ISSN No:-2456-2165

A Glance in the Pharmacy Practices of the ASEAN Countries: Indonesia,Vietnam, Malaysia, India and the Philippines

Maryglen F. Gargantiel MAN, MSPh
(Fellowship Baptist College) is pursuing Doctoral degree program in
Pharmacy in Centro Escolar University, Manila,Philippines
Tel: (034)4712-878; 09173003720;09328718757

Prof. Dr. Erwin M. Faller
(Centro Escolar University, Graduate School,
Manila and San Pedro College, Pharmacy Dept., Davao City, Philippines)

Abstract:- The term Good Pharmacy Practice (GPP) encompasses all related activities including the supply of medication and other health products, the provision of health information and advice for the patient, and patient health outcomes. The Federation International Farmaceutique (FIP) final guidelines defined GPP as "the practice of pharmacy that responds to the needs of the people who use the pharmacists' services to provide optimal, evidence-based care [1].

The practice of pharmacy is regulated by legislation forming the bases for the further development of the profession by the law of that particular land. The aim of this review is to present data-based articles about the basic concepts, principles and activities of Good Pharmacy Practice (GPP), in ASEAN countries with the emphasis on the context of professional practice (Health Care System, Pharmacy Practice, and Pharmacy Education). The Federation International Farmaceutique (FIP) promotes the principles and activities of GPP, and based on its recommendations, it is necessary that every national pharmaceutical association should adopt its own GPP standards that would serve as guide for their practice. Presented also in this review are the context of professional practice (Health Care System, Pharmacy Practice, and Pharmacy Education); good pharmacy practice settings that include: Rational use of medicines (RUM); Pharmaceutical care services where pharmacists are involved and function according to their mandate. Importantly, this paper presents that every pharmacist, should acquire and fulfill the GPP Standards, in order to give full professional and personal contribution to the improvement of service quality and health promotion in their respective areas in ASEAN countries.

Keywords:- *Asean; GPP Standard; RUM; Healthcare system; Pharmacy education.*

I. INTRODUCTION

ASEAN (Association of Southeast Asian Nation) is composed of ten members namely; Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. This paper is aimed to take a look on the basic concepts, principles and activities of Good Pharmacy Practice (GPP) in ASEAN members (Indonesia, Vietnam, Malaysia, India and the Philippines) with the emphasis on the context of professional practice (Health Care System, Pharmacy Practice, and Pharmacy Education).

Providing the best quality of care to their patients is the goal of every ASEAN pharmacist who wish to practice pharmacy at a level wherein they could see themselves achieving fulfillment in doing healthcare services in various pharmacy settings especially in the Community. Collaborating with other members of the healthcare team, establishing trust and mutual respect inter-professionally, and fulfilling their mandate as pharmacists in action, is another goal that many pharmacists wish to experience. Sad to say, a lot of reasons may serve as barriers for this to be attained. Several studies have mentioned reasons for not attaining these goals, such as the lack of individual's technical knowledge, skills, right attitude and leadership support in the workplace in order to improve pharmacy practice. Good Pharmacy Practice (GPP) guidelines and models have been existing already in different countries; however, these might be operating on advanced levels that may not be simply attained by others due to issues in applicability in different environments and cultures [2].

As a team effort many professions has been involved in the provisions of health services in their own community and the pharmacist is one essential member of this multi-disciplinary team. It is the Pharmacist's role to improve and make the rationale use of medication possible to ensure a safe and better patient outcome [3].

It is the pharmacist's role being the final link in the medication chain to ensure delivery of quality, safe, and efficacious services to the patient in terms of providing the appropriate education and counselling, allowing the patient to understand his/her medication as to how and when it shall be taken; what the medications are to be used for; and the duration of his/her treatment. Additional information through drug leaflets, info graphic materials and the like should also be provided to the patient as well as non-pharmacological and relevant advises to reinforce knowledge necessary for the proper use of medications.

The practice of pharmacy comes together with designing a well-equipped, organized and properly maintained pharmacies in order to deliver pharmaceutical products and services, as its essential role in protecting the public health. It is the Pharmacist's duty as a healthcare professional, to maintain and continually upgrade himself/herself by attending seminars, and training and to observe the Pharmacy Code of Ethics [4].

II. CONTEXT OF PROFESSIONAL PRACTICE (Health Care System, Pharmacy Practice and Pharmacy Education)

In the context of professional practice, ASEAN countries create their own set of standards representing and advancing the profession of pharmacy. It is said that over the years, pharmacy profession has already evolved from its conventional beginning of the traditional drug focused role to an advanced patient focused activity. Pharmacists in the past decade were more into compounding and manufacturing of medicines, but overtime this role has been significantly reduced. The call for advancement in the role of pharmacist has carried them to take part in the collaborative health care team that works in providing better health care for the patients that contributes to achieving the global millennium development goals.

Health system refers to all organizations, people, and activities whose primary purpose is to promote, restore, and maintain health. Good governance of health systems is therefore important to ensure the delivery of essential health services to all, whenever they are needed [5]. Healthcare systems and polices in the practice of pharmacy has a critical role in determining the manner of health services to be delivered, utilized and how it affects the health outcomes. The following are the roles of pharmacists as specified such as - participation in public health policy development; disease prevalence and drug utilization linkages, enablement in the development of effective health policies, as well as in the disease prevention having placed it within a larger context.

In **Indonesia**, the healthcare system is divided in two sectors: the public (or state) and the private category. The public hospitals and primary health care clinics known as "Puskesmas", across the country are funded by the government. On the other hand, the private clinics and hospitals are managed by individual organizations or private companies. With the government's investment in public health, and despite decentralization of the healthcare since 2001, the quality of both private and public health facilities did not significantly improve. Documented studies have shown deficiencies in health workforce which resulted to poor quality of service and poor infrastructure especially in remote areas [6].

In 2014, the universal health care known as the Badan Penyelenggara Jaminan Sosial (BPJS) started in Indonesia. The BPJS aims to facilitate the consolidation of the existing insurance services for the 180 million people would be given a comprehensive care, covering all the citizens in 2019, that would include the civil servants, formal sector workers, and low-income individuals. This health coverage by the BPJS is designed to cover catastrophic expenses. The projected leading mortality conditions that are seen to continue until 2021 are stroke, ischemic heart disease, and diabetes, with increasing prevalence of these diseases projected through 2021[7].

In the pharmacy practice context, five pillars of action for strengthening the profession were established by the Indonesian Pharmacist Association (IAI) [3]. According to Hermansyah, et al in 2020 [8-10], the pillars are the short-term actions introduced by the National Committee of the IAI serving for the period of 2018-2022. These standards are serving as the guide that would continuously strengthen the profession. It is stated as follows: Pillar 1., speaks about advocating the philosophy of the responsible and professional practice of pharmacist wherein the responsible practice reflects pharmacist integrity, including moral and ethical value and becomes sensible to public health issues. The approach was ensured by IAI to be followed by creating and investing on a certification program for pharmacists, initiating credit system for licensure and re-certification, creating pharmacist group of interest – including the group of community pharmacist and the Young Pharmacist Group (YPG), and series of activities focusing on the mentoring, coaching and advocacy program for pharmacists. Pillar 2 is on improving the good governance of the organization by introducing leadership training for the member, setting up accountability measures for the good management of the organization including financial audits, established advisership through building an expert group for the organization, and assigning coordinators in each three geographical division of the country for easy monitoring of members. Pillar 3 is enhancing pharmacist recognition and acceptance in the community. The profession of the pharmacist has been recognized as the authorized person dispensing medicines, but the public and other health professionals were not aware of the potential roles of pharmacists beyond dispensing medication, particularly on the public health and clinical related issues. Thus, IAI would like to improve the pharmacist recognition by re-branding the image of the profession through partnership and networking with other stakeholders within and beyond health care sector. Policies will be introduced like the pharmacist wearing a coat and name badge during practice, signboard for pharmacist name and practice hours and involvement in Community events initiated by the MoH and participation in a disaster response activity. Pillar 4 is the contribution to the pharmacy education development and practice

