Interprofessional Collaboration on Drug Administration to Clients with Diabetes Mellitus at Bali Hospital: A Case Study

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ABSTRACT

Background: Errors in health services in Indonesia are caused by poor communication in implementing interprofessional collaboration with a percentage of 70-80%. This causes medical errors, namely with the percentage distribution of 11% drug administration errors, 46% inappropriate drug use and 54% drug prescribing errors. The purpose of this scientific work is to analyze interprofessional collaboration on drug administration to clients with diabetes mellitus.

Method: The method used in this study is observation and measurement tools to evaluate interprofessional collaboration using a checklist Self-rating score for Interprofessional Collaboration in Clinical Practice.

Results: The results obtained are that the application of interprofessional collaboration has not been carried out optimally due to a lack of communication clinical pathway as a guide in carrying out clinical actions, and no health workers have attended IPC (Inter-Professional Collaboration) implementation training. Good communication during the interprofessional collaboration process can solve health problems and improve patient safety. In addition to optimizing the implementation of interprofessional collaboration by holding integrated training to enhance good cooperative relations between professions.

Conclusion: Therefore, there is a need for evaluation by services in hospitals regarding interprofessional collaboration as an effort to reduce the risk of errors in administering drugs to patients and improve the quality of health services in hospitals.

Keywords: Diabetes Mellitus; Interprofessional Collaboration; Drug Administration
Introduction

Interprofessional Collaboration (IPC) is an activity carried out between professionals from different educational backgrounds that aims to solve problems regarding health (Dulahu et al., 2022). Interprofessional collaboration in the health sector needs to be implemented as a way to improve the services that will be provided to patients (Wei et al., 2020). Collaboration between health professionals is important to provide safe and efficient care to patients. Collaboration done well can reduce the workload and increase the knowledge of each existing profession (Donnelly and A., 2021). One benefit of interprofessional collaboration is reducing the incidence of inaccuracies in drug use, starting from prescribing to administering drugs to patients (Thurman et al., 2016 in Vivian et al., 2021). In addition, effective interprofessional collaboration can increase efficiency in service (Afandi et al., 2023).

Based on data World Health Organization shows that as many as 42.7 million of the 421 million inpatients worldwide have problems caused by giving inappropriate actions to patients and medical errors (Babaei, et al., 2018). According to Australia National Prescription Service stated that in hospitals 6% of cases were found due to drug administration process errors and drug side effects, this was due to the lack of collaboration between health professionals (Ita, et al., 2021). Based on the findings World Health Organization (2017) found that health service errors in Indonesia were due to poor communication with a percentage of 70-80%. This causes medical errors, namely with the percentage distribution of 11% drug administration errors, 46% inappropriate drug use, and 54% drug prescribing errors (Pance et al., 2018).

According to Hardin (2019) states that interprofessional collaboration is still not running optimally, and one of the reasons is that some dominate in making decisions without involving other professions. In addition, it is also caused by the absence of an organizational culture, no dynamics within the team, no SOPs related to the implementation of interprofessional collaboration, clear policies have not been formed, lack of training, and personal barriers such as flexibility, communication and trust (Soemantri, 2019; Sulahyuningsih et al., 2017). Good coordination between professionals in discussing the actions to be given to patients until the patient recovers is the goal of health services, although cases are still found due to communication errors such as errors and dispensing drugs and drug prescriptions that do not reach the patient (Dulahu et al., 2022; Afandi et al., 2023). Optimal service from health workers can increase the level of client compliance in
undergoing treatment (Putri & Afandi, 2022). Nurse knowledge in providing services to all clients is very important in supporting the achievement of patient satisfaction (Putri et al, 2022a). Caring Giving Professionals in implementing interprofessional collaboration, need to make a clinical *pathway* that is integrated as a series of treatments for patients consisting of actions to be given to patients and with communication from nurse (Rotter et al., 2010 in Irawati et al., 2022; Rifai et al, 2019). So that this can increase client satisfaction while in service (Putri et al, 2021). Meanwhile, each health worker has a different understanding of interprofessional collaboration based on experiences and believed concepts (Irawati et al., 2022). Therefore it is important to have good communication and attitude between professions in an effort to realize inter-professional collaboration and must have good communication to (Utami et al., 2016; Putri et al., 2022). This case study was conducted as an effort to increase inter-professional IPC in hospitals so that they can form quality health services for patients.

