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INTEGRATIVE REVIEW: INTERVENTIONS THAT REDUCE HOSPITAL ADMISSION TIME

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Abstract: Integrative Review: interventions that Reduce Length of Stay in Hospitals. **Introduction**: In the area of management, studies that deal with administrative and care interventions that reduce the length of stay in a hospital environment are extremely important. Prolonged hospital stays and unsafe hospital discharges compromise the quality of care. **Goal**: To conduct an integrative review of interventions that reduce the length of stay of clinical patients in adult clinical inpatient units from 2016 to 2021. **Methods**: An integrative review was carried out to answer the research question, studies were searched in Pubmed over a period of five years (May/2016 to April/2021), in Portuguese, English and Spanish, using specific descriptors. **Results**: A total of 27 articles were found in the Pubmed reference bases using the search descriptors. After reading, 19 were excluded for not meeting the inclusion criteria, leaving eight articles. All studies are of the intervention type, one is of the systematic review type and one is a randomized study. The most prevalent care interventions that impacted length of stay were related to the dedicated unit (reduction of 21 days), followed by monitoring and education of patients with Diabetes Mellitus (reduction of 5.1 days). Early mobilization, nutritional intervention and antibiotic evaluation also reduced length of stay by 0.4, 2 and 04 days respectively. **Conclusion**: Care interventions with dedicated units have the greatest power to reduce the length of stay in hospitals.

Keywords: Health Management. Hospital Administration. Quality in Healthcare. Length of Stay/Organization and Administration. Epidemiology of Health Services.

INTRODUCTION

The topic of management, especially that of excellence and quality of care in hospitals, has assumed an increasing role on the agenda of managers, health professionals and users. In this context, studies and initiatives to adopt clinical guidelines and protocols, hospital accreditation, definition of standards and the search for greater safety for patients are intensifying, among other measures whose purpose is the qualification of hospital care (AZEVEDO et al., 2017).

Brazil has 270,880 general beds (clinical and surgical) and 34,464 adult ICU beds, 66% and 48% of which are available for the SUS, respectively. The high number of small hospitals is noteworthy, 5,345 (66%), of which 70% have up to 29 beds. Only 10% of hospital establishments are large (over 150 beds). Although fewer in number, these hospitals account for 42% of the beds, followed by medium-sized hospitals (51 to 150 beds), with 35%. The occupancy rate of general beds in the SUS is relatively low for small hospitals, 24% (up to 29 beds) and 32% (between 30 and 50 beds), compared to 75% in large hospitals. For ICU beds, the health system is more exhausted, especially in large hospitals, with an average occupancy rate of 60% in medium-sized hospitals and 77% in large ones (NORONHA et al., 2020).

Managing the hospitalization process from admission to hospital discharge can impact the indicators of length of stay, readmission and bed turnover within hospital institutions. Interventions carried out in any of these processes, which are part of the patient's hospitalization, can impact the length of stay and qualify assistance. Therefore, reducing hospitalization days becomes a challenge and is seen as an important strategy to reduce the costs of health services, without affecting their quality (POCINHO; ANTUNES; BAPTISTA, 2019).

The average length of stay is an indicator that shows the efficiency, efficacy and effectiveness of hospital management (CONCEAÇÃO et al., 2021). Prolonged hospital stays increase costs and reduce the opportunity for other patients to receive hospital care, since the resources available for this level of care are limited (AGHAJANI; KARGARI, 2016). It is worth noting that hospital stays longer than necessary contribute to reducing the quality of care and increasing costs (SILVA, S. A. Da et al., 2014).

Furthermore, another way to improve efficiency in the use of hospital resources is through adequate management of hospital discharge, which is one of the processes that can undergo intervention and reduce length of stay. Discharge planning is a complex process, which must begin when the patient is admitted to the hospital (WERNER; FRAZZON; FORCELLINI, 2019). However, it is common for this not to happen, generating a feeling of insecurity for family members and/or patients with a "surprise" discharge.

Another hotly debated issue in hospitals is that hospital discharge takes place before 12 noon, so that patients can occupy beds sooner and, as a result, teams can begin interventions. However, a study carried out in Canada did not find an association with a reduction in the length of stay in the emergency room or with the length of hospital stay.

