PHARMACISTS’ PERCEPTION OF THEIR ROLE AND ASSESSMENT OF CLINICAL PHARMACY EDUCATION TO IMPROVE CLINICAL PHARMACY SERVICES IN INDONESIAN HOSPITALS

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ABSTRACT

Objectives: To identify the pharmacists’ perception on their role, barriers to implement clinical pharmacy services (CPSs), and importance of clinical pharmacy education (CPE) to improve CPSs in Indonesian hospitals.

Methods: A predetermined questionnaire was distributed to pharmacists (n=49) in 21 public hospitals in Padang and 3 in Medan, Medan, Indonesia. The questions were answered regarding the perceived role of pharmacists in clinical pharmacy service, barriers to implement clinical pharmacy services and the importance of CPE.

Results: 46.9% of the pharmacists agreed that the role of pharmacists should be expanded to include patient education and counseling programs. The barriers to implement clinical pharmacy services were identified as lack of support from healthcare providers (42.8%), lack of knowledge regarding clinical pharmacy service (36.7%), and lack of awareness about the role of pharmacists (26.5%). The majority of pharmacists (79.2%) believed that clinical pharmacy education is important for pharmacists to improve their knowledge and skills.

Conclusions: This study indicates the need for continuous education and training of pharmacists to improve clinical pharmacy services in Indonesian hospitals. The importance of clinical pharmacy education for pharmacists to improve their knowledge and skills is highlighted.

Keywords: Role of Pharmacists, Perceptions, Clinical Pharmacy Education.

INTRODUCTION

Few decades ago the roles of pharmacists were restricted only to manufacturing, compounding, and supplying drugs to patients [1]. As the number of marketed drugs and the practice of multiple drug therapy have increased, issues surrounding quality of drugs and their rational use have emerged globally. Pharmaceutical care has become an important subject to optimize patient care [2]. Thus, the roles of pharmacists around the world have been expanded to drug consult and patient-care providers since the twenty-first century [3].

Degree of the provided pharmaceutical care varies across countries [4]. Based on a survey conducted on perception of Canadian pharmacists, it could be summarized that the pharmacists felt that they have already performed five of the expanded roles including collaborative drug therapy management, public health outreach, prescriptive authority, patient self-care support, and dispensing leadership [5]. Currently in the US, the pharmacists need to be able to provide many functions in pharmaceutical care activities including drug monitoring and disease management programs, active participation in the healthcare team, consultation of drug utilization, outcomes research, drug information, patient education, formulary management and public health initiatives like hypertension and diabetes education programs, and immunizations [6, 7]. In developing countries, the role of pharmacists in healthcare services varies from one country to another and is still under continuous transition. In most developing countries, Pharmacists have not fully performed their new roles in the team of healthcare providers [8].

Pharmaceutical care has been found to improve patient’s outcomes and efficacy of disease treatments [1]. For example, with regard to economic outcome, a study on impact of renal drug during service on dose adjustment in cases of hospitalized patients with chronic kidney disease (CKD) undertaken in a Malaysian hospital indicated that cost, pre-therapy assessment, and follow-up were 1.2256 during a period of 4 months in 2007 [1]. A pharmacist-driven educational intervention and counseling programs on patients with hypertension (n=49) in the university teaching hospital of Cova da Beira Hospital Centre, Portugal significantly improved the patients’ adherence on the provided medications and blood pressure control [9]. Additionally, a review conducted by Belgaude et al. summarized that pharmacist interventions in the management of CKD have shown positive impacts on the treatment outcomes [10]. Hence, these facts proved the importance of inclusion of pharmacists into the team of healthcare providers.

All of these achievements are highly determined by a wide range of factors such as sufficient knowledge, skills, attitudes of the pharmacists, acceptance by other healthcare providers, and support of the policy-makers [11, 12]. Therefore, these factors should be reviewed and taken into account when an institution plans to establish programs to improve pharmaceutical care including CPS. With respect to these, few studies on perceptions of healthcare providers on the extended roles of pharmacists have been conducted in different parts of the world [13-16]. However, the type of barriers and their priority vary from one country to another and to the large extent are affected by socioeconomic factors such as Asian countries including Indonesia. Thus, evaluation of the pharmacists’ perception on their role, current condition of the provided CPS, and barriers to the practice change are essential to identify issues currently faced by pharmacists in their practices. Thus, these studies would be the base in development of strategies for the future plan in implementation and improvement of the extended roles of pharmacists in Indonesia. These findings are also an important consideration for the future inter-collaboration program among hospital pharmacists in Asian countries.