**Method**

The interprofessional collaboration evaluation activity was conducted for four days at the hospital. The method used is to observe doctors, nurses, and pharmacists in providing medical treatment to clients, especially in administering drugs based on discussions and communication that exists between health workers. The measurement tool used by researchers to evaluate interprofessional collaboration is using a checklist *Self-rating score for Interprofessional Collaboration in Clinical Practice* adopted by the *Practice Education Committee* 2013. The checklist is divided into six sub-points consisting of interprofessional communication, application of patient/family care, patient classification, team functioning, collaborative leadership, and interprofessional conflict resolution, with a total of 14 statements. Assessment on this checklist using a value range of 0-3.

**Results**

Health workers who provide health services, especially when administering drugs to clients, namely doctors, nurses, and pharmacists. Every health worker has different duties and responsibilities in providing care to patients depending on the abilities of the profession they have. Based on the case studies that have been carried out on interprofessional collaboration on drug delivery, it has not been carried out optimally due to several obstacles, such as a lack of communication and discussion between professionals in providing medical treatment to clients with diabetes mellitus, and the lack
of IPC implementation training for health workers who can add insight and experience in implementing interprofessional collaboration in hospitals.

The checklist that the researcher has filled in on the application of IPC to drug administration to clients is as follows:

Table 1. IPC Implementation Evaluation Checklist

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Score (0-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interprofessional Communication</strong></td>
<td></td>
</tr>
<tr>
<td>All professions communicate to families and patients</td>
<td>2</td>
</tr>
<tr>
<td>All professions document care activities in the same document</td>
<td>2</td>
</tr>
<tr>
<td><strong>Application</strong></td>
<td><strong>Patient / Family Centered Care</strong></td>
</tr>
<tr>
<td>The care team always considers the patient's needs</td>
<td>2</td>
</tr>
<tr>
<td>The team considers that the patient is the main team in the IPC process</td>
<td>1</td>
</tr>
<tr>
<td>Patient and families are actively involved in discussions and decisions about patient care</td>
<td>1</td>
</tr>
<tr>
<td>When explaining to patients, do not use medical terms, and use language that is easy to understand</td>
<td>3</td>
</tr>
<tr>
<td>Hospital has <em>family council</em> with the IPC team</td>
<td>0</td>
</tr>
<tr>
<td><strong>Role Clarification</strong></td>
<td></td>
</tr>
<tr>
<td>Each member of the IPC team always provides the best care and utilizes existing facilities and infrastructure and uses their respective competencies optimally</td>
<td>2</td>
</tr>
<tr>
<td><strong>Team Functions</strong></td>
<td></td>
</tr>
<tr>
<td>The team has the same values and goals</td>
<td>2</td>
</tr>
<tr>
<td>Each team has participated in IPC implementation training</td>
<td>0</td>
</tr>
<tr>
<td><strong>Collaborative Leadership</strong></td>
<td></td>
</tr>
<tr>
<td>There are opportunities for all team members to engage in knowledge exchange discussions, and decision making focused on implementing PCC</td>
<td>1</td>
</tr>
<tr>
<td>Hospitals have leaders who champion the implementation of IPC and IPE</td>
<td>1</td>
</tr>
<tr>
<td><strong>Interprofessional Conflict Resolution</strong></td>
<td></td>
</tr>
<tr>
<td>Team members feel comfortable expressing their opinions and feel heard</td>
<td>1</td>
</tr>
<tr>
<td>The hospital has an IPC development department</td>
<td>0</td>
</tr>
</tbody>
</table>
From the results obtained, the total value of 0 is 3 statements, the value 1 is 5 statements, the value 2 is 5 statements, and the value 3 is 1 statement. It can be concluded that the highest scores are 1 and 2, which means that the IPC implementation has been running but not optimal.