ISSN No:-2456-2165

transformation. The IAI facilitates strategies to help improve the quality of pharmacy education and give priority to practice transformation by facilitating continuing professional education for pharmacist, promoting research-based evidence and using digitization and information technology in the practice.by developing a division for research and digitization of practice by creating data management system known as "SIAP [Sistem Informasi Apoteker] (Pharmacist Information System)" [11-13]. Pillar 5 states of the IAI active involvement in the policy-making and legislation. The implementation of this pillar has been seen in the active involvement of its leaders and members in the legislation making at the national and local level. The "Omnibus Law on Pharmacy", is the regulation that is currently promoted and drafted by IAI in the national parliament level which will develop the overarching law governing pharmacy sector in Indonesia, including those of the community pharmacy practice [12,14].

In terms of Pharmacy Education set-up, Indonesia has a range of pharmacy education programs that include a three-year diploma, undergraduate bachelor of science (BSc), pharmacist professional (Apoteker), masters, and PhD (Figure 1) [15,16]. Currently, more than 200 universities offer undergraduate pharmacy programs; only 42 offer pharmacist professional programs [16,17]. Apoteker, is the term used for professional pharmacist, and to become an Apoteker, students' study for five years, consisting of four years in an undergraduate pharmacy program and one year in a pharmacist professional program [15].

In the delivery of pharmacy services, Community Pharmacy are being regulated by the Ministry of Health (MoH)of Indonesia by issuing pharmacy standards (under the MoH Regulation Number 73 of 2016) and puskesmas level (under the MoH Regulation Number 74 of 2016), [18,20] serving as guidelines for basic provision of pharmacy services, outlining the minimum level of services that should be consistently delivered by the pharmacist in each setting in their community. The standards stated that pharmacists are encouraged to provide two elements of services namely (1) the supply and management of pharmaceuticals, health devices and other medical products and (2) clinical pharmacy services (Table 1). While the implementation might vary across sites, these standards have set the baseline for any pharmacist - related activities.

In **Vietnam**, the government in collaboration with the Ministry of Health (MOH) have tried to guarantee the supply of good quality medicines at affordable prices to their stakeholders [21]. Just like in many developing countries, people are going to their pharmacies as the first place for common health issues, where they are often a preferred—and sometimes the only—source of health care information and services in the community. There are around 40,000 established pharmacies nationwide, and these pharmacies are reaching even the most remote areas of the country [22]. As reported by World Bank et al. 2001, the practice of self-medication is common among the population, and the most frequently used healthcare facilities were the pharmacies, which approximately accounted as two-thirds of all health service contacts [23].The quality of pharmacy practice is also reported in other studies, that needed to be improved, especially in primary healthcare areas (e.g., the supply of antibiotics, STIs management, diarrhea treatment in children, tuberculosis care and control , and childhood acute respiratory infection management [24,25].

ISSN No:-2456-2165

The Difference In Pharmacy Practice Standard Across Sites In Indonesia			
Pharmacy Practice Standard	Conmunity Pharmacy	Community Health Center(puskesmas)	Hospital
Supply and Management of Pharmaceuticals, Health devices and other Medical Products			
Selection	✓	✓	✓
Planning process	✓	✓	✓
Procurement	✓	✓	✓
Receiving process	✓	✓	✓
Storage	✓	✓	✓
Distribution			✓
Recall			✓
Disposal	✓		✓
Controlling	✓	✓	✓
Documentation	✓	✓	
Administration	✓	✓	✓
Report	✓	✓	
Monitoring and Evaluation			
Clinical Pharmacy Services			
Prescription Assessment	✓	✓	✓
Medication Reconciliation			✓
Drug information	✓	✓	
Center			✓
Dispensing	✓	✓	✓
Counselling	✓	✓	✓
Independent ward round or collaboration ward round		✓ (Specific for inpatient care)	
Drug Therapeutic	✓		✓
Assessment		✓	
Monitoring of	✓		✓
Medication		✓	
Side Effect			✓
Drug Use Evaluation		✓	
Aseptic			✓
Dispensing	✓		
TDM			✓
Home Pharmacy care			✓
✓ Available in this setting			

Table 1: THE DIFFERENCE IN PHARMACY PRACTICE STANDARD ACROSS SITES IN INDONESIA [4]

To provide high quality health services, including improving access to reproductive health services for youth and identifying possible tuberculosis cases are some of the activities that need to be address and strengthened among private and community pharmacies. In order to achieve this goal, the need for building pharmacists' capacity as primary health care providers were the interventions that has been started since 2003 by PATH (Program for Appropriate Technology in Health), that began the project with a needs assessment design for pharmacy staff to assess their capacity to provide quality pharmaceutical services and to identify the range of services pharmacies offered. Based on the needs assessment results, PATH provide a technical assistance package for the pharmacy staff that are concentrated on client-oriented services. For the intervention to be effective, they collaborated with the DOHs and developed a training curriculum and toolkit. PATH also collaborated with provincial secondary medical schools to integrate the project's training curricula into the schools' training for pharmacy students [22]. The outcome of PATH's project resulted to the provision of a programme of training and supportive supervision to the pharmacists and pharmacy staff which become an effective way to improve the knowledge and practice of those health personnel at private pharmacies in Vietnam. The improvements have led to the potential route of having better community health care in the area [26].

The education system for pharmacists in Vietnam is quite complex. After graduating from high school, those wishing to become pharmacists can choose courses leading to one of the four qualifications: elementary diploma in pharmacy (ED Pharm, one year), secondary diploma in pharmacy (SDPharm, two years), college diploma in pharmacy (CD Pharm, three years), or bachelor of pharmacy (BPharm, five years) (Figure 1, Below) [27]. Pharmacy programs vary in length depending on the preexisting pharmacy training of the candidate and levels of the study. Pursuant to pharmaceutical laws, after obtaining a degree from pharmacy school, graduates can be employed immediately in most public or private settings. However, only those who have completed the BPharm program are considered fully qualified pharmacists. Additionally, a BPharm degree and a minimum of five years of practical experience are typically required to become a chief at a private pharmacy in an urban area; two years of practical experience are general requirements in rural areas.

In **Malaysia**, at first glance their healthcare system may seem confusing to handle because of its dual-tiered healthcare services. The government led and funded public sector provide a Universal Healthcare System (Public Healthcare) through tax financing. A Privatized Healthcare System co-exist with them at the same time, reimbursed by private health insurance or out-of-pocket payments. It is advanced due to extensive support from the Malaysian government through investment in hospital's medical infrastructure [28]. The quality of medical practitioners (doctors, surgeons and other medical staff) does not differ between public or private hospitals because they're trained and educated in modern day best practices in healthcare,

ISSN No:-2456-2165

with many having studied in universities abroad. The excellent medical facilities of Malaysia have become a destination for medical tourism, attracting foreigners looking for safe, reliable surgery or treatment for a variety of ailments [29].

