

Exploration of Facilitators and Barriers Components in the Process Development and Implementation of the Integrated Clinical Pathway

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Abstract

This study aims to explore the facilitating and constraining components in the process of developing and implementing ICP. The method used an integrative review using the PubMed, Science Direct, ProQuest, Wiley and EBSCO databases and a secondary search for journals limited to the last 10 years and other publication sources related to the topic of writing. 11 studies that were included and based on the results of the analysis of 3 main components that became facilitators and at the same time as obstacles in the process of developing and implementing ICP, namely the managerial component which included the role of hospital leaders managing hospitals and their clinical champions influencing the successful process of implementing ICP, both cultural organizations include an overview an organization that shows the work pattern of officers in the application of ICP as well as functional and technical elements that cover the stages or processes of the implementation of the ICP. The ability to identify the facilitator and obstacle components can determine the implementation strategy.

Keywords: Integrated Clinical Pathway, Implementation, Facilitator, Barriers

Introduction

Hospital (RS) is a health service institution that provides complete health services by providing inpatient, outpatient, and emergency services. Therefore, this institution is expected to provide quality services and utilize resources efficiently. Various management systems have been established as hospital policies in improving the quality and efficiency of services, one of which is the implementation of the integrated clinical pathway (ICP). ICP is considered to be able to provide high standards of care for patients and ensure cost savings in this case cost efficiency in hospitals which can directly improve the quality of health services (Iroth & Achadi, 2019; Jayanti & Hariyati, 2020).

The existence and application of ICP is very important in ensuring the quality of health services, therefore ICP has been adopted worldwide (Bai, Bai, Zhu & Xue, 2018), therefore some results conclude that the application of ICP not only has a positive impact on patients but also to medical personnel and hospital management (Asmirajanti et al., 2018; Daruki et al., 2019; Presenta et al., 2020; Hipp et al., 2016; Iroth & Achadi, 2019; Jayanti & Hariyati, 2020; Taufiqurrahman & Nadjib, 2018). However, in reality the process of developing and implementing ICP is not an easy thing to do because it involves patients and all health care providers.

The process of developing and implementing ICP still varies among countries with different levels of compliance between countries with different conditions (Bai et al., 2018). Several research results have been found in several countries, including in the United States, more

than 80% of hospitals have developed and used ICP for some of their interventions (Astuti et al., 2017), in Australia, they have succeeded in developing 53 of the best ICPs in just a short period of time. 8 months in various chronic and acute medical conditions and based on evaluation results that several hospitals have implemented (Antiocch et al., 2015). In addition, research results were also found in China that the implementation of ICP had reached 94.4% (Bai et al., 2018) and one of the results of hospital research in Indonesia explained that ABC Malang Hospital since 2015 has developed and implemented ICP and there are 15 ICP in some acute diseases.

However, there are still some research results regarding the not yet optimal process of developing and implementing ICP. Currently, several hospitals have developed and have ICP guidelines but the implementation process is not optimal (Astuti et al., 2017). The results of research at the American Hospital found that compliance in the process of applying ICP was not optimal because there were still variations in services, especially in medical procedures (Bryan et al., 2017) while the results of research in the state of Sweden explained that in the process of implementing ICP it had not been fully realized because it was found that from 782 ICP documents there were only 34 or only about 4% of patient documents that were in accordance with the ICP guidelines, which means that officers are not optimal in the ICP application process (Anderson & Williamson, 2020). Furthermore, in China, one of the research results showed that from 45 hospitals in the Chinese region had developed and implemented ICP but compliance only ranged from 65% to 78% (Bai et al., 2018; He et al., 2015).

This phenomenon is also found in several hospitals in Indonesia, the results of the study explain that officers have not fully complied with the application of ICP (Astuti et al., 2017; Purwadi, 2019). One of the results of research regarding the evaluation of the application of ICP states that the level of compliance with the application of ICP in acute ischemic stroke patients in the nervous section of Anutapura Hospital only reaches 80% because there are still variations that arise during the patient care process (Mutiarasari et al., 2017), this is in line with the results of research from Sari. (2017) that compliance in the application of ICP in patients with acute diarrhea in children is not optimal because there is still a variation in service delivery of 41%, in addition, low compliance by officers was also found in the results of monitoring evaluation studies at ABC RSUD Malang which had previously implemented 15 ICPs. (Rosalina et al., 2018).