**Discussion**

**IPC Effectiveness Assessment Analysis**

**Interprofessional Communication**

Based on the results obtained on the interprofessional communication sub-indicator, a value of 2 is obtained, which means that communication activities by all professions have often been carried out to interact with patients and families in providing health services and all professions document treatment actions for clients on the CPPT sheet which is available in the patient's medical record book in Alfarizi's study (2019) said that by having good communication skills in providing health services to patients and families so that the patient's treatment process will run smoothly because of the feedback given by the patient for the action that has been given. In addition, interprofessional collaboration can use patient medical records in the form of CPPT sheets filled out by health workers, namely doctors, nurses, pharmacists, and nutritionists. The use of CPPT has the benefit of facilitating communication between professionals in observing patient development (Sukawan et al., 2021). Based on this, researchers assume that interprofessional communication and interpersonal communication between health workers and patients need to be improved in an effort to provide optimal service to patients through interprofessional collaboration.

**Application Patient / Family Centered Care**

Based on the results obtained from the PCC/FCC implementation sub-indicators, it was found that there were still statements that received a score of 1, which means that these statements were only made at the start and were not routinely applied, namely in the statement that the patient is a team in implementing IPC and the patient and family are involved in decision making. Then a statement with a score of 0 is also obtained, which means that the statement is not available or there is no facilitation, namely the statement that the hospital provides family council.

The involvement of patients and families in making decisions is at the core of carrying out the patient care process. Patient involvement needs to be valued because it can be used as a basis for decision-making. The way to get patients to participate in their treatment is by fostering a
relationship of mutual trust between health workers, patients, and their families so that health workers can facilitate the patient’s internal potential (Rahayu and Mulyani, 2020). For families by applying family *centered care* is very useful because the family is involved in caring for the patient and is given education on how to care for the patient during the healing process (Yugistyoowati and Santoso, 2018). Researchers assume that involving patients and families will help provide care and can optimize health workers in carrying out interprofessional collaboration with patients to make decisions for themselves.

**Role Clarification**

In this sub-indicator, a value of 2 is obtained, which means that the activities have been carried out and utilized the available facilities, namely in the statement that each health professional in the IPC team provides maximum care for patients using the facilities and infrastructure at the hospital. In Agustina's research (2023), the services provided by hospitals to health facilities for use by health workers have been pursued with efficient and effective infrastructure facilities. So that health workers in providing health services are safe and not harmful. Utilization of facilities and infrastructure by procedures can increase patient service satisfaction. Therefore, researchers assume that the services provided to patients have appropriate procedures that can increase patient confidence in the actions given.

**Team Functions**

In this sub-indicator, the results are obtained with a value of 2, which means that the activity has been carried out and made use of the available facilities, namely the statement that the IPC team has the same goal in providing health services and a value of 0, which means the statement was not carried out or there were no facilities, namely the statement about health workers participating in IPC training. In Echa's research (2019) states that collaboration between professions has the same goal, namely the formation of quality health services. In addition, applying a professional nursing care model with a team approach can also optimize patient care (Afandi et al., 2022). Collaborative relationships between health workers involve several professions, including doctors, nurses, pharmacists, and nutritionists, and this collaboration is a determining factor in providing quality care.
Collaborative Leadership
In the collaborative leadership sub-indicator, results were obtained with a value of 1, meaning that the statement was only made at the start and was not routinely applied. Namely in the statement, there were opportunities for all members to hold discussions and there were leaders in fighting for the implementation of IPC. When working together in providing health services, all health workers have the same position so that open discussions and mutual coordination will be formed to make the right decisions for patients regardless of social hierarchy, such as one profession is superior to another profession (Kusumaningrum et al., 2018). Apart from that, collaboration can also apply delegation in decision-making, so that services can run effectively and efficiently (Putri & Afandi, 2023). Researchers assume that the role of health workers is still not optimal in making joint decisions for patient actions because there is an assumption that professionals are outsiders.