The Pharmacy service in Malaysia started in 1951, governed by three main legislations protecting the profession namely, the Registration of Pharmacist Act 1951, Poison Act 1952 and Dangerous Drug Act 1952. Nonetheless, the pharmacist's professional role has not been explored but rather became limited due to the absence of the dispensing rights to deliver pharmaceutical care, thereby not optimizing their clinical knowledge and utilizing their pharmaceutical skills [30]. Hassali et al., (2009a) reported that the major barriers experienced in Malaysia, in the transformation of services from a product-based selling of drugs to a patient-oriented approach was the lack of dispensing separation in community pharmacy system where, the general practitioners (GP's) were given rights to dispense medications directly to the patients without the presence of a pharmacist. This practice has led to the role of community pharmacists to evolve only as information provider on nutraceuticals, personal hygiene and beauty products, homecare as well for complementary alternative medicines [31]. Shafie et al, 2012 commented on the importance of a critical policy change for Dispensing separation, benefits will include: reduction in medical costs, improvement in the population health and increase in the quality of health in Malaysia [32].

The educational system in Malaysia is offered by both public and private universities and consists of a four-year bachelor's degree. Upon finishing the four-year academics, graduates will have to undergo a one-year internship program as a provisional registered pharmacist, and in order to become a full-pledge registered pharmacist, he/she have to pass the pharmacy jurisprudence examination. In the studies of Hassali M.A. et al. in 2014, they mentioned about the type of graduate studies in Malaysia [33]. According to them, the Master's in pharmacy is available in six focus areas that include: clinical pharmacy, pharmaceutical chemistry, pharmaceutical technology, pharmacology, physiology, and social and administrative pharmacy [34].

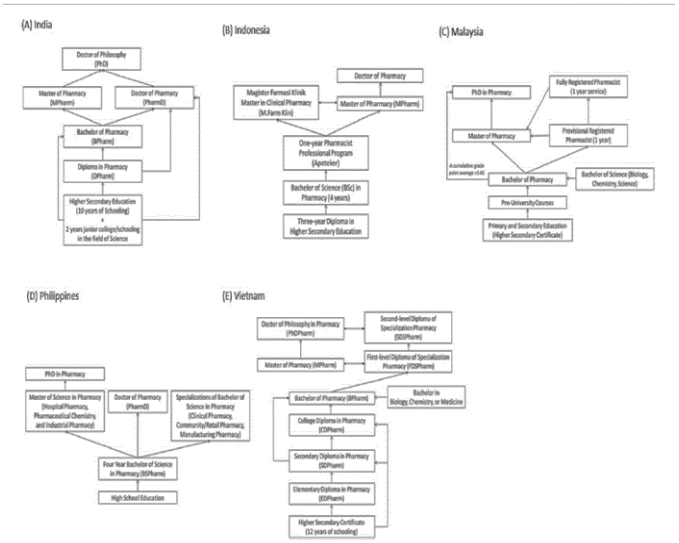

Fig. 1: System of Pharmacy Education in India, Indonesia, Malaysia, Philippines, and Vietnam R- Figure 1: Vietnamese figure was adapted from Vo TH, Bedouch P, Nguyen TH, et al. Pharmacy education in Vietnam. Am J Pharm Educ. 2013;77(6):114. [23]

In **India,** the healthcare system is the responsibility of the state, and is currently managed by both public and private (for profit and nonprofit) groups. The responsibilities of the federal government include giving directions for the policy-making, negotiating international health treaties, overseeing medical and health sciences education, ensuring food adulteration prevention, conducting quality control over drug manufacturing, ensuring national disease control, and administering planning, guiding, aiding, reviewing, and coordinating the activities of various provincial health authorities, as well as the provision of financing to implement national healthcare initiatives of the country [35,36]. Availability of primary care are provided for both the urban and rural areas, but inequalities exist in the quality of health care provided among rural and urban regions and also among public and private practice settings [36,37].

Pharmacy in India became a very important profession and more than 10,00,000 (Ten Lakh) registered pharmacists are now working in various positions playing their healthcare functions in the improvement of health of the nation [38]. The practice of pharmacy was classified into; Clinical, Community & Hospital Pharmacy & Pharmaceutical Care. The Indian government passed the Pharmacy Act of 1948 in order to control the pharmacy profession and education at the same time in 1948.Furthermore, to control the manufacturing, distribution & sales of pharmaceutical products, the Drugs & Cosmetics Act 1940 with rule 1945 was also passed.

Community pharmacy practice in India can be traced back to British India when allopathic drugs were introduced and were made available through drug stores towards the end of the nineteenth century [39]. During pre-independence era, the practice of pharmacy was highly unregulated and there were no restrictions followed on the pharmacy practice, especially in the community. Medical

doctors both practice the prescribing and the dispensing of drugs and most practitioners would train their clinic assistants in the compounding of medicinal preparations. Furthermore, these assistants were then became popularly known as "compounders", and their status, functions and duties were not defined properly and are inappropriately understood.

Sham Lal Nasa, further stated that Indian pharmacist forms a vital link between Doctors, Nurses and the Patients in the health care team with the ultimate goal of patient welfare and Patient safety [38]. They are responsible for supplying and maintaining drugs to their stakeholders as they work day and night in enhancing health care by providing patient counseling and drug information to health care providers and patients as value added services and not merely dispensing.

In the Indian education system, it was reported by Basak SC, Sathyanarayana D.,2009 that a variety of pharmacy degree programs are being offered such as: diploma in pharmacy (DPharm), bachelor of pharmacy (BPharm), master of pharmacy (MPharm), master of science in pharmacy [MSPharm] and master of technology in pharmacy [MTech (Pharm)], doctor of pharmacy (PharmD), and doctor of philosophy in pharmacy (PhD). The BPharm is 4 years of study in college in a university, and if the student wants to pursue an MPharm degree, an additional of 2 years can be earned of which the second year is devoted to research leading to a dissertation in any pharmaceutical discipline (pharmaceutics, pharmacology, pharmaceutical chemistry, or pharmacognosy) [40]. National Institutes of Pharmaceutical Education and Research (NIPERs) were created in India with the vision of providing excellence in pharmacy and pharmacy-related education. As of today, there are 6 NIPERS in India offering MS (Pharm), MTech (Pharm), and higher-level degrees. Students with an MPharm degree in any discipline can work toward a PhD with an additional minimum 3 years of study and research. The PharmD program constitutes 6 years of full-time study. The PharmD (post-baccalaureate) program is a 3-year program. The PharmD program was introduced in 2008 with the aim of producing pharmacists who had undergone extensive training in practice sites and could provide pharmaceutical care to patients [39].

In the **Philippines,** the healthcare system is one that is of high standard. The Filipino medical staff are highly trained, locally and abroad although, the facilities might not be as impressive as those found in high-end US or European hospitals. The Philippines has launched several major reform efforts to address inefficiencies and inequities in health care access and outcomes between socioeconomic groups in the past 30 years [38,39]. In spite of these insufficiencies, the healthcare system in the Philippines is steadily improving. Furthermore, the Philippines' state-subsidized public healthcare is quite good also, although disparity in health care delivery in rural areas is of significantly lower quality than at hospitals in large cities [40]. Remote locations may not have up-to-date equipment or adequate staffing levels, though the quality of health services will vary by facility and region [41]. Because of lack of access and the high cost of health care, some Filipinos rely on alternative medicine and faith healers [42].

