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The Interventional Models that Aim to Reduce the Rate of Hospital Readmission

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ABSTRACT

Purpose: *The general aim of this paper is to address the literature and various studies reviewing the interventions that aim to reduce the rate of hospital readmission globally.* ***Methodology:1-*** *Prevalence of Hospital Readmission: By addressing this situation in point of the USA, and due to lack of global statistics, a study conducted in the USA (2003-2004) reported about 19.6% of Medicare respondents were readmitted to the hospital in a period of 30 days after discharge.2-Factors that Affect the Readmission Rates: Many factors play an essential role in the readmission rate variations, some of them related to the patients themselves, other factors related to the healthcare systems, and others similar to the healthcare providers.* ***Findings:*** *The study has reached number of results most important of those results are; that all of the previously mentioned studies had relatively similar limitations, the largest one is the small targeted samples, and therefore the results will not be considered a significant or highly representative. It should be applied to a large scale of respondents, and as well as in many countries to implement any successful intervention.* ***Implications:*** *most of the available reports and studies were done in the USA, so that most of the mentioned studies were in the view of this country, which was primarily represented the global view.* ***Originality:*** *This present work point out the importance of re-admission to the hospital (re-admission)which is not medically planned, it is indeed a health problem that reflects a defect of health care systems application that are supposed to be compatible with the needs of patients, i.e. patients are the focus of their attention (patient-centred care). The patients Re-entry is a 'bounced mail message"expresses failure to deliver good message to the community that the patient is healthy and able to stay outside the hospital.*

Keywords: Hospital Readmission, Healthcare, Healthcare Interventions, Public Health.

INTRODUCTION:

The inpatient hospital care spend around one-third of the total healthcare budget in the USA, whereas the length of hospitalizations will impact the economic status of the patients and their families as well. (Weiss & Elixhauser, 2014)

Healthcare systems in hospitals are highly dependent on how much the hospital consumes on every patient, in which as much the patient stays in the hospital, as much he will cost it. So, the overall goals of the healthcare centers tend to be shifted to getting the maximum patient stabilization and then refer him to another facility or outpatient care, not to achieve the maximum patient well-being. So, the individualization of healthcare may play an essential role in the prevention of hospital readmission, according to the psychological, economic, cultural, and educational levels of each patient.

It's essential to understand and review the different policies and efforts that had been made to reduce or prevent hospital readmissions, and also to know the strong and weak points of each one. Whereas, many of these policies were aiming to reduce the hospital readmission through further instructions to the patients after discharge, working on the reduction of the possible complications and functional management of post-acute care. (Fingar & Washington, 2015)

There are many other important issues should be discussed and to focus on them rather than the readmissions and the length of stay, like the healthcare quality, discharge timing strategies, safety of the patients, and many others3 To achieve an effective discharges strategies and so that lowering the length of stay and reduction of the readmissions, many healthcare centers in the USA had launched multi-disciplinary team workers which consist of doctors, nurses, hospital care workers, social workers, psychologists, and much other stuff, all of them were working together to make proper discharge decisions, however, despite all these efforts, the discharge decision still somehow a complicated issue. (El-Eid et al. 2015)

As well as, the admission and readmission rates are mainly depending on the country, area, social status, economic status, post-acute care status, and current resources. So, it is essential to implement an intervention that aims to reduce the readmission rates that will suit all the circumstances of a specific nation or healthcare center as well.

Generally, the readmissions were defined as "subsequent hospital admission for any cause within 30 days after the initial hospital admission" So that, it is essential to know what are the most common diseases or specialties which the readmissions occur, and also the diseases that have the most extended duration of stay. They are arranged as the following2: firstly, the Acute Myocardial Infarction, in 2010, it was reported that the average length of stay for those patients was about 5.3days. Secondly, Chronic Obstructive Pulmonary Disease (COPD), it was reported that the average length of stay in the hospital was about 4.7-4.8 days, and the women have more exacerbation rates after the discharge than the men. Thirdly, Pneumonia, the average length of stay was about 5.4 days. Fourthly, Congestive Heart Failure, two reports addressed this point, one in 2001, and the other in 2010, both of them were reported that the average length of stay about 5.6 days. These statistics and results were reported in the USA, and it should be clear that some conditions may affect the overall length of stay, such as the severity of the disease, the patient's age, previous medical history. Whereas, the reducing of the hospital stay should also be due to saving the patients' health status from the possible inpatient deterioration, not just due to financial issues.