Optimal compliance in the process of implementing ICP is a step in realizing clinical governance in the health service setting. ICP is prepared and implemented as an instrument to spur the improvement of the health care system, however, the success of the process of developing and implementing ICP depends on the consideration of various facilitators and obstacles in the implementation process (Grol., 2013). One of the initial steps to explore the process of developing and implementing ICP is to analyze the facilitators and barriers to their use in clinical practice (Jun et al., 2015) in addition to the analysis of facilitators and barriers that form the basis for designing an implementation strategy that supports the successful implementation of ICP. (Grol., 2013). Therefore, this study aims to develop and explore the components that support and hinder the process of implementing ICP in improving the quality of health services.

Methods

In this literature review, using databases from PubMed, Science Direct, ProQuest, Wiley and EBSCO and also searching for articles through Gray Literature through previously selected articles. All data bases used are then screened using a range from 2015 to 2022, in English, and in full text. Literature search in each Medline database via PubMed Advanced Search with

keyword 1 “Integrated Clinical Pathway”, Keyword 2 “Barriers and facilitators” and Keyword 3 “Development and Implementation”. Next, the keywords were combined, namely “integrated clinical pathway” AND Barrier facilitators AND Development Implementation OR adoption so that 952 articles were found with details of 15 articles on PubMed, 270 articles on Wiley, 271 articles on ProQuest, 379 articles on Science Direct and 9 articles on EBSCO while in the secondary search, namely from references to primary articles, 8 articles were found. Furthermore, duplicate checks were carried out through the delay reference manager, the remaining 411 articles were found. After filtering based on full text and the suitability of article titles with research objectives, 11 journal articles were obtained. The process of identification, screening, eligibility and inclusion is shown in figure (1), namely the PRISMA flowchart and then the article quality assessment process is carried out using the Critical Appraisal Skill Program (CASP) question guide adapted from (CEBMa, 2014) which is shown in figure (2) Critical appraisal of the reviewed studies.

Results and Discussion

ICP is a standard service protocol based on admission guidelines, admission diagnosis, examination, treatment, care, dietary guidance, health education and discharge planning which has proven to be useful and effective in reducing resource use and variation within hospitals for inpatients without compromising quality. services to patients (Hijrah et al., 2022), therefore ICP has been used in health facilities and organizations in various parts of the world (Aniza et al., 2016; Asmirajanti et al., 2018; Bai et al., 2018; Lawal et al., 2019; Wardhana et al., 2019). Based on the research results, the ICP that has been developed and compiled by experts from various multidisciplinary teams of health workers has challenges in the process of development and implementation (Jabbour et al., 2018). Therefore, knowing the components that affect the process of developing and implementing ICP is very important to optimize the success and utilization of ICP implementation (Geerligts et al., 2020) as well as to minimize possible variations in the implementation process (Kolk et al., 2017). A total of 11 articles were included in the study from 6 countries, namely China (n=1), Germany (n=1), Canada (n=1), Australia (n=1), the Netherlands (n=1), and the majority articles are from Indonesia (n=6). 011).

Table 1. Critical appraisal reviewed studies (CEBMa, 2014)

Criterion	He et al., (2015)	Schwarz et al., (2019)	Jabbour et al., (2018)	Rankin et al (2015)	Everink et al., (2017)	Widjaja et al., (2019)	Astuti et al., (2017)	Mutiarasari et al., (2017)	Sari. (2016)	Asmirajanti et al., (2019)	Paat et al., (2016)
Does the research address the focused question/problem clearly?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is the research method (study design) appropriate to answer the research question?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is the method of subject selection (employee, team, division, organization) clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Can the way of sampling give rise to bias (selection)?	No.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the subject sample represent the population to	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

which the findings will be referred?											
Is the sample size based on pre-study considerations of statistical strength?	Can't tell	Yes	Can't tell	Can't tell	No.	No.	No.	No.	No.	Yes	Yes
Is a satisfactory response rate achieved?	X	Yes	Can't tell	Can't tell	Can't tell	Can't tell	Can't tell	Cannot Tell	Yes	Yes	Yes
Are the measurements (questionnaires) likely to be valid and reliable?	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Is statistical significance assessed?	No.	Yes	Yes	No.	No.	No.	No.	No.	No.	No.	No.
Is the confidence interval given for the main result?	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Could there be a role factor that has not been taken into account?	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Can the results be applied to your organization?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Based on an integrative review of 11 selected articles exploring a range of facilitators and barriers in the process of developing and implementing ICP. One of the research results explains that in the process of developing and implementing ICP, it is possible to find various components that are both facilitators and barriers to ICP (Bai et al., 2018). Based on the results of the analysis of several reviewed articles, there are 3 main components that become facilitators and at the same time become obstacles in the process of developing and implementing ICP, namely managerial components, cultural organizations and components that include functional and technical elements.