The diagnoses that most impact the length of stay, as they have a high average, are infectious and parasitic diseases, with an average of 37.3 days of hospitalization; respiratory system diseases, with an average of 25 days of hospitalization; and, diseases of the genitourinary system, with an average of 19 days of hospitalization (SILVA et al., 2014).

It is worth noting that, with the increase in life expectancy, there is also an increase in chronic non-communicable diseases and, consequently, an increase in hospitalizations

resulting from their complications. For older people, hospitalization is considered a high risk, as it causes a decrease in functional capacity and, often, changes in quality of life, which can be irreversible (AGHAJANI; KARGARI, 2016). Medical clinic inpatient units absorb a considerable number of patients due to the high demand for non-degenerative chronic diseases.

According to Conceição et al. (2021), Brazil is a country with important regional differences and complex problems arising from social inequalities. Public policies, such as the Unified Health System (SUS), are responsible for promoting equity. Therefore, hospital indicators must be constantly analyzed so that all patients have the same opportunity to use the system.

The SUS faces overcrowding in emergencies and emergency care units, with patients waiting for beds in the network's hospitals. As a result, the length of stay increases more and more, as the place does not have the support that the patient needs to treat their pathology. In this sense, with the increase in demand for health services, combined with economic realities, concerns are highlighted regarding the sustainability of public health systems, making it necessary to seek maximum efficiency in their management (CECÍLIO et al., 2019).

It is important to emphasize that the health system works like a gear. The entrance doors — one of which is the emergency room — function as the "bottleneck" of the system, while the other cogs are intensive care units, admission and hospitalization sectors. Therefore, for this system to function properly, interventions must be carried out in any part of the patient care process. Given the above, the research question arises: what were the interventions that reduced the length of stay of clinical patients in adult clinical inpatient units in the last five years in hospitals?

REVIEW OF LITERATURE

Hospital management has assumed an increasing role on the agenda of managers, health professionals and users. In the last decade, comprehensive care, care production, teamwork, welcoming and humanization of health services have occupied an increasingly prominent position in sectoral discussions in the country (AZEVEDO et al., 2017).

Many hospitals, in the Brazilian context, are in a permanent situation of overcrowding due to a lack of beds, equipment and health professionals. This highlights the need to improve management in order to deal with the scarcity of resources and make the system safer and more efficient (LANDO, 2018).

In this sense, the literature that contextualizes efficiency and security refers to high reliability research schools, studies that seek to understand how highly complex organizations can manage so-called intractable technologies in high demand scenarios without suffering disruptions in the system, making actions challenging. for institutions (LANDO, 2018).

It is observed that, even with the undeniable advances of the SUS, managers still face challenges in structuring services to guarantee the promotion of population health and comprehensive care, especially in the face of population aging and the increased incidence of chronic diseases. and the lack of hospital beds. Therefore, the management of long-stay patients and safe dehospitalization have proven to be frequent challenges for hospital institutions (CONCEAÇÃO et al., 2021).

These same authors emphasize that public policies in the SUS are mechanisms capable of promoting greater equity and social justice. Therefore, they need to be monitored and evaluated so that the resources allocated to them are optimized and so that they fulfill their mission of minimizing inequalities present

in the country and improving the living conditions of the population (CONCEAÇÃO et al., 2021).

Lando (2018) states that hospitals are complex systems, due to high levels of dynamism and uncertainty, which makes them susceptible to variability. These systems are highly proceduralized and regulated, but unwanted events or scarcity of time and resources cause activities to adapt in order to avoid collapse.

Consequently, the hospitalization system can represent a significant sample of the couplings and interactions of a highly complex hospital. Hospitalization for the treatment of a pathology, for example, cannot be interrupted for less time than necessary for such treatment, under penalty of worsening the clinical condition. In the same way, it cannot be so prolonged, otherwise it will further deplete the hospital's resources (LANDO, 2018).

Therefore, it is important to highlight that, according to the Discharge Strategies Manual (2013), when you reduce the length of stay by six hours you can gain 8 beds in a 200-bed hospital, for example. This means that more patients prefer hospital beds.