The healthcare system in the Philippines is decentralized [40-42]. The system has three levels: national, provincial, and local. The national, provincial, and larger city governments are responsible for providing tertiary and secondary care. Smaller city, municipal, and local government units called barangay are responsible for providing primary care. Although the majority of trained health professionals remain in the country, many immigrate to other countries [42].

Health care financing is a public-private mixed system [40,41]. Since 1995, the Philippines has had a national health insurance agency, PhilHealth, but high household out-of-pocket payments persists [43]. The PhilHealth known as The Philippine Health Insurance Corporation, a government-owned corporation aims to provide universal coverage to its members; those that are legally residing in the Philippines (expats and foreigners) can join this system for a very low monthly, quarterly or annual premiums [44,45]. Public healthcare in the Philippines is administered by PhilHealth, it subsidizes a variety of treatments including inpatient care and non-emergency surgeries [46]. To top it all, the private healthcare in the Philippines is seen to provide more consistent care, and the facilities tend to be better equipped than those in the public.

In the Philippines, the hospital sector is described as highly segmented in nature. Hospitalization was driven by PhilHealth insurance coverage and determined by the people's socio-economic class. Those people with the PhilHealth insurance coverage are more likely to choose a private hospital for confinement (56 percent), and those without the Phil health insurance (28 percent) will go to public hospitals or infirmaries. Similar situation happens for those patients living in the urban area (52 percent) and those the belong to the richest quintile (74 percent) are more likely to choose private hospitals [47]. The disparity between those living affluently and those that are in a "hand to mouth existence" is also seen in the way Filipinos would have involvement in their treatment. Most looked at their condition in the context of their cultural beliefs (especially religion), socioeconomic environment, level of education, and familial relations and dynamics [48]. Despite this shortcoming, it is well known that Filipinos show a high percentage of doing self-medication, which was attested by the WHO household survey, in which the result showed that over half of the medications taken during an acute illness were self-prescribed, followed the prescriptions of other members of the family or friends having the same symptoms or prescribed by a non-health professional [49]. Self-care then becomes extremely dangerous in the Philippines because it is easy to obtain prescription drugs over the counter, and because of the proliferation of the "fly by night" or counterfeit medicines. Empowering patients with information and medication counselling are very taxing on the part of the healthcare

provider as it is often seen to be done as an extra mile, especially for those in the hospital setting.

The future prospects in the improvement of the Healthcare system in the Philippines is coming into the light. The state remains to aim for an efficient, effective and responsive health system that would deliver affordable and quality care to its people, and to realize this end, the Department of Health (DOH) pursued another wave of health reforms through the Philippine Health Agenda [50]. During the term of President Rodrigo Roa Duterte (PRRD) from July 2016 to June 2022, it brought forth many reforms in the health sector, especially with the passage of the Universal Health Care Act and the Malasakit Centers Act, as reported by Health Secretary Duque during the Duterte Legacy Summit at the Philippine International Convention Center in Pasay City [51]. PRRD signed into law the Universal Health Care (UHC) or Republic Act No. 11223 on Feb. 20, 2019, paving the way for the Department of Health (DOH) and the Philippine Health Insurance Corporation (PhilHealth) "to embark on a major health reform" in the country.

Pharmacy practice in the Philippines is governed by the Philippine Pharmacy Act (Republic Act 10918) ,in July 2016 with the following objectives: standardization and regulation of pharmacy education; administration of licensure examination, registration, and licensing of pharmacists; supervision, control, and regulation of the practice of pharmacy; development and enhancement of professional competence of pharmacists through continuing professional development, research, and other related activities; and integration of the pharmacy profession[52]. Stated in the provisions of the PPA, is the requirement for registered pharmacists to maintain active membership in an accredited professional organization (APO), that is the Philippine Pharmacists Association and the renewal of their Professional Identification Card every three years [53]. Article IV of RA 10918 stated all the regulations in the Practice of Pharmacy in the Philippines.

In the Pharmacy education setting, the attempt to standardize and regulate pharmacy education have been ongoing since the 1980s.The CMO 25 s 2021, defined pharmacy education as "a four-year bachelor's degree with a total of 169 credit units, equivalent to 4,515 hours". "The four-year BS Pharmacy curriculum consists of a good mix of general education courses, which have relevant applications in the profession of pharmacy, and professional courses, which provides a broad spectrum of both scientific and competency trainings and can lead to employment in a wider range of scientific fields" [54]. It also includes Experiential Pharmacy Practice Experience programs in the last year that involve assigning students to different CHED accredited affiliation establishments covering a minimum of 1,200 hours practicum (120 hrs. Institutional, 180 hrs. public health and regulatory pharmacy, 300 hrs. each for Community, Hospital and Manufacturing Pharmacy) which is a requirement prior to taking the PhLE.

III. GOOD PHARMACY PRACTICE SETTINGS

A. Rational Use of Medicines (RUM)

Rational use of medicines is clearly defined by the World Health Organization (WHO),1985 as stated - "patients receive medications suitable and proper to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community [55].

In dealing with the medication use, it has been identified through reports that the irrational use of medicines is considered to be a major global public health concern, where it encompasses any condition in which there is overuse, underuse, or misuse of medicines in the healthcare system. Several examples of irrational use of medicines have been determined such as the use of too many medicines by an individual especially in the case of geriatric patients (also known as "polypharmacy"); improper use of antimicrobials for non-bacterial infections resulting to Antimicrobial resistance (AMR); overuse of parenteral medications(injections) instead of a more appropriate oral formulations; over prescribing of medicines and not following appropriate clinical/standard treatment guidelines; proliferation of self- medication practices (on prescription-only medicines, especially on maintenance drugs); and patient's non-adherence to dosing regimens. [56-58]

World Health Organization (WHO) initiated the start up on the practice of rational use of medicines (RUM)in 1977, by introducing the audacious concept of the 'essential medicines list' — this is a core listing of drugs that are considered vital in meeting the priority health needs of the public, carefully chosen based on the criteria of safety, efficacy and cost-effectiveness [56,57].

The following are the summary of the core components and interventions of RUM as designated by the WHO listed as follows [56]:

Core interventions and strategies on the rational use of medicines

- Establishment of a multidisciplinary national body to coordinate policies on medicine use
- Use of clinical guidelines
- Development and use of national essential medicines list
- Establishment of drug and therapeutics committees in districts and hospitals
- Inclusion of problem-based pharmacotherapy training in undergraduate curricula
- Continuing in-service medical education as a licensure requirement
- Supervision, audit and feedback
- Use of independent information on medicines
- Public education about medicines
- Avoidance of perverse financial incentives
- Use of appropriate and enforced regulation
- Sufficient government expenditure to ensure availability of medicines and staff

The Rational Use of Medicines in the ASEAN Region in Jakarta, provided a document from the ASEAN Secretariat in 2017, which showed significant evidence that improving the rational use of medicines is a major challenge that must be addressed by the states' individual healthcare system, and by the ASEAN Member States (AMS) as a whole, through a harmonized approach as a Region. Almost all AMS recognized and considered that irrational use of medicines is a serious problem. It is perceived as a problem because it contributed to poor health outcomes (6 of 10 AMS) [56], causing substantial effect in the country's morbidity and mortality rate, that would result to a "domino effect" in the depletion of national health resources and the development of global public health threats such as but not limited to antimicrobial resistance. It was also pointed out that it happened in all levels of health care and that the problem reflects the lack of understanding of RUM among patients and consumers. This gives rise to a decision that RUM needs to be in the policy framework of the AMS to contribute to the overall goal of improving the health and quality of health care across the ASEAN. In order to accomplish this set goal, it is necessary that a political will to implement multiple interventions directed at different stakeholders, including prescribers, medicine dispensers as well as patients and consumers must be exercise. According to the reports of the Association of Southeast Asian Nations (ASEAN) 2017, the better use of medicines is anchored on well-supported national programmes and it will lead to greater health security among AMS, and will improve also the future economic benefits in terms of savings from reduced out of pocket spending and prevention of extra health care costs arising from the harm to patients and health care systems by the irrational use of medicines [56].