The managerial component includes the participation of the heads of departments, hospital management boards and clinical champions in the process of developing and implementing ICP, some review research results show that the development and process of implementing ICP in several hospitals has shown positive results due to the support from managers. (Asmirajanti et al., 2019, Everink et al., 2017 Mutiarasari, 2017) as a form of support by allocating appropriate resources for each inpatient room (Rankin et al., 2015, Schwarz et al., 2019). However, some research results also show that the managerial component is an obstacle to ICP, this is due to the lack of support from the leaders which causes the low compliance of health workers in the process of implementing ICP (He et al., 2015, Jabbour et al., 2018), namely there is no form of regulation that has been prepared as a supporter of ICP such as compliance audits that have not been listed in hospital policies and there is no policy regarding the main duties and functions for each professional care provider in the ICP listed in the policy (Sari. 2016), policies regarding the reward system (Asmirajanti., 2019).

The organizational culture component is also considered as a facilitator and as an obstacle in the process of developing ICP. Based on several articles that have been reviewed, the description of organizational culture becomes a facilitator in the development and application of ICP through motivation for adaptability in changes from multidisciplinary, patient and family (Jabbour et al., 2018, Mutiarasari et al., 2017), commitment from interdisciplinary in

implementing ICP (Jabbour et al., 2018), training and education programs focusing on the development of ICP (Rankin et al., 2015), implementation culture through multi-faceted implementation strategies (Jabbour et al., 2018) and organizational culture regarding awareness of change behavior (Jabbour et al., 2018, Everink et al., 2017, Astuti., 2017) Asmirajanti et al., 2019, Widjaja et al., 2019) one of which is the culture of weekly meetings between professionals and the ICP coordinator (Everink et al. , 2017). However, some research results on organizational culture are obstacles to the development of ICP as in the results of research that the meanset of medical personnel that ICP can reduce their autonomy (He et al., 2015) cultural barriers that show competitive priorities (Jabbour et al., 2018), ICP is considered additional workload for staff (Astuti., 2017), low staff commitment (Paat et al., 2016), resistance to change and lack of rewards (Widjaja et al., 2019) and disagreements between professionals in terms of equipment innovation (Everink et al., 2017), the influence of interdisciplinary communication (Sari. 2016).

Furthermore, the functional and technical components also have an influence on the development and implementation process of ICP. This component has a direct influence on the direction and process of the development and application of ICP (Graeber et al., 2007). Based on several articles that have reviewed the functional and technical components of being a facilitator as well as an obstacle to the process of developing and implementing ICP. functional components and techniques in question such as the availability of evidence base sources (He et al., 2015, Widjaja et al., 2019), the availability of resources such as manpower, time and facilities (Widjaja et al., 2019, Jabbour et al., 2018, Schwarz et al., 2019, Rankin et al., 2015, Asmirajanti., 2019, Everink et al., 2017, Sari. 2016), coordination of staff, patients and families (He et al., 2015, Jabbour et al., 2018, Widjaja et al., 2019., Asmirajanti., 2019, Rankin et al., 2015), service system coordination (Asmirajanti., 2019, He et al., 2015, Schwarz et al., 2019, Everink et al., 2017, Astuti., 2017), the presence of co-morbidity from patients (Widjaja et al., 2019), implementation of supervision, audit and socialization regarding ICP (Widjaja et al., 2019, Sari. 2016) and equipment management (Asmirajanti, 2019).

ICP is the result of adaptation of documents used in industrial quality management known as standard operating procedures which aim to improve efficiency and use of resources and complete tasks within a specified time (Ly et al., 2014), however, until now the implementation process ICP has not been optimal due to various factors found in influencing the process of receiving and using ICP (Asmirajanti., 2019). Success in identifying facilitators and obstacles will affect the implementation process of ICP (Geerligts et al., 2020, Ly et al., 2014), by understanding the components that become facilitators and obstacles in the process of developing and implementing ICP is very important in order to optimize the utilization of the results of implementation from ICP. The various challenges in the ICP implementation process mostly involve issues related to the adaptation of ICP to make it compatible with other aspects of health care affected by various components (Hitch et al., 2022). This integrative review is used as an approach to analyze a series of components that become facilitators and obstacles in the process of developing and implementing ICP.