Therefore, the objectives of this study were to identify the perception of pharmacists on CPSs as an integral part of pharmaceutical care, the current conditions of human resources, and supporting equipments and budget availability associated with the roles of pharmacists in implementing their duty as care givers, and strategies to improve the CPSs through implementation of CPS in hospitals.
MATERIALS AND METHODS

This study was conducted in four hospitals and one health-related faculty in North Sumatra, Indonesia, for the two-month period in 2012. These hospitals included a hospital, a hospital, and a university hospital. A multiple choice questionnaire was prepared to evaluate the perception and satisfaction of the participants on their institutional and personal views regarding the implementation of CP. The questionnaire was distributed to the participants, and the response rate was high. The participants were asked to choose the most or least for the importance of CP. The results were analyzed using the chi-square test, and the level of significance was set at p < 0.05.

The participants were asked to rate their perception of CP on the following four items: (1) the importance of CP, (2) the frequency of CP, (3) the number of participants, and (4) the duration of CP. The results were analyzed using the chi-square test, and the level of significance was set at p < 0.05.

Table 1: Statistical analysis of the characteristics of the participants and response category

<table>
<thead>
<tr>
<th>Characteristics of the participants</th>
<th>Category</th>
<th>Statistical analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>Male/Female</td>
<td>Descriptive, frequency</td>
</tr>
<tr>
<td>Profession</td>
<td>Yes/No</td>
<td>Parameter, binomial</td>
</tr>
<tr>
<td>Education</td>
<td>Power/High school</td>
<td></td>
</tr>
<tr>
<td>Availability of CP</td>
<td>Yes/No</td>
<td>Descriptive, binomial</td>
</tr>
<tr>
<td>Installation</td>
<td>Agree/deny/ignore</td>
<td>Descriptive, frequency</td>
</tr>
<tr>
<td>Provision of CP</td>
<td>Focused session/individual discussion/personal discussion</td>
<td>Descriptive, frequency</td>
</tr>
<tr>
<td>Frequency of CP</td>
<td>Weekly/monthly</td>
<td>Descriptive, frequency</td>
</tr>
<tr>
<td>Duration of CP</td>
<td>Every month/6 months/year</td>
<td>Descriptive, frequency</td>
</tr>
</tbody>
</table>

Table 2: Opinions of the participants on CP

<table>
<thead>
<tr>
<th>Subject</th>
<th>Category (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of CP &amp; crucial</td>
<td>Agree/Neutral/agree (37.5)/9/7/3</td>
</tr>
<tr>
<td>Frequency of CP</td>
<td>Agree/Neutral/agree (25)/0/0/0</td>
</tr>
<tr>
<td>Satisfaction of CP</td>
<td>Agree/Neutral/agree (25)/0/0/0</td>
</tr>
<tr>
<td>Duration of CP</td>
<td>Agree/Neutral/agree (25)/0/0/0</td>
</tr>
<tr>
<td>Frequency</td>
<td>Every month/6 months/year</td>
</tr>
</tbody>
</table>
Barriers to the implementation of CPEs

In the context of barriers posed by the pharmacists to implement their intended roles identified in this study were limited only to supporting patients and budget availability. More than half of the participants (59.28%) declared that supporting patients were still poor in these hospitals. Only 31.28% of the participants stated that supporting patients were good. The remaining participants (19.48%) argued that supporting patients were insufficient. Most participants (61.98%) also revealed that budget availability was still poor to support their duty just 13.19% of them argued that budget availability was good to support their duty. The remaining participants (22.17%) stated that the available budget was sufficient to support their duty.

Topics of clinical pharmacy education

The CPE topics (in decreasing order) suggested by the participants are: exposure to new drug related problems (15.83%) and opinion therapy, antibiotics utilization and proper usage, applied pharmacology to optimized dose, pharmaceutical care, therapeutic monitoring and monitoring of specific diseases, total parenteral nutrition, and practical pharmacoeconomics. There was statistically significant difference in terms of collect patient problems to be assessed on a 5-point Likert scale at a 0.05 level of significance.

