of life may be less important for short-term rehabilitation and is more suitable for ambulatory and chronic care.

5.4 Implications for practice, policy, and research

Organizations that provide geriatric rehabilitation can use these outcome measures to monitor, benchmark, and improve the effectiveness of care. Affiliates in the Geriatric Rehabilitation E-cademy expressed the willingness to implement this set of outcome measures in their organizations. Additionally, the qualitative results provide valuable information and interesting indications about aspects that organizations could adapt in their care process to optimize the effectiveness of care.

5.5 Conclusions and recommendations

This study contributes to the effectiveness of geriatric rehabilitation by providing a first set of effectiveness outcomes. Further research can focus on whether this set of outcome measures is valid and reliable. In order to assess this set of outcome measures on applicability, reliability and validity, data is required. Therefore, the set of outcome measures developed in this study has to be used in practice to collect data. When using the outcome measures in practice, the explorative nature of this study should be considered.

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Appendix 1 COREQ checklist

COREQ criteria	**Description**
Interviewer	Bram Veneberg
Credentials	MSc
Occupation	Specialist Horizontaal Toezicht and student.
Gender	Male
Experience and training	BSc + MSc Health Sciences, various courses in interview techniques, at the time that the interviews were conducted
Relationship established	There was no relationship established prior to study commencement
Participant knowledge of the interviewer	The participants knew that the interviewer was conducting this research for his master thesis about geriatric rehabilitation. Participants also knew that the interviewer had a MSc in Health Sciences and was studying at the University of Twente.
Interviewer characteristics	Reasons and interests in the research topics were reported
Methodological orientation and Theory	Literature review/content analysis
Sampling	Purposive
Method of approach	Email
Sample size	4
Non-participation	None
Setting of data collection	Remote using e.g. MS teams, Skype
Presence of non-participants	There were no non-participants present
Description of sample	Doctors, nurses, managers
Interview guide	An pilot tested interview guide was used (Appendix 1)
Repeat interviews	No repeat interviews were carried out

Audio/visual recording	Audio recording was used to collect the data
Field notes	Field notes were made during the interviews
Duration	Approximate 60 minutes
Data saturation	Yes, code saturation
Transcripts returned	Transcripts were not returned to participants
Number of data coders	Two
Description of the coding tree	A short description of the coding tree is provided
Derivation of themes	Themes were identified in advance and derived from the data
Software	Microsoft Office Word
Participant checking	Participants had not the opportunity to provide feedback on the results
Quotations presented	Quotations were not presented in this article
Data and findings consistent	There is consistency between the data presented and the findings
Clarity of major themes	Major themes are clearly presented in the findings
Clarity of minor themes	Minor themes were not included in this study and therefore not discussed since they seem less relevant according to the aim of this study

Appendix 2 Interview scheme

Interviewschema onderzoek effectiviteit van de geriatrische revalidatiezorg

Allereerst hartelijk bedankt dat u ik u mag interviewen en dat u bereid bent om mee te werken aan dit onderzoek.
Het doel van dit interview is om inzicht te krijgen in de factoren die invloed kunnen hebben op de effectiviteit van de GRZ. Middels een literatuuronderzoek zijn verschillende factoren die invloed kunnen hebben op de effectiviteit van de GRZ in kaart gebracht. Uw mening en verwachtingen over de invloed van deze factoren zullen tijdens dit interview worden besproken.

Algemene vragen

1. Waar denkt u aan bij ‘effectiviteit van de GRZ’?
2. Ziet u de toegevoegde waarde van het registreren van en sturen op effectiviteitsuitkomsten?
3. Hoe denkt u dat de effectiviteit van de GRZ kan worden verbetert?

Kunnen de volgende factoren invloed hebben op de effectiviteit van de GRZ? Indien ja: hoe groot verwacht u dat deze invloed is?

1. Samenstelling van het multidisciplinaire team
2. Gespecialiseerde afdelingen per diagnosegroep
3. Triage proces
4. Verrijkt revalidatieklimaat
5. Aandacht voor de psychologische gezondheid van revalidanten
6. Therapietijd
7. Groepstraining
8. Aandacht voor (onder)voeding

Hebt u nog iets gemist in dit interview waarvan u denkt dat het van belang is om te delen in het kader van dit onderzoek?