Interprofessional Conflict Resolution
In this sub-indicator, the results are obtained with a value of 1, meaning that the statement was only made at the beginning and was not routinely applied, namely in statements, namely in statements, each team member has the opportunity to provide input, and a value of 0 means that the statement was not carried out or there were no facilities, namely in the statement there is an IPC department. There is an assumption that nurses are doctors' subordinates, and nurses believe that in collaborating with doctors only in certain cases that are really needed. This creates domination in providing care to patients. Understanding and the role of each profession can form openness between professions to provide direction to each other so that the contribution roles of health services do not overlap (Kusuma et al., 2021).

Analysis of Implementing Interprofessional Collaboration with Clients
To provide optimal health services to patients, it is necessary to carry out interprofessional collaboration. In this study, a case study was carried out, namely the application of interprofessional collaboration in the administration of drugs to clients diagnosed with diabetes mellitus. From the results obtained, the implementation of interprofessional collaboration in hospitals has not run optimally because the data shows the highest scores, namely on values 1 and 2. The obstacles that cause interprofessional collaboration not to run optimally are the lack of communication between
Interprofessional Collaboration on Drug Administration

Interprofessional collaboration on drug administration to clients involves cooperation between doctors, nurses, and pharmacists. Each profession has different authority in taking action on patients. However, in providing health services, it requires assistance from one another between professions. Rahmawati (2022) said that to achieve optimal patient health, collaboration between professions with the same goal is needed. This indicates that the importance of interprofessional collaboration in patients with diabetes mellitus in drug administration because all health workers have the same goal of improving health services.

The duties of health workers in administering drugs to clients are that doctors examine and prescribe medicines needed by patients, pharmacists mix medicines based on recipes made by doctors, and nurses give medicines to patients by applying the six right principles of drug administration. Doctors have the authority to prescribe drug therapy in the form of writing a prescription which is the final action after the doctor has taken anamnesis and made a medical diagnosis (Rusli, 2016 in Subagya et al., 2021). The pharmacist must prepare by compounding the doctor's prescription, confirming with the doctor if there is an unclear prescription, submitting the drug to be given by re-checking the compliance with the prescription and monitoring the use of drugs, especially drugs for patients suffering from chronic diseases (Saisab, 2019). Meanwhile, the nurse's task of giving medicine directly to patients must apply the six principles of drug administration (Setianingsih & Septiyana, 2020). This shows that in providing health services to patients, especially providing drug therapy, collaboration between professionals is needed so that the drug therapy needed by patients can reach the patient and is expected to improve patient recovery.

Obstacles that can cause the non-optimal implementation of interprofessional collaboration are a lack of communication and the existence of social hierarchies that assume that other professions are superior. Nurses and pharmacists also rarely discuss with doctors the actions to be given to patients. Nurses tend to be the executors of actions ordered by doctors. In Rahmawati's research (2022) said that generally, what happens in hospitals, doctors tend to be leaders and nurses who will carry out the instructions given. In addition, there is a need for effective relationships and communication in an effort to establish optimal interprofessional collaboration. With well-established communication during the interprofessional collaboration process so that they can solve health problems and design actions that will be given to patients (Siokal, 2021; Pitaloka et al., 2022). It can be assumed that the
lack of communication between processions can be an obstacle to the implementation of interprofessional collaboration and can cause the risk of errors occurring in providing treatment to patients.

In addition, based on communication observations made by indirect communication, namely through CPPT sheets, however, CPPT writing was not sustainable between doctors and nurses, and pharmacists because pharmacists did not write down CPPT every day but once every three days while doctors visit every day and nurses write down each shift. According to Sukawan (2021) said that CPPT is used for effective communication in the implementation of interprofessional collaboration, where every finding and opinion of health workers is outlined and put together which contains a treatment plan, findings from medical history and actions given to patients are documented in writing to facilitate monitoring of the patient's medical history and make decisions based on the results of other observations.