HOSPITAL STAY TIME

Length of stay is defined as the number of days a patient is admitted to a hospital. This is a real parameter used to identify the use of health resources (AGHAJANI; KARGARI, 2016) and is commonly used as an indicator of hospital efficiency and a substitute measure of costs. Therefore, it is seen as an indicator related to the quality of care provided (SILVA et al., 2014).

During the hospitalization stages, the patient makes use of the hospital's most diverse resources, representing costs. The patient's length of stay is a factor considered in strategic planning and selection of the mix of products offered by a hospital. Therefore, there must be a balance between products with longer lengths of stay — which consume more hospital resources, but are more in demand — and products with shorter lengths of stay — which are more profitable, but less in demand (LANDO, 2018).

However, Silva et al. (2014) state that the nature of the relationship between length of stay and costs still remains unclear, as stays significantly shorter than expected may indicate the presence of efforts aimed at reducing costs through premature discharge of patients, or that is, low quality. On the other hand, lengths of stay that are significantly longer than expected may also be seen as indicative of administrative inefficiency or low quality of care provided, as length of stay may be necessary as a result of complications resulting from poor care.

In another study, it was found that the main factors related to prolonged hospitalization were social issues, in 66% of patients. The lack of a caregiver at home, the lack of space at home and the lack of safety conditions at home stand out. The infectious process sepsis was responsible for 28% of cases of prolonged hospital stay. This last factor corresponds to an important health problem for the population (MODAS; NUNES, 2019).

Predicting how long a patient will be hospitalized is a challenge, but it is an essential task for the operational success of a hospital. Since hospitals deal with severely limited resources, including beds to keep admitted patients, predicting the period that the patient will be hospitalized will be useful to hospital administrators for more effective planning and management of hospital resources (AGHAJANI; KARGARI, 2016).

Staying in the institution has consequences for the health and well-being of the person, increasing the risk of associated morbidity and mortality, given the increased risk of malnutrition, depression, falls, confusional

states, infections and iatrogenic complications, decreased mobility and greater level of dependence. At an institutional level, its effects affect associated costs and profitability, including human and material resources, and increasing waiting lists (MODAS; NUNES, 2019).

INITIATIVES TO REDUCE LENGTH OF STAY

It is believed that the long stay can be partially explained by the need to carry out complementary and specialized exams during hospitalization. Inadequate management of hospital resources can contribute to increased length of stay, such as a lack of quality hospital materials and staff. Finally, one reason that has greatly increased the average length of stay in Brazil is the undesirable hospital infection (SILVA, A. M. N. et al., 2014).

In other words, the infection extends a patient's stay in the hospital by at least four days. Surgical site infection has been identified as one of the most important sites of infection, leading to an average increase of 60% in the period of hospitalization, in addition to requiring great efforts for its prevention (SILVA, A. M. N. et al., 2014). Care-associated infections are among the most common acquired conditions and are a major cause of morbidity and mortality in the United States (DAIBERT, 2015).

A randomized clinical trial managed to reduce length of stay from 9.5 to 8.7 days in 21 Dutch hospitals. He suggests that using data on the quality of antibiotic use is more valuable than data on quantity of use to develop specific improvement interventions. 52 specific improvement projects were carried out in 42 inpatient units, with a median of one project (range 1 to 3) per unit: mainly intravenous to oral switch projects (43%) and projects focusing on adequate treatment for patients with pneumonia (21%) or adequate use of restricted antibiotics (19%) (KALLEN et al., 2021).

Another study carried out an intervention to increase discharges until noon. ``*John Michael Moore Trauma Center*`` is a Level I university trauma center located in rural West Virginia. In 2010, due to an increase in the system-wide hospital census—and no increase in available hospital bed space—an initiative was undertaken to increase hospital discharges by noon across the health system (BARDES et al, 2017).

This initiative was designed to reduce dwell time and increase throughput. Late afternoon highs are believed to lead to decreased efficiency and decreased bed space. Furthermore, it has been shown that emergency room stays decrease if the target of noon discharge from inpatient units can be achieved (BARDES et al., 2017).

A study considered that it is essential to bring together the physical and information flows involved in hospital discharge management processes. This approach was supported by the diffusion of information technologies and the continuous adoption of Cyber-Physical Systems concepts. For this, after making a proposition of the desired future state, a simulation model was built to support its comparison with the current state of the process. Thus, it was possible to highlight possible efficiency gains in the use of hospital resources, as well as a reduction in patients' length of stay (WERNER; FRAZZON; FORCELLINI, 2019).