LITERATURE REVIEW:

Interventions That Aim to Reduce Hospital Readmission:

Many interventional strategies aim to improve the outcomes of discharges, and as well as reduce the readmissions. These interventions may be explicitly implemented in many sectors, like nurses' specific interventions, community-based interventions, social workers' specific interventions, pharmacists' particular interventions, and healthcare system interventions.

Firstly, Nurses Specific Interventions, many studies addressed this intervention, one study that had done Colorado, USA (2016), it had assessed the use of an interventional tool which called (LACE), this tool addressed the vulnerability to the hospital readmission after 30 days from discharge, in which it represented the L= length of stay, A= Acuity of admission, C= Co morbidities, and E= Emergency room visits. The higher scores of this index increase the risk for those patients to readmit to the hospital within 30 days from discharge. As well as, the patients with high risks to readmission will receive post-acute care transition (PACT) home visits, which done by advanced practice nurses, which aim to educate patients about their health situations and independent self-healthcare. The results showed that the patients who received PACT had lower readmission rates with a percentage of 42%-53.9% than the control. However, there are a few limitations of this study, the main one which was performed only in one hospital. (Smith& Novelli, 2016)

One other study, which was performed in Ohio, USA (2014-2015), in which this study addressed an intervention which called "At-Risk Care Plans", briefly, these plans were focusing on introducing much-specialized healthcare by triggering the connection and communication between clinical Nurse Specialists and unit managers, staff nurses and the nurse risk manager, on being more precise and professional. Furthermore, this intervention also evaluated and monitored the different circumstances that may increase the risks for readmissions, like socioeconomic status, housing security, past medical history, and many other factors. However, there is just one obvious limitation of this study, in which the respondents' number was low. (Bahle, et al. 2015)

Another study, which was done in North Carolina, USA (2015), in which about 980 readmissions were under the study, 498 of them were for psychiatric patients who were seeking for their treatments, and 482 of them were for other non-psychiatric conditions. Moreover, this study showed that about 36% of the total readmissions were to a different hospital, in which they mainly received healthcare from different providers. Whereas the authors recommend to introduce a special healthcare for those patients with severe mental disorders, and the psychiatric patients in general, to reduce the readmission rates among those patients, as well as this study had predicted a decrease in the readmissions rates in a percentage of 30% if there was a special care introduced to the patients with mental disorders. (Jackson, C al. 2015)

Secondly, Community Health Workers and Health Navigators Interventions, one study was done in the USA, (2014-2015), the intervention represented by one hospital visit (before discharge) and three phone calls (after discharge) by the patients navigators (PNS), this study showed that the patients navigators had much greater success with older patients rather than younger patients. Whereas, this study had not shown a clear success with the patients under 60 years old. Moreover, this study addressed the great adherence of the 7-day follows up in primary care among those patients who had this intervention. However, the main limitation of this study in which it had not taken into consideration the readmissions to another hospital. (Balaban, et al. 2015)

Another study was done in Philadelphia (2014), this study had focused on implementing a "Standardized Community Health Workers model, Individualized Management for Patient-Centered Targets (IMPCT)". This intervention which depends on the ability of the community health workers to break the boundaries between patients and their healthcare providers should be started by the first day of admission, in which the community health workers began to conduct interviews with the patients to help them in sitting the recovery goals, through a clear recovery action plan. After discharge, the community health workers should continue their work by motivating and encourage the communication between the patients and healthcare providers, and answering the patients' questions about their health statuses, furthermore, to help the patients with sitting the future goals especially regarding the attendance of the outpatient hospital appointments. However, this intervention ends after the patients attend their first hospital appointments. The results had shown some reduction in hospital readmission among the targeted patients. However, the primary limitations of this study were the short duration of intervention, and it was done only in one healthcare center. (Kangovi, et al. 2014)