Country	Country Response
Indonesia	Irrational use of medicines still occurs at every level of health facilities.
Malaysia	A National Survey on the Use of Medicines (NSUM) by Malaysian Consumers in 2012 showed that 56.5% fully understand the proper use of their medicines.
India	The misuse of medications is widespread. The factors resulting in this involves all levels of the health system including regulation, enforcement and policy, healthcare providers and consumers [62].
Vietnam	Irrational use of medicines still occurs, with poly-pharmacy as well as overuse of antibiotics especially in rural clinics [59-61] Irrational use of medicines leads to (1) increased healthcare cost on the part of the patients and the society; (2) prolonged hospitalization; and (3) increased mortality.
Philippines	Aside from increasing out-of-pocket payment for the patients, irrational medicines use contribute to poor health outcomes.
Singapore	In Singapore, medicines are regulated as general sales medicines, Pharmacy Only Medicines and Prescription Only Medicines, based on their risk profile and indications. As healthcare facilities are readily accessible in Singapore, the majority of our population is able to obtain appropriate medical treatment and advice. To date, there is no data to assess the degree and nature of inappropriate use of medicines in the different healthcare sectors in Singapore. For the public health institutions, there is no evidence of serious irrational use.
Thailand	Irrational use of medicines is a major problem in Thailand for a long time now and this is one of the major factors that contribute to high drug expenditures. Thailand's drug expenditure as percentage of heath expenditure is 35% while in developed countries it is between 10-20%. During the World Health Assembly in 2006, it was mentioned that estimated rate for the irrational use of medicines in government settings is not less than 50%, so a big amount of drug expenditures will be saved after implementing Rational use of medicines policy. The policy makers realized the importance of RUM so the National Medicines Policy emphasizes this and appointed a national committee to promote the rational use of medicines. This year (2013), Rational use of medicines is one of the strategies of Ministry of Public health service plan.

Table 2: The problem of irrational use of medicines among ASEAN Member States [56,59-61,62]

* Question: "Why is irrational use of medicines considered as a major problem in the country?"

B. Pharmaceutical Care Services in Community Pharmacy

In the article of Hermansyah, Andi et al,2015, community pharmacy was defined as "a healthcare facility that operates under the full responsibility of a registered pharmacist and provides pharmacy services to the community. These services may include, but are not limited to, dispensing of prescribed medicines, self-medication advice and other roles providing consumer assistance in the use of pharmaceutical products" [63]. The pharmacist's role therefore has been diversified from merely dispensing medications to providing patient care in varied conditions from where their services are needed. In community pharmacy, the most common services provided by the pharmacists are patient education or counselling, and assessing patient's medication adherence. These are the traditional role being practiced in most countries by pharmacists, but in the recent years skilled and trained pharmacists are now in collaborative works with other health care professionals. Speaking about providing pharmaceutical care to the patient would mean a shift of practice in pharmacy from just being a drug product-oriented to the one that is patient-oriented to achieve definite outcomes that would improve patients' quality of

life. This patient-focused outcome based pharmaceutical care or pharmacy practice is aimed to optimize patient health and safety along with the proper use of medications, adherence and compliance to prevent disease and to ensure safe and effective drug therapy regimens.So in order to achieve this service to the patient, pharmacists need to assume varied role as that of a caregiver, a good communicator, teacher, leader, mentor, decision-maker , researcher and a manager, that would help him in providing individualized care to his patient. Looking at this scenario, some ASEAN countries mentioned in this paper have their best practices they can contribute in the pharmaceutical care services.

In **Indonesia,** the pharmacists have to undergo evaluation in compliance with the Indonesian Health Law No. 36 of 2009 in order to assure standard provision of pharmaceutical services at various health facilities which include Community Pharmacy. The pharmacist's qualification is determined whether they are capable to deliver services in a community pharmacy in accordance with the Government Regulation No. 51 of 2009, Standards of Pharmacy Services in Community Pharmacy and Good Pharmaceutical Practices (GPP). As reported in the article of Max Joseph Herman and Andi Leny Susyanty in 2012, "Most pharmacists have already understood their roles in pharmacy service, but to practice it in accordance with the standards or guidelines they are still having problems" [64]. In terms of readiness in providing immunization services among community pharmacists, a cross-sectional survey in the community pharmacies in Yogyakarta province, between August to October 2019 was conducted. The result showed that pharmacists have a good perception of providing immunization services but the lack of regulation, competency, and skills training becomes a barrier in providing immunization services [65].

The ongoing asthma management services offered by community pharmacists as initial involvement in the pharmaceutical care models for chronic diseases in India draw a positive outcome in patients who participated in the study [66]. Given the accessibility and preparedness of pharmacists' intervention in their community, they can readily involve themselves in the care of chronic diseases such as asthma, hypertension, diabetes and other minor ailments. Together with other health care professionals (pharmacist, midwife, nurse and physicians) in the area, and the need to incorporate patients' unique demographic profile, preferences for alternative medicines and family/social peer involvement were seen to help in the success of adopting this pharmaceutical care model in Indonesian community.

In **Malaysia**, a narrative review was published in 2019 regarding the involvement of Malaysian community pharmacists in pharmaceutical care in the country. It was reported then, that the common services oftentimes delivered is more on patient counselling and assessing patient's adherence on medications [67]. Several studies were conducted among diabetes patients in the community to observe and monitor the effect of the pharmacist 's intervention in their blood profile values such as the HbA1c, fasting blood sugar (FBS), and/or lipid profile values. It was found out that the pharmacist's interventions in terms of improving patients' knowledge and quality of life practices and even medication adherence have greatly improved. Other studies also have revealed that because of the Malaysian pharmacist's engagement in the pharmaceutical care of the patients, it resulted to positive impacts in clinical, humanistic an economic outcome in the lives of the patients [68-70]. The focused of most studies conducted is in the area of diabetes interventions, and other chronic conditions commonly seen in patients within the community has not been explored yet.

A cross -sectional study also was conducted by Loh, P., Chua, S.S. & Karuppannan, M. (2021), on the extent and barriers in providing pharmaceutical care services by community pharmacists in Malaysia. This article revealed that out of the 420 community pharmacists that responded to the online questionnaire, (53.3%) of the respondents reported that they were providing pharmaceutical care services to patients with chronic diseases. It was pointed out also that based on the principles of pharmaceutical care practice, the respondents were able to engage in patients' data collection (23.3%), performed medical information assessment (18.6%), formulated a drug therapy plan (9.3%), implemented a drug therapy plan (4.5%), and were able to do monitoring and modification of the patient care plan (18.3%). The result disclosed also that the lack of separation between prescribing by the physicians and pharmacists dispensing were perceived to be as main barriers to the implementation of pharmaceutical care services by a majority of the respondents (84.0%) [71].