Furthermore, Negri Filho (2017) states that new trends defend the projection of needs no longer through the number of beds, but rather through the organization of linked hospital production units that enable the good development of lines of care by type of pathology. They involve forecasting not only beds, but also the entire technological range of human resources necessary to provide timely

and properly qualified care.

Therefore, the study that carried out online monitoring of glycemic control identified that, in people with diabetes, the mortality rate reduced from 6.4% in the pre-intervention period to 4.4% in the post-intervention period. In people without diabetes, the mortality rate reduced from 3.7% to 3.1%. The average length of stay reduced from 7.5 to 6.7 days in those with diabetes and from 5.0 to 4.7 days in patients without this condition. The median reductions in length of stay were 0.4 and 0.1 days, respectively (AKIBOYE et al., 2020).

With regard to sociodemographic characteristics, a study reports that the average number of days spent in hospital for the patients studied was 14.9, 11.6 for females and 17.2 for males (SILVA et al., 2014). In another study, this average was 6.8 days, 8.4 days for males and 5.5 for females (LINS et al., 2019).

According to the literature, the condition of frailty tends to be more frequent with age, female gender, low socioeconomic and educational levels and the presence of chronic diseases. Relationships between frailty and nutritional status are also reported. Although this syndrome is characterized by muscle and weight loss resulting from sarcopenia and is associated with malnutrition, the literature has also demonstrated a relationship between frailty and general and abdominal obesity, in this case involving a distinct pathophysiological mechanism, which includes sarcopenia, inflammation and resistance. insulin (LINS et al., 2019). These same authors report that the prevalence of frailty increases with age, ranging from 4% to 59% among the elderly. This condition was the main cause of mortality in that scenario, responsible for 27.9% of total deaths.

According to a Brazilian study carried out in a geriatric ward, the diagnosis of risk for infection was identified in 100% of this population. This is because hospitalization predisposes the elderly to cross-infections, in addition to the invasive procedures to which they are exposed. Therefore, the risk of acquiring infections is high (MODAS; NUNES, 2019).

Negri Filho (2017) highlights that, according to the Australian experience, centers providing short hospitalizations for surgery or medical procedures — elective or emergency — through quality care, promote the efficient use of hospital beds without compromising the patient diagnosis.

GOALS

GENERAL

- Review scientific production on interventions that reduced the length of stay of adult patients in hospitals (public and/or private) in the period 2016-2021

SPECIFIC ONES

- Identify the types of interventions carried out in hospitals (public and/or private);
- Systematize interventions according to the type of intervention and length of stay.

METHOD

This study used the integrative review method to answer the research question. Given the need to ensure care practice based on scientific evidence, the integrative review has been identified as a unique tool in the field of health, as it synthesizes the available research on a given topic and directs practice based on scientific knowledge (SOUZA; SILVA; CARVALHO, 2010).

This method includes the analysis of relevant research that supports decision-making and the improvement of clinical practice, enabling the synthesis of the state

of knowledge on a given subject, in addition to pointing out knowledge gaps that need to be filled by carrying out new studies. Furthermore, the research method allows the synthesis of multiple published studies and allows general conclusions regarding a specific area of study (MENDES; SILVEIRA; GALVÃO, 2008).

To answer the research question, studies were searched on Pubmed over a period of five years (May/2016 to April/2021), in Portuguese, English and Spanish, using the descriptors below and their respective relationships:

(Efficiency[mh] OR Hospital Administration[mh:noexp] OR Organizational Innovation[mh:noexp] OR Change Management[mh:noexp] OR Planning Techniques[mh] OR Total Quality Management[mh] OR Process Assessment, Health Care[mh] OR Quality Assurance, Health Care[mh:noexp] OR Quality Improvement[mh:noexp] OR Utilization Review[mh] OR Patient Care Planning[mh:noexp] OR Critical Pathways[mh] OR Patient Care Management[mh:noexp] OR Organizational Change*[tw] OR Quality Improvement*[tw] OR Care Planning[tw] OR Care Management[tw] OR Planning treatment*[tw] OR Treatment planning[tw] OR Process Assessment*[tw] OR Quality Improvement*[tw] OR Utilization Review*[tw] OR Concurrent review*[tw] OR Stay Review*[tw] OR Critical Path*[tw] OR Critical Path*[tw]) AND ("Length of Stay/organization and administration" [mh] OR Length of Stay*[ti] OR Stay Length*[ti] OR Hospital Stay*[ti] OR Patient stay*[ti] OR Patients stay*[ti] OR Length of hospital*[ti])) NOT (Surgical Procedures, Operative[mh] OR Surger*[tw] OR Surgical[tw] OR psychiatr*[tw] OR pediatricr*[tw] OR paediatr*[tw] OR neonat*[tw] OR newborn*[tw])

Intervention studies that reduced the length of stay in clinical wards of public and/or private hospitals from May 2016 to May 2021 were included. Studies in the specialties of neonatology, pediatrics, psychiatry, emergency and Intensive Care Unit, editorial or that did not include free access via the Capes portal.

The data were tabulated using the Excel spreadsheet, according to the characteristics of the articles and interventions. For the purposes of this study, the variable "type of intervention" was characterized as assistance or administrative or both.

It is important to highlight that there are limitations due to the research being carried out in only one database. Furthermore, as this is a study on management, interventions lasting more than five years of research may add other results, different from those found.

RESULTS

A total of 27 articles were found after searching the database. Of these, after reading the articles, four were excluded for not having free access, three for being editorials, eight for not being an intervention, three for dealing with another patient profile and one for not having reduced the length of stay, leaving a total of eight articles. Only one article is a systematic review on the education and monitoring intervention of diabetic patients. Of the eight studies, four are North American, two are Australian, one is Canadian and one is Dutch. Regarding the types of study, in addition to a systematic review and a randomized study, all others are intervention studies.

Table 1 presents the characterization of the articles according to year, country, intervention, type of intervention and reduction in length of stay. The most prevalent year of studies was 2020 followed by 2017. The results showed that four studies were carried

out in the United States of America (USA) and two were Australian. The most prevalent interventions in this study were: 2 refer to interventions in patients with Diabetes Mellitus (DM) and 2 refer to the dedicated unit. Regarding the type of intervention, 50% of the interventions were exclusively assistance and the other 50% were assistance and administrative. Regarding the reduction in length of stay, 2 studies demonstrated a reduction of 21 days and 5.1, and refer to a dedicated stroke unit (DURAND et al., 2020, ZHAI et al., 2017). Study 6 demonstrated a two-day reduction (SRIRAM et al., 2017)

Regarding the frequency of the type of intervention, table 2 showed that the types of intervention that impacted length of stay were related, in most studies, to the dedicated unit, followed by education and monitoring of patients with DM.

Although seven of the eight studies bring actions from the entire multidisciplinary team involved in care, two studies brought a reduction in length of stay with actions exclusively by members of the multidisciplinary team such as physiotherapy (study 1) and nutrition (study 6) as shown in table 2. And, only one study demonstrated a reduction in length of stay regarding medical treatment (study 8).

Article	Intervention	n (%)
2, 3 and 7	Dedicated unit	3 (37,5)
4 and 5	Education and monitoring of diabetic patients	2 (25,0)
1	Early mobility	1 (12,5)
6	Intervenção da nutricionista	1 (12,5)
8	Assessment of antibiotic use	1 (12,5)
	Total	8 (100)

Table 2. Frequency of type of intervention. Porto Alegre, 2021.

Source: study data.

DISCUSSION

Overcrowding in emergencies, long waits to access a hospital bed in the SUS (Unified Health System), difficulties in managing beds, patients with important social demands who end up staying a long period in the hospital, among other arguments, demonstrate the importance of interventions that are carried out in the process of hospitalization with the aim of better use of the bed (BITTENCOURT; HORTALE, 2009).

The studies brought results of interventions at different stages of the process of admitting patients to a medical clinic unit. Discharge plans, professional navigators, support systems to speed up exams and procedures, among others: all with the aim of the patient spending the appropriate time to resolve their case (no more, no less) within the hospital institution.