DISCUSSION

The roles of pharmacist have been expanded to drug consultant, service, and patient-care providers of the existing roles, a dispenser, and supplier of pharmaceutical products. In order to implement these new roles, the pharmacists must be able to serve many functions [5]. Pharmacists' perception on the roles as well as documentation and review of the patients care given by the pharmacists are essential for the future plan of CPEs. However, pharmacist-centered pharmacy practice is in these hospitals has just been established since 2012.

Three hospitals are the first largest ones located in the capital of North Sumatera, Medan. Adam Malik Hospital is the only class A hospital in the western part of Medan. A hospital means it has broad facilities and capability of specialist and subspecialist healthcare, and it also serves as a referral hospital in that region. In addition, it is also one of the three hospitals included into the pilot project for the case mix system by Ministry of Health Indonesia (MOH-DRG) in Indonesia. The system of this part of the government effort to implement universal health coverage in Indonesia. Most of the participants (22.9%) were employed from Adam Malik Hospital and the other 10 were employed from Medan and Columbia hospitals. These three hospitals are classified into class A hospitals (class A hospitals have at least 51 specialist and limited subspecialist heathcare). Nine of the participants were twenty years present. More than 10 years of experience in pharmacist. Most of the participants have been in hospitals for more than 25 years. Only 7% of them have had less than 10 years experience. Nine of the participants were under 10 years of experience in hospitals. They were familiar with the existing CPEs in these hospitals. Thus, these participants provided helpful experiences and interesting results.

Many experts were associated with the quality of the provided roles. One of the most critical determinants was the number and degree of knowledge of the pharmacists to expand their role. In fact, only 20.1% of the participants argued that they were familiar with and understood how to apply CPEs concepts for patient care. The participants noticed that CPEs was an integral part of the healthcare system and could contribute to improve healthcare. For example, as argued by Chernecky et al., pharmacists can play an important role and improve medication management in the healthcare system [6]. Most of the pharmacies (79.4%) declared that CPEs have ever attended superintendence duty. Most of them (80.1%) felt that CPE was critical to support their new roles. As indicated by their recent age and long working experience, they worked about 35 years in schools of pharmacy or as a basis of pharmacists product recommendation. This means that these pharmacists have been given opportunities to improve their knowledge and skill in CPE. Thus, they should become lifelong learners. Therefore, improvement of their knowledge and skills through various activities including continuing CPE according to their need was important to contribute effectively in the team of healthcare providers.

Even though they update their skill by themselves, they argued that the current understanding of pharmacists on CPE still needs to be improved. Most of them were educated in schools of pharmacy on the basis of pharmaceutical products orientation. Thus, provision of CPE is crucial to strengthen their understanding and to support the clinical pharmacy activities in these hospitals. Curriculum in most schools of pharmacy is in Indonesia have changed and included CPE as a discipline since more than ten years ago. However, it still needs improvement and should be directed toward a more clinically focused. Studies have shown that skill improvement can be achieved through cooperation among educators between and within countries by learning each other. For example, it was found that cooperation among US and Canadian pharmacists has the opportunity to implement the latest of what each country has to offer to universities and hospitals to reduce differences in specialty training [7]. Thus, cooperation among pharmacists in hospitals, national and international universities may be valuable to exchange experiences and find new ways to solve the existing problems in hospitals in Indonesia and improve curricula in schools of pharmacy according to the needs of stakeholders.

As found in this study, supporting equipment like internet accessible computer were still rare in large hospitals. Lacking an internet accessible computer is also important to get accurate information to update their skills and to solve problems that they may face in their practice. As revealed by Galanis et al. in their finding that internet supports and acceptance of other healthcare providers (the physicians and nurses) regarding the implementation of the next generation pharmacy practice is still experimental and requires constant monitoring in clinical pharmacy implementation [6]. Furthermore, implementation of CPE and availability of supporting equipment as well as budget in these hospitals has not been in accordance with what is expected. Therefore, every effort should be done to resolve these problems.