Another study was done in Oregon, USA (2014), which took place at two nonprofit healthcare centers. This intervention had represented by pre-discharge education, discharge instructions, and post-discharge follow up (either through phone calls, home visits, healthcare coaching, and others). Furthermore, this intervention also included motivational interviewing post-discharge, which may last to 90 days after discharge. The duration of this intervention mainly depends on the severity of the health condition, patients' preference, patients' activation levels, and the comorbidities". This study generally had focused on patients with higher readmission rates (Congestive Heart Failure and COPD). However, the results had shown that this intervention had not made a great reduce in hospital readmissions, maybe due to lack of adherence or because the targeted patients were too ill to reduce their readmissions. (Linden & Butterworth, 2014)

Thirdly, Social Workers Interventions, one study which was done in 2016, the intervention was known as "the Bridge Model", this intervention was focused on the inpatient hospitalized adults who suffer from at least one chronic disease, and had a previous hospitalization within the last six months. It was done through three different stages, pre-discharge, after discharge immediately, and a month later after discharge. As well as, each intervention was individually focused on the requirements of each patient. Those post-discharge interventions were done through phone calls, and the actual activities of the social workers were focused on the assessment of the social, economic, logistic, and housing security of each patient. The results showed that the patients who had received this intervention have a readmission rate with a percentage of 16.1%, which is lower than the rate of readmission among other patients who did not have this intervention. However, there is only one limitation to this study, in which it had done only in one healthcare center. (Boutwell, et al. 2016)

One other study, which was done in New York, USA (2015), the aim was to evaluate the role of social workers coordination in reducing hospital readmissions. The targeted sample was from low-income patients, 50 years old or older, and those had high risks to be readmitted to the hospital to assess the nature of barriers that related to staying at the house after discharge among those respondents. The actual activities of this intervention were through phone calls within 3-5 days after discharge and then scheduling house visits in the first two weeks after discharge, and there was a final phone call, which was after 21 days from

discharge. These calls and visits were focusing on housing barriers to follow-up care, home safety circumstances, education about the medications, transportation problems, house healthcare providers, and general assessment of the needs of each patient". Furthermore, the respondents may attend further meetings and workshops that aimed to educate them about the future of their conditions and to address their needs. However, the primary limitation of this study is the small sample size. (Laura et al. 2015)

Finally, Pharmacists Specific Interventions, one study was done in Boston, USA (2015), which assessed an intervention called Project Re-Engineered Discharge (RED). This intervention base on phone calls by the pharmacists to the recently discharged patients, in which those patients provided with proper education about this intervention by a discharge nurse educator, and then after 2-4 days from discharge there were follow up phone calls to the targeted patients, which aimed to assess the medications issues, some problems that related to medication compliance and to educate the patients about the proper use of their medications. After this, the pharmacists should keep the doctors updated about those issues, to modify the treatment plans whenever required. The results showed that the patients who had included in this intervention and phone calls had much lower readmission rates than other patients who only had received discharge education, with a percentage of 56%.However, the primary limitation of this study in which it had done only on a single healthcare center. (Sanchez, et al. 2015)

METHODOLOGY:

Prevalence of Hospital Readmission:

By addressing this situation in point of the USA, and due to lack of global statistics, a study conducted in the USA (2003-2004) reported about 19.6% of Medicare respondents were readmitted to the hospital in a period of 30 days after discharge. About 34% were admitted again in a period of 90 days after discharge. Whereas both of the surgical and medical patients had been studied, in which the medical department patients have a much higher rate of 30 days readmission (21.1%) than the surgical department patients (15.6%). More specifically, by talking about the highest readmission rates among the sub-specialties, patients with Congestive Heart Failure have the highest 30 days readmission rate with a percentage of 26.9%, then the psychosis mental patients with a percentage of 24.6%, then the patients who had a recent vascular surgery with a percentage of 23.9%, after that the Chronic Obstructive Pulmonary Disease (COPD) with a percentage of 23.9%, then finally the patients who had Pneumonia with a percentage of 20.1%. (Joynt & Engl, 2012)

Factors that Affect the Readmission Rates:

Many factors play an essential role in the readmission rate variations, some of them related to the patients themselves, other factors related to the healthcare systems, and others similar to the healthcare providers.