Regarding the limitations of the study, it is worth highlighting that only one study reduced the length of stay in terms of the type of treatment. This occurred probably due to searching in just one database. Although it is known in advance that the work of the multidisciplinary team can improve care and quality indicators, including length of stay.

It is worth noting that some studies that analyze observational data, such as before and after, are more commonly used to evaluate the impact of health service interventions. These studies may overestimate the effect size, as they do not evaluate the continuous effect of an intervention, which may decrease or return to baseline values shortly after the post-intervention analysis (AKIBOYE et al., 2020). On the other hand, before-and-after studies may fail to observe a real effect if the time between the intervention, the behavior change and the subsequent follow-up period is insufficient for the impact to become evident (AKIBOYE et al., 2020).

Most interventions were related to a unit dedicated to caring for patients with the same profile to facilitate team communication

	Article	Country	Intervention	Type of intervention	Reduction in length of stay (days)
1	HOYER *et al.*, 2016; SOUZA;	USA	Early patient mobility	Assistance	0,4
2	DURAND *et al.*, 2020	Canada	Definition of expected discharge date in a unit dedicated to the stroke program	Assistance and administrative	21
3	DURAND *et al.*, 2020;	USA	Definition of a dedicated unit to facilitate multidisciplinary team communication	Assistance and administrative	0,71
4	AKIBOYE *et al.*, 2020	USA	Educational process in patients with DM	Assistance	0,4
5	CHAKRABORTY *et al.*, 2021	Australia	Efficacy of interventions in patients with DM	Assistance	0,5
6	SRIRAM *et al.*, 2017	USA	Nutritional intervention	Assistance	2
7	ZHAI *et al.*, 2017	Australia	Dedicated stroke unit	Assistance and administrative	5,1
8	KALLEN *et al.*, 2021	Netherlands	Standardization of antibiotic use	Assistance and administrative	0,8

Table 1: Characterization of articles according to year, country, intervention, type of intervention and reduction in length of stay. Porto Alegre, 2021.

Source: study data.

and care. Zhai et al. (2017) highlight that the Stroke unit, which is an inpatient service organized by a specialized multidisciplinary team, has become an important part of care. With regard to length of stay, this same study highlighted that, with this intervention, it can be substantially reduced. Thus, the median length of stay is 5 days for stroke patients in Australia.

A significant barrier to communication between providers in general medical facilities is the geographic dispersion of team members. It is worth noting that the operation of medical teams is often not per unit, the teams take on patients in different units to meet a specific profile. However, having dedicated beds in hospitals results in delays in patient care (MANIACI et al., 2020).

Collaboration and teamwork are crucial to providing safe and effective hospital care to patients. A significant barrier to communication between providers in general medical facilities is the geographic dispersion of team members. Healthcare professionals who care for patients in different hospital units may have difficulty finding opportunities to discuss their patients' care with all care providers in a regular and structured process (MANIACI et al., 2020).

This same study combined multidisciplinary discussions guided by an instrument and the location of patients in just one unit, which led to a significant reduction in length of stay. Additionally, it improved team efficiency, along with care team communication, and facilitated timely care plan interventions (MANIACI et al., 2020). Furthermore, previous studies have shown that geographic location helped strengthen the doctor–nurse relationship, leading to a better understanding of anticipated length of stay among care providers (ZHAI et al., 2017).

Likewise, another article describes that, after introducing into practice the projected date of hospital discharge for patients undergoing rehabilitation after stroke, this measure resulted in an average of 21 days of hospitalization, without affecting quality. The average reduction of 10 days in bed occupancy in the acute period of stroke (time from stroke onset to admission to rehabilitation) was associated with a shorter time (average of 8.8 days) between referral from acute care to hospitalization for rehabilitation (DURAND

et al., 2020).

A study carried out in the United States identified that assessing early mobility and mobilizing patients three times a day can reduce length of stay by 0.4 days. An important component of the intervention was to incorporate functional status into multidisciplinary discussions, whether through nurse-to-therapist meetings or care coordination rounds between nurses, therapists, physicians, social workers, and case managers (HOYER et al., 2016).

Hospitalization represents an opportunity to support patients with diabetes, with a view to reducing length of stay and hospital readmission. Studies have shown that structured diabetes treatment, such as optimizing pharmacotherapy follow-up plans initiated during hospitalization, can reduce the likelihood of inpatient readmission or, if this occurs, reduce length of stay (CHAKRABORTY et al., 2021).