With regard to CPEs, most of the participants (76.76%) believed that it could be implemented through small group (less than 20 participants) of one-day format sessions provided by national and international speakers to pharmacists in hospitals and in teaching hospitals in the region. According to their concerns, the four major important subjects to cover were: approaches to maximize IPP, training and developing pharmacy, antibiotics utilization and proper usage, applied pharmacodynamics to optimize dose, and pharmaceutical care. In other part of the world, studies have indicated that application of these approaches in patient care have resulted in improved treatment, reduced hospital stay length (0.5-0.7), and costs. For example, it has been given a group of 50-70 to 120 to 120 and IPPs could be reduced under the influence of pharmacists intervention [18]. Another study on impact of pharmacy patient interventions on IPPs in 13 different patient groups in Swedish judged that 12% of the adverse drug reactions were prevented or reduced [19]. A study on the impact of small drug detailing service on dose adjustment in hospitalized patients with CED was conducted by Lomas et al. in Prince General Hospital. The findings indicated that medication errors were decreased to 18.5% (p < 0.05) and drug重整 error rate was decreased to 18.5% (p < 0.05) [18]. A randomized controlled study conducted by Yas et al. on 104 patients with oral metabolic control treatment of type 2 diabetes studied in the group with pharmacists consultation compared to those receiving standard of care group [20]. Additionally, a review conducted by Selgan et al. on comparison that pharmacists intervention in the management of CED have shown positive impacts on the treatment outcomes [11]. In the future, CPE should be focused on improving patient treatment outcomes. The role of CPEs (approaches to minimize IPPs and optimize therapy, antibiotic utilization and proper usage, applied pharmacodynamics to optimize dose, and pharmaceutical care) must be highlighted for the future development of programs in the installations of Pharmacy in these hospitals.

There have been limited studies evaluating perception on CPEs and CPE's impact on patient outcomes. Different states of implementation in Indonesia. Nevertheless, similar studies have been performed.
elsewhere. A study on sixty community pharmacists regarding their perception towards counseling and counseling clinical pharmacy education program was undertaken in Nepal. The pharmacists revealed that patient counseling was their responsibility and continuing education was important to improve their role in the provision of healthcare services [14]. A survey on providing pharmacists in Canada indicated that they were eager to move away from their traditional roles to more patient-oriented. The pharmacists also felt that they required training for this transition [15]. Other studies on perceptions, experiences, and expectations of physicians regarding the role of pharmacists in hospital settings were also conducted in India. More than half of the physicians were willing that pharmacists counsel and educate their patients regarding appropriateness and safety use of the prescribed medications. Indian physicians (2010) agreed that pharmacists informed them regarding DRS experienced by their patients [16].

Another survey was conducted in two hospitals (the University of Alberta and Stanley Children's Hospital) in Canada to develop an evidence-based model of practice and to evaluate the satisfaction of pharmacists and their stakeholders on restructuring of CPAs. The healthcare providers including pharmacists, physicians, and nurses felt that proactive pharmacists should be more widely available to improve patient outcomes in terms of patient satisfaction [21]. Similar study on attitude of healthcare providers and medical students on CPAs was also conducted on three randomly selected hospitals and six health-related colleges in United Arab Emirates. The study indicated that most of the medical students and healthcare providers believed that clinical pharmacists can improve the quality of healthcare services. The medical students and healthcare providers realized that clinical pharmacists in an important integral part of the healthcare team and expressed their willingness to collaborate with the clinical pharmacists [14]. A more recent study on the perceptions of pharmacists and physicians addressing the extended roles of pharmacists was performed in five selected hospitals in Ternatnia. The healthcare providers reveal that pharmacist as an integral part of healthcare team and have a good perception on pharmacy practice [22].

With regard to preprofessionalism of pharmacy student to provide pharmaceutical care, Barsoum et al. conducted a cross-sectional study (n=120) from one pharmacy school on the perception of pharmacy students in Heraklion Crete. The students believe themselves to be ready and confident enough to prepare for pharmacists even though theircompetency in certain areas still needs improvement [23]. The participants in this study were recruited only from one part in Crete. Thus, the findings may not apply to other parts of the country.

CONCLUSION

Results of this study confirmed that 100% of the participants believed in the importance of CP. Knowledge of pharmacists on CP as well as supporting factors to improve their new roles will needs improvement. Support of the related institutions and other healthcare providers are also crucial to implement and improve CPs.

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CONFLICT OF INTEREST

UNDECLARED

REFERENCES