In I**ndia**, the concept of pharmaceutical care remains unknown, as it was not being performed routinely by the community pharmacists because of unawareness to this practice. In the study of Berenguer B, et al (2004), they have given emphasis on the aim of pharmaceutical care which is to achieve rational and evidence-based pharmacotherapy, that could be beneficial for both the patient and society [72]. These can be achieved by independent single-proprietorship pharmacies in developing nations that can play a role in reducing mortality, providing continuity of care, and improving life expectancy of patients in their community [73].

Indian pharmacists are not keen in performing roles in healthcare services, and their pharmaceutical knowledge are underutilized. The management of the patient's therapy is in the hands of the physicians with the assistance of the nurses without employing the pharmacist's knowledge on pharmacotherapy. Thus, the Physicians, who are not familiar with the services offered by the community pharmacists may opt to decline giving authority to them, as they perceived them to be less qualified compared with the nurses or other health care provider.

A world-wide education for pharmacists on clinical orientation have been ongoing for a decade already but India is geared toward industrial orientation. A change in the curriculum of the pharmacy education is needed as mentioned in the study of Tumkur, A et al. (2012), to amend

the concepts of pharmaceutical care among programs that include the Diploma, Under graduate as well as the graduate studies such as the Master's degree in Pharmacy, and the Pharm D course. With these shifts in focus, the Pharmacy practice has changed the mindset of students of pharmacy towards the need of people and other health care professionals to become aware of their role in pharmaceutical care and patient counselling [74]. Thus, with these change in the direction of providing a patient-focused services to the community, the pharmacists have to upgrade their expertise not only in drug product orientation but towards a well-equipped clinical orientation to render patient-oriented care. Hence, Indian pharmacists are being trained in knowledge and skills in their bigger role to play in managing noncommunicable diseases (NCDs) which are increasing quickly in India.

In **Vietnam**, as reported in the article of Chuc et al. (2002) and Minh et al. (2013), they made mention about the attempts to improve pharmacy practice by introducing regulatory enforcement–education–peer influence and training-supportive supervision as part of the multiple interventions in managing infectious diseases [75,76]. According to Chuc et al.2002[75], "these interventions could reduce the frequency of dispensing of antibiotics and steroids without prescription in the management of acute respiratory infection and sexually transmitted diseases, while Minh et al.2013 [76] concluded that training and supportive supervision improved pharmacists' knowledge, and their dispensing patterns became more appropriate according to the guidelines for presentation of 'patients' with diarrhea.

Another milestone in the implementation of GPP in terms of pharmaceutical care services in Vietnam is the initiative in building the capacity of pharmacists to provide high-quality health services, including improving access to reproductive health services for youth and identifying possible tuberculosis cases. These then were initiated by PATH, a nonprofit global health organization in coordination with private pharmacies. From 2008 to 2012, PATH implemented an innovative program to enhance the role of private-sector pharmacists as primary health care providers [22].

In the **Philippines**, described as one of a developing country in Asia, the role of community pharmacists is not fully explored and utilized in terms of providing pharmaceutical care to their patients. This is due to inefficient health care system and less access to health care, aside from the fact that there is very weak public perception on the role of community pharmacists. They are merely viewed as drug sellers not someone capable of providing clinical services in areas such as that of medication management and reconciliation, preventive care services and patient education.

Uy (2014), reported that "administration of immunization was not authorized in the Philippines until September 2014 when the Food and Drug Administration collaborated with the Philippines Pharmacists Association (PPhA) to train and authorize FDA-licensed community pharmacists in drug stores to administer adult vaccines and other immunological products [77]. The community pharmacists are the most accessible health care provider that would help prevent the progress and further disability of patients through health promotion and preventive care services. The kind of services that would enable early detection and treatment of disease, and identify potential risks for early screening, diagnosis and treatment of condition.

One study reported that Filipino community pharmacist when assessed on their knowledge, skills and attitude towards delivering immunization were found to be involved only as vaccine advocates but not as immunizer themselves, but are said to be highly receptive to the provisions of appropriate trainings in vaccine administration. [78]. Although at present, the Philippine Pharmacists Association (PPhA) in collaboration with FDA seeks to provide sufficient training for Filipino pharmacists in the safe and effective administration of biological preparations through the Immunizing Pharmacists Certification program (IPCP), under the leadership of PPhA's National Program Manager Mr. Bryan Posadas.

An exploratory descriptive study was conducted by Lee, See, l. and Arce, F.V. (2020) on the management of minor ailments by community pharmacists in Cebu. According to this article, "community pharmacists play a vital role in the management of minor ailments and their clinical knowledge is vital in improving treatment outcomes of these ailments" [79]. The result showed that there were four (4) ailments commonly encountered and managed by community pharmacists in Cebu City, these are colds, cough, skin allergy, and diarrhea. They were knowledgeable in dispensing non-prescription medicines for minor ailments but had underdeveloped patient education and counselling roles. The absence of clinical guidelines, lack of ailment-specific training, insufficient clinical skills, and dominant patient self-selection behavior contribute to the challenging pharmacist-patient relationship in the management of minor ailments.

With these scenarios stated from the articles reviewed, it only shows that Filipino community pharmacists are currently undergoing the process of shifting their roles from that of a product-oriented view to a patient focused practice. In order to be successful in the implementation of the programs promoting pharmaceutical care, the pharmacist's philosophy of the practice is a vital requirement [80].

IV. CONCLUSION

Community pharmacists are highly trained professionals, that have central role in the delivery of medicines, and are within reached and accessible in communities. On the other hand, community pharmacy also is a highly regulated industry which operates under the dynamic health sector landscape that allows innovation and changes in contemporary practice. These features are the key drivers in leveraging the full potential of community pharmacy and pharmacist to meet the changing societal

needs and to expand their roles within the primary care system among the ASEAN countries mentioned in this article.

In conclusion, good pharmacy practice is an important aspect in the delivery of pharmaceutical care in all pharmacy settings, but mostly important to note is its significance in the community. The integration of pharmacists into healthcare systems has the potentiality to improve medication measures, improve social protection, and ensure safety and "Health for All". Capacity building programs for pharmacists in the health system should stand in place to strengthen the practice. With that being said, it is also important for pharmacists to constantly reassess and reposition themselves in the direction towards pharmaceutical care, to improve the patients' health access and improve the efficiency of health care delivery. Pharmacists should, therefore, maintain their professional competency at all times to ensure accountability and capability in all aspects of pharmaceutical context.

AUTHOR'S DISCLOSURE

The author declared no conflicts of interest.

ACKNOWLEDGMENTS

I gratefully acknowledge the great minds who put out pioneer research on various topics that led me to reference them. Their proficiency in their respective fields not only helped me put this paper together but also gave new insight on Pharmacy Practices of the ASEAN Countries mentioned in the article.

I would also like to thank my professor Dr. Erwin Faller for his patience and guidance, and for lending me his expertise that likewise helped me formulate this particular topic for my research. And most of all, I thank our Lord God and Savior for the wisdom and knowledge He has given to me.