Regarding the factors that related to the patients, they include the economic status of the patient, in which the patients with low income have much higher rates to become ill, lower compliance with attending the post-acute care appointments, inadequate home care and\or poor education. Moreover, the non-adherence to medications, this factor is mainly related to the ability of the patient to buy the adequately prescribed medications, other issues that will lead to the non-adherence like the lack of patient education about their medications, dosages, side effects and duration of action. Furthermore, the instability of the patient's house, it was reported that the insecurity of the patient's housing had associated with the recurrent hospital readmissions, so that, many healthcare systems had implemented programs to provide unique places to the patients who readmitted to the hospital frequently due to the housing insecurity. Finally, the mental disorders and substance abuse, there were high percentages of mental disorders and substance abuse cases associated with high rates of readmissions; unfortunately, most of the non-specialized healthcare centers are not able to monitor and manage those cases all the time. (Jiang, et al. 2016)

About the factors related to the healthcare systems as well as providers, these factors may include the lack of awareness and adequate knowledge about the risks associated with the readmission. Also the absence of the proper budget that will support the strategies of reducing the readmission like education of the patients before discharge[5]Furthermore, some hospitals programs depend on the idea of the more patients admission, the more income to this hospital, so that this will affect the quality of healthcare. Moreover, the shortage of primary health care and the lack of efficient coordination and communication between the different healthcare providers, who work in different systems, will harm the proper healthcare after discharge, which increases the hospital readmission rates.

Generally, to implement an effective intervention that aims to reduce hospital readmission, firstly, you should assess the factors that cause this situation.

FINDING AND DISCUSSION:

All of the previously mentioned studies had relatively similar limitations, the largest one is the small targeted samples, and therefore the results will not be considered a significant or highly representative. It should be applied to a large scale of respondents, and as well as in many countries to implement any successful intervention. Moreover, another major limitation is the restricted budget, in which a sufficient budget is essential for both implementations and sustainably of any intervention. Moreover, the studies had not addressed the limitations related to race, gender, or culture, and how those circumstances can affect the outcomes of the applied interventions. One more thing, it is the time and duration of each intervention. Most of the mentioned studies were lasted only 30-days after discharge, in which the duration is a significant factor in the assessment of the successfulness of any intervention. Furthermore, the addressed interventions had not focused on the effect of psychiatric co morbidities on the overall hospital readmission rates. The only study which addressed this situation the intervention which had done in North Carolina (2015).Although there were many interventional studies which had focused on patient awareness and support after discharge, there is a noticeable lack in the addressing of the other factors that could affect participation in these interventions, like substance abuse and mental disorders. In which, the impact of psychiatric co morbidities and substance abuse on readmission rates should be in concern while implementing new interventions. Also, to modify the intervention strategies to suit those patients, as in the study mentioned above in the section of pharmacists specific interventions, the results showed most of the non-compliant respondents were from those patients who were suffering from substances abuse, so, they should be monitored to achieve the goals of any intervention.

Finally, most of the available reports and studies were done in the USA, so that most of the mentioned studies were in the view of this country, which was primarily represented the global view.

CONCLUSION:

To grantee high degrees of successfulness for any intervention that aims to reduce hospital readmissions, it should apply to as many areas and respondents as possible. It is evident, according to the results of the previously mentioned studies, that the successful professional interventions had been able to connect multiple degrees of healthcare systems, so that, this will encourage the effective communication between providers. Generally, hospital readmissions rate still a big concern globally. Whereas the populations continuing to being older, with more chronic conditions that need continuous regular care, and at the same time, the general funding for healthcare sectors continuing to be reduced. Mainly, most of the healthcare systems do not monitor the patients' situations outside the hospital, like the co morbidities, economic status, mental health, housing stability, housing security, and other stressors.

The mentioned studies showed that most of the individual interventions were unlikely to achieve a significant reduction in readmission rates in a general or global manner. So, successful interventions should have many features like broad applicability and acceptability to many healthcare sectors.

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