With regard to patients with type 2 diabetes, hospitalization presents an opportunity to support patients with care, seeking to reduce the length of stay and hospital readmission. Studies have shown that structured diabetes care, such as optimizing monitoring and pharmacotherapy plans initiated during hospitalization, can reduce the likelihood of hospital readmission or, if this occurs, reduce the length of stay (CHAKRABORTY et al., 2021).

This same study uncovered several critical knowledge gaps in the literature. Firstly, there is a lack of studies testing interventions in relation to psychosocial factors in patients with type 2 diabetes. It is known that people living with diabetes are at increased risk of depression, anxiety and eating disorders, which can lead to reduced compliance with the diabetes treatment, as well as increased healthcare spending (CHAKRABORTY et al., 2021).

Type 2 diabetes mellitus is an increasingly urgent public health problem worldwide, both from a prevention and management perspective. Globally, there were an estimated 451 million (18 to 99 years) people with diabetes in 2017. By 2045, an estimated 693 million people will have diabetes mellitus. In Australia, for example, the prevalence of type 2 diabetes mellitus has been increasing at a faster rate than other major chronic conditions such as heart disease and cancer. Furthermore, hospitalizations caused by diabetes complications tend to increase more and more (CHAKRABORTY et al., 2021).

The associated comorbidities and complications of type 2 diabetes mellitus are more likely to be present and progress at an increasingly rapid rate if not managed proactively and effectively. People with type 2 diabetes mellitus are more likely to be hospitalized and have an increased length of hospital stay.

Common strategies for successful multidisciplinary interventions in reducing length of stay and glycated hemoglobin in one study were a dedicated care team, hospital-wide approach, quality improvement focus, insulin therapy, intensive short-term program, transition to primary care physicians and ongoing outpatient follow-up for at least 6 to 12 months. Common characteristics in the skill mix of the workforce, from studies that showed significant effects on length of stay, were diabetes specialists and nurses. In studies that did not show significant improvement in hospital readmission, common intervention components included "basic survival skills" education (CHAKRABORTY et al., 2021).

One study, after introducing into practice the projected date of hospital discharge for patients undergoing rehabilitation after stroke, resulted in an average of 21 days of hospitalization, without affecting quality. The average reduction of 10 days in bed occupancy

in the acute period of stroke (time from stroke onset to admission to rehabilitation) was associated with a shorter time (average of 8.8 days) between referral from acute care to hospitalization for rehabilitation (DURAND et al., 2020).

With regard to multidisciplinary intervention, a study that evaluated the nutritionist's intervention resulted in a reduction of two days of hospitalization. Although hospital malnutrition has been a leading cause of concern for more than 40 years, malnutrition continues to be unrecognized and undertreated in hospitals in the United States and globally. Findings from the last decade show that 30% to 50% of patients are malnourished upon admission to hospital. This study brought us results from a quality program that included: (1) malnutrition risk screening carried out by the nursing team upon admission using an electronic Malnutrition Screening Tool; (2) follow-up consultation with a nutritionist; (3) ready provision of oral nutritional supplements; (4) nutritional education of patients and caregivers in hospital and post-discharge nutritional care (SRIRAM et al., 2017).

It is worth highlighting that hospital admission, in any part of the process, must be handled by the multidisciplinary team so that it is of quality and successful in terms of indicators.

CONCLUSION

This study reviewed studies focused on interventions to reduce the length of stay of adult patients in clinical units in hospitals, published between 2016 and 2021. The most prevalent interventions were related to a dedicated unit, facilitating communication between team members. These were the ones that had the greatest impact on the length of stay in a hospital bed.

Another intervention that had a considerable reduction in length of stay was the one that deals with the education of patients with type 2 diabetes, considering that a large portion of the population has complications related to this pathology. With regard to the multidisciplinary team, interventions such as early patient mobility and a nutritional program that maintains their functionality during hospitalization were emphasized.

It is important to highlight that several initiatives are carried out so that the greatest number of patients can benefit from the bed. However, interventions must be linked to the quality of care. In Brazil, this is an even greater challenge, due to overcrowding in the healthcare system.

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