The process of developing and implementing successful ICP in a complex clinical setting requires handling and supporting factors at various levels such as leaders and the health team as well as the wider hospital context (Jabbour et al., 2018). that ICP is a service complex intervention that requires enthusiasm and support as well as time, therefore the role of hospital management leaders and clinical champions affects the success of ICP implementation (Vanheacht et al., 2010). This is in line with the results of research that through a managerial component which includes support from management parties can directly influence the culture in providing services using ICP (Mutiarasari et al., 2017) and through synergy from all hospital management and clinical champs as well as active involvement from the team.

multidisciplinary can be able to create an organizational culture that has the ability to coordinate across disciplines so that it has a positive impact on optimizing the development and application of ICP (Mutiarasari., 2017).

One of the results of qualitative identification shows that there are obstacles from the application of ICP, namely the attitude of skepticism due to the work culture environment that shows competitive priorities and lack of leadership support (Ly et al., 2015). One of the results of research is that several organizational culture factors can affect the effectiveness of ICP so that even through the use of implementation strategies in the process of implementing ICP it has not been able to encourage compliance because of the complexity of changing behavior between providers and health services which is complicated by organizational culture (Zender et al., 2000). Therefore, through a conducive organizational culture, it is hoped that it can contribute to the development and implementation of ICP, one of which is through a clinical risk management culture (Astuti et al, 2017).

Stakeholder engagement was identified as critical to the successful implementation of ICP through policies that support the initiatives of ICP implementers (Ly et al., 2021), one of the results of the study showed that potential barriers to ICP implementation include differing views on implementation and lack of awareness or different communication concepts regarding the benefits of ICP (Ohara et al., 2020). One form of organizational culture that has a negative impact on ICP is a culture of hatred among multidisciplinary teams with the implication of ICP that directly requiring multidisciplinary team work can hinder their autonomy (Hadira et al., 2020). Therefore, support from the leadership through policies is used as a control system in the process of implementing ICP which directly involves all staff involved in the implementation process.

The involvement of all staff is key in optimizing the ICP development and implementation process. Several research results explain that lack of resources, inadequate training, patient severity, differences in role expectations are challenges in optimizing the application of ICP (He et al., 2015, Schwarz et al., 2019, Everink et al., 2017). This is in line with the research results of Widjaja et al (2019) that the lack of existing evidence-based guidelines, incompetent human resources, lack of commitment in the process of implementing ICP and attitudes that show resistance to change and an ineffective hospital system can be a cause for concern. obstacle to the successful implementation of ICP. The results of other studies explain that efforts in the process of implementing ICP which are complex interventions tend to fail due to lack of effects in the context being tested, not meeting stakeholder needs or related to contextual instability such as staff turnover and lack of funding factors (Brene et al., 2012) therefore, through the policy system that was formed, it is a working mechanism that can directly provide an assessment of the performance of the PPA in the process of implementing the ICP.

However, several research results show that the mechanism system that has been established as a facilitator in supporting ICP has not been able to be implemented optimally such as the audit and feedback system, supervision and implementation of ICP socialization (Sari, 2016, Widjaja et al., 2019). This is in line with the results of the case management system research that has not maximally influenced the success of the implementation of ICP (Mutiarasari, 2017). Therefore, the synergy of the entire management system, hospital clinical champs and the active involvement of the multidisciplinary team are the keys to the success of the development and management process. application of ICP (Lacko et al, 2010).

The limitation in this paper is that it is necessary to add more references to strengthen the identification results of the supporting and inhibiting components of the process of developing and implementing ICP so that they can develop an appropriate implementation strategy by adjusting the culture or culture of a service system in the hospital.

Conclusion

Various possible factors that influence the acceptance and use of ICP that occur at the micro level (individual and organizational behavior) and at the macro level (context and system) are basically interrelated. Successful implementation occurs when the evidence is strong, the context is accepting of change and the change process is appropriately facilitated through the ability to identify components that can be both supporting and hindering especially in the process of developing and implementing ICP. The involvement of clinicians and managers in every stage of the ICP development and implementation process is indispensable for the success of the ICP, in addition to the organizational culture and characteristics that provide the context for being able to understand and select change mechanisms that support the optimal development and implementation of ICP.

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