The Role of Nurses in the Implementation of Interprofessional Collaboration on Drug Administration

Nurses has a role in implementing interprofessional collaboration on drug administration. Based on the observations that have been made, it is found that there are no nurses who have attended training related to IPC, and are still not available clinical pathway (CP) for diabetes mellitus patients which can be used as a guideline in providing interprofessional collaborative actions. Based on Apriani's research (2018) states that a clinical pathway is a guideline for carrying out evidence-based clinical action in health services. Besides that, clinical pathways can be used as a tool for coordination and communication between professions involved in managing the same patient. the function of the clinical pathway, namely to ensure that no important aspects are forgotten in providing patient care and ensure that all interventions are carried out promptly by encouraging health workers to be active in planning services (Nurliawati and Idawati, 2019). This activity can also project patient services in accordance with the respective professional code of ethics (Khoiroh et al, 2020; Kharisma et al., 2023).

In providing drug therapy, nurses collaborate with doctors regarding drug prescriptions given according to the patient's condition, and pharmacists to prepare drug concoctions according to a doctor's prescription. The nurse's job is to provide medicine directly to the patient by applying the six correct drug administration and medication administration procedures in the hospital. Based on
the collaborative intervention given to Mr. P regarding drug administration, namely insulin (Lantus 12 IU, Novoramid 6 IU), IV fluids (0.9% NaCl 20 tpm, analgesic drugs (Peinlos 400 mg/8 hours), and antibiotics (Cefobactam 2 gr/12 hours), but not all nurses apply the six correct drug administration and explain to patients the benefits and side effects of the drugs given. According to Aryani (2009), nurses in administering drugs must pay attention to the six correct principles of drug administration, namely the right patient, correct medication, correct dosage, correct method, correct time, and correct documentation (Aswatun et al., 2019). The implementation of drug administration by applying the six correct drug principles aims to minimize the occurrence of medication errors (Mainet et al., 2021). Nurses must carry out the application of these principles as a form of ethical and legal responsibility for the interventions provided by existing standard operating procedures (SOPs). Double check with other nurses needs to be done to prevent medication errors. Besides that what needs to be done is to re-check the patient's identity with at least two identities before carrying out pharmacological therapy (Septiyaningsih and Septiana, 2020).

The results of the evaluation of the patient Mr. P after being given drug therapy for diabetes mellitus, namely by checking blood sugar 2 hours PP (postprandial) with the results obtained on April 27, 2023, 144 mg/dL, April 28, 2023, 107 mg/dL, and April 29, 2023, 207 mg/dL, the results of the examination showed that the patient's blood glucose level was still unstable. Blood glucose levels in patients with diabetes mellitus, if not controlled, can cause complications. Therefore, it is necessary to carry out routine checks to determine the patient's blood glucose levels. Efforts can be made through the four pillars of management of diabetes mellitus such as providing education, diet, physical activity, and pharmacological therapy (Sumakulet et al., 2022).

To improve the implementation of interprofessional collaboration so that it runs optimally, it is necessary to evaluate the implementation that has been carried out. Based on the observation that there are no nurses who have attended training related to IPC, it is necessary to have facilities from the hospital to conduct IPC training for all health workers. According to Mawani (2019) states that the way to optimize the implementation of collaboration between professions is that the hospital can hold integrated activities or training to improve good cooperative relations between professions.

**Conclusion**

The implementation of interprofessional collaboration for drug administration by health workers such as doctors, nurses, and pharmacists has been running but has not been maximized. This is due
to the lack of inter-professional communication, the unavailability of departments dealing with IPC development, health workers who have not attended IPC implementation training, and there is still a social hierarchy that thinks that other professions are superior.

References


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