REFERENCES

[1.] M. I. Mohamed Ibrahim, A. I Fathelrahman, A. I. Wertheimer, Chapter 20 - Comparative Analysis and Conclusion, Pharmacy Practice in Developing Countries, Academic Press,2016, Pages 449-467, ISBN 9780128017142, https://doi.org/10.1016/B978-0-12-801714-2.00020-4. Retrieved from https://www.sciencedirect.com/science/(https://www.sciencedirect.com/science/article/pii/B9780128017142000204)

[2.] GPP in ASIA. Retrieved from @http://fapa.asia/leading-the-good-pharmacy-practice-gpp-movement-in-asia/

[3.] Good Pharmacy Practice Guide. Retrieved from https://www.pss. org.sg/product/good-pharmacy-practice-guide

[4.] World Health Organization WHO Technical Report Series, No. 961, 2011 Annex 8 Joint FIP/WHO guidelines on good pharmacy practice: standards for quality of pharmacy. Retrieved from https://cdn.who.int/media/docs/default-source/medicines/norms-and standards/ guidelines/distribution/trs961-annex8fipwhoguidelinesgoodpharmacypractice.pdf?sfvrsn =fda75eb_2

[5.] The role of pharmacists in health systems. Retrieved from https://www.ipsf.org/article/role-pharmacists-health-systems

[6.] T.M. Andayani, S. Satibi, Pharmacy Practice in Indonesia. In: Fathelrahman AI, Ibrahim MIM, Wertheimer AI, eds. Pharmacy

[7.] World Health Organization. Indonesia. Retrieved from http://www.who.int/ countries/idn/en/.

[8.] Practice in Developing Countries. Boston: Academic Press; 2016:41-56.

[9.] Hermansyah A, Wulandari L, Kristina SA, Meilianti S. Primary health care policy and vision for community pharmacy and pharmacists in Indonesia. Pharmacy Practice 2020 Jul-Sep;18(3):2085. https://doi.org/10.18549/PharmPract.2020.3.2085

[10.] Promoting rational use of medicines: Core components. WHO Policy Perspectives on Medicines, No.5. Geneva, World Health Organization, 2002. Available at: http://apps. who.int/medicinedocs/pdf/h3011e/h3011e.pdf

[11.] World Health Organization. (2010). Medicines: rational use of medicines. [Fact sheet]. Retrieved from http://www.who.int/mediacentre/factsheets/fs338/en/

[12.] World Health Organization. World Medicine Situation. Geneva: WHO press; 2011.

[13.] WHO Policy perspectives on Medicines: The selection of essential medicines. Retrieved from http://whqlibdoc.who.int/hq/2002/WHO_EDM_2002.2.pdf.

[14.] Indonesian Pharmacists Association. The User Manual for SIAP Apps. Jakarta: Indonesian Pharmacist Association; 2020.

[15.] The Parliament of Indonesia - House of Representative. The Draft of the Pharmacy Law (Omnibus Law). Vol 2020.Jakarta: The Parliament of Indonesia - House of Representative; 2020.

[16.] T.M. Andayani, S. Satibi, Pharmacy Practice in Indonesia. In: Fathelrahman AI, Ibrahim MIM, Wertheimer AI, eds. Pharmacy Practice in Developing Countries. Boston: Academic Press; 2016:41-56.

[17.] World Health Organization. Indonesia. Retrieved from http://www.who.int/ countries/idn/en/.

[18.] LAM-PTKes. Independent Accreditation Institution of Indonesian Health Universities. Retrieved from http://www.lamptkes.org.

[19.] Association of Indonesian Pharmacy Higher Education. Retrieved from http://www.aptfi.or.id/dokumen.html.

[20.] Ministry of Health Indonesia. [The standard of pharmacy services in community pharmacy]. In: Indonesia MoH. Jakarta: Ministry of Health Indonesia; 2016.

[21.] Ministry of Health Indonesia. [The standard of pharmacy services in Puskesmas]. In: Indonesia MoH. Jakarta: Ministry of Health Indonesia; 2016.
[22.] N. X. Hung, 2009. Country Case: Vietnam. Retrieved from https://www.fip. org/files/fip/HR/2009/Vietnam.pdf
[23.] PATH, 2012. Building pharmacy capacity in Vietnam Improving knowledge and skills in primary health care. Retrieved from https:// path.azureedge.net/media/documents/CP_vietnam
[24.] World Bank, SIDA, AusAID, Royal Netherlands Embassy & Ministry of Health Vietnam (2001) Growing Healthy: A Review of Vietnam's Health Sector. Ministry of Health, Hanoi, Vietnam.
[25.] N.T. Chuc, M. Larsson, T. Falkenberg, N.T. Do, N.T. Binh and G. B. Tomson (2001). Management of childhood acute respiratory infections at private pharmacies in Vietnam. The Annals of Pharmacotherapy 35, 1283–1288.
[26.] K. Lonnroth, M. Karlsson, N.T., Lan, T.N., Buu and T.T. Dieu (2003) Referring TB suspects from private pharmacies to the National Tuberculosis Programme: experiences from two districts in Ho Chi Minh City, Vietnam. International Journal of Tuberculosis & Lung Disease 7, 1147–1153.
[27.] P.D., Minh, D.T., Mai Huong, R. Byrkit, M. Murray. Strengthening pharmacy practice in Vietnam: findings of a training intervention study. Tropical Medicine and International Health, https://doi.org/ 10.1111/tmi. 12062.volume 18, Issue 4. Retrieved from https://onlinelibrary. wiley. com/doi/10.1111/tmi.12062
[28.] T.H.,Vo, P. Bedouch, T.H., Nguyen. Pharmacy education in Vietnam. Am J Pharm Educ. 2013;77(6): Article 114.
[29.] Economic Transformation Programme; Healthcare. http://etp.pemandu.gov.my/Healthcare-@-Healthcare.aspx.
[30.] Asia Pacific Observatory on Health Systems and Policies. 2013 (Pg. 38) Malaysia Health System Review. Retreieved from http://www wpro.who.int/asia_pacific_observatory/hits/series/Malaysia_Health_Systems_Review2013.pdf.
[31.] Hassali, Mohamed A. , Mak, Vivienne S. L. , & See, Ooi G. Pharmacy practice in Malaysia. Pharmacy Practice and Research 2014.Volume 44, Issue 3. https://doi.org/10.1002/jppr.1024. Retrieved from https://onlinelibrary.wiley.com/doi/abs/10.1002/jppr.1024
[32.] M. Hassali, A. Awaisu, A. Shafie, and M. Saeed. 2009a. Professional training and Roles of Community Pharmacists in Malaysia: Views from General Medical Practitioners. Malaysian Family Physician,4, 6.
[33.] Shafie, A. A., Hassali, M. A., Azhar, S. & See, O. G. 2012a. Separation of prescribing and dispensing in Malaysia: a summary of arguments. Res Social Adm Pharm, 8, 258-62.
[34.] M.A., Hassali, V. S. L. Mak, and O. G. See, Pharmacy practice in Malaysia. Journal of Pharmacy Practice and Research. 2014;44(3):125-128.
[35.] Health Infrastructure, National Health Profile. 2011. Retrieved from: http://cbhidghs.nic.in/ writereaddata/mainlinkFile/11/pdf
[36.] I. Gupta, M. Bhatia. The Indian Health Care System. Retrieved from http:// international.commonwealthfund.org/ countries/India/.
[37.] India Brand Equity Foundation. Healthcare Industry in India Retrieved from https://www.ibef.org/industry/ healthcare-india.aspx.
[38.] Sham Lal Nasa. Development of pharmacy profession in India and amendments in Drug & Cosmetics Act 1940 J Appl Pharm 2018, Volume 10 DOI: 10.21065/1920-4159-C1-001.
[39.] S.C. Basak, D. Sathyanarayana. Community pharmacy practice in India: past, present and future. South Med Rev. 2009 Apr;2(1):11-4. Epub 2009 Apr 16. PMID: 23093872; PMCID: PMC3471162.
[40.] L.S. Lal, P. G. Rao. Clinical pharmacy education in India. Am J. Health-Syst Pharm. 2005; 62:1510–1511. [PubMed] [Google Scholar]
[41.] Asia Pacific Observatory on Health Systems and Policies. The Philippines health system review. Retrieved from http://www .wpro.who.int/philippines/areas/health systems/financing/philippines_health_system_review.pdf.
[42.] Ministry of Health. Philippines Pharmaceutical Country Profile. http://apps.who.int/medicinedocs/ documents/s19730en/s19730en.pdf.
[43.] E. Castro-Palaganas, D.L. Spitzer,M.M Kabamala. An examination of the causes, consequences, and policy responses to the migration of highly trained health personnel from the Philippines: the high cost of living/leaving-a mixed method study. Hum Resour Health. 2017;15(1):25.
[44.] Kwintessential. Guide to the Philippines - Etiquette, Customs, Culture & Business. http://www.kwintessential.co.uk/resources/guides/guide-philippinesetiquette-customs-culture-business/.
[45.] Healthcare in the Philippines. Retrieved from https://www.allianzcare. com/en/support/health-and-wellness/national-healthcare-systems/healthcare-in-philippines.html.
[46.] An Overview of the Philippine Healthcare System. Retrieved from https://www.internationalinsurance.com/health/systems/philippines.php.
[47.] R. F. Lavado, A. B. Sanglay-Dunleavy, Y. Matsuda, J. F. Jimenez. How Are Government Hospitals Performing? A Study of Resource Management in DOH-retained Hospitals PIDS Discussion Paper Series, No.2010-02, Philippine Institute for Development Studies (PIDS), Makati City. Retrieved from https://www.econstor.eu/bitstream/10419/126807/1/ pidsdps1002.pdf
[48.] M. M. Dayritt, 2018. The Philippines Health System Review. Health Systems in Transition Vol. 8 No. 2 2018. Retrieved from

https://apps.who.int/iris/rest/bitstreams/1151742/retrieve.

[49.] Batangan DB, Juban N (2009). Philippines Pharmaceutical Situation 2009 WHO Household Survey on medicines. Manila, Philippines, World Health Organization, Regional Office for Western Pacific http://apps.who.int/medicinedocs/documents/s17739en/s17739en.pdf.

[50.] Department of Health (2016a). Administrative Order No. 2016–0038. The Philippine Health Agenda 2016–2022. Manila, Philippines, Department of Health, Philippines (http://home2.doh.gov.ph/ais_public/aopdf/ao2016- 0038.pdf.Accessed July 4, 2022).

[51.] Kabagani, Lade Jean.2022. Duterte admin health care system 'people-centered': Duque. Retrieved from https://www.pna.gov.ph /articles/1175586

[52.] Department of Health (2016a). Administrative Order No. 2016–0038. The Philippine Health Agenda 2016–2022. Manila, Philippines, Department of Health, Philippines. Retrieved from http://home2.doh.gov.ph/ais_public/aopdf/ao2016-0038.pdf.

[53.] S. Kawaguchi, M. Hogue, D. Michael, N. Khanfar, M. Nile M. M. Lahoz, R. Monina, Y. Robles, Yolanda. Cultural Sensitivity and Global Pharmacy Engagement in Asia: India, Indonesia, Malaysia, Philippines, and Vietnam. American Journal of Pharmaceutical Education 2019; 83 (4) Article 7215.

[54.] Commission on Higher Education. CMO 25 s. 2021. https://ched.gov.ph/wp-content/uploads/CMO-No-25-series-2021-PSG-for-BS-Pharmacy.pdf/. Accessed June 10, 2022.

[55.] X. Nguyen - Hung, 2009. Country Case: Vietnam. https://www.fip.org/files/fip/HR/2009/ Vietnam.pdf

[56.] Promoting rational use of medicines: Core components. WHO Policy Perspectives on Medicines, No.5. Geneva, World Health Organization, 2002. Available at: http://apps.who.int/medicinedocs/pdf/h3011e/h3011e.pdf

[57.] World Health Organization. (2010). Medicines: rational use of medicines.[Fact sheet]. Retrieved frohttp://www.who.int/mediacentre /factsheets/fs338/

[58.] World Health Organization. World Medicine Situation. Geneva: WHO press; 2011.

[59.] Larsson M, Krnovall G, Nguyen TKC, Karlsson I, Lager F, et al. (2000) Antibiotic medication and bacteria resistance to antibiotics: a survey of children in a Vietnam community. Trop Med Int Health 5:711–721. [PubMed] [Google Scholar]

[60.] K. Lonnroth, L. M. Thuong, P. D. Linh, W. Diwan V. 1998. Risks and benefits of private health care: Exploring physicians' view on private health care in Ho Chi Minh City, Vietnam. Health Policy 45:81–97. [PubMed] [Google Scholar]

[61.] M. Larsson. 1999 Antibiotic use and resistance: Assessing and improving utilization and provision of antibiotics and other drugs in Vietnam. PhD Thesis. Department of Public Health Science, Karolinska Institute.1999.

[62.] G. Porter, N. Grills. Medication misuse in India: a major public health issue in India, Journal of Public Health, Volume 38, Issue 2, June 2016, Pages e150–e157, https://doi.org/10.1093/ PubMed/fdv072

[63.] A. Hermansyah, E. Sainsbury, and I. Krass. Community pharmacy and emerging public health initiatives in developing Southeast Asian countries: a systematic review. Health and Social Care in the Community (2016) 24(5), e11–e22.doi: 10.1111/hsc.12289.

[64.] M.J. Herman, and A. L. Susyanty. An Analysis of Pharmacy Services by Pharmacist in Community Pharmacy Penelitian Sistem Kesehatan – Vol. 15 No. 3 July 2012: 271–281. https://media.neliti.com/media/publications/21351-EN-an-analysis-of-pharmacy-services-by-pharmacist-in-community-pharmacy.pdf.

[65.] A. Nurfirda, S. A. Kristina, S. Hanifah. Readiness to provide immunization services among community pharmacists in Yogyakarta, Indonesia. Research Journal of Pharmacy and Technology. 2021; 14(5):2543-7. doi: 10.52711/0974-360X.2021.00448.

[66.] C. H. Setiawan, A. Widayati, D. M. Virginia, C. Armour, C. and B. Saini. The role of pharmacists in the pharmaceutical care of asthma patients in Yogyakarta, Indonesia: the patients' views. Pages 1017-1028 | 20 May 2019. https://doi.org/10.1080/02770903.2019.1622715.

[67.] M. Karuppannan, L.S.M. Syazwan Tana, and S. Gnanasan. 2019. Malaysian Pharmacists' Involvement in Pharmaceutical Care: A Narrative Review. Archives of Pharmacy & Pharmacology Research Issn: 2641-2020 doi: 10.33552/appr.2019.02.000528

[68.] M. Butt, A. Mhd Ali, M. M. Bakry, N. Mustafa N. 2016. Impact of a pharmacist led diabetes mellitus intervention on HbA1c, medication adherence and quality of life: A randomised controlled study. Saudi Pharm J 24(1): 40- 48.

[69.] P.C. Lim and K. Lim. 2010. Evaluation of a pharmacist-managed diabetes medication therapy adherence clinic. Pharmacy Practice 8(4): 250-254.

[70.] W. W. Chung, S. S. Chua, P.S. Lai, S. P. Chan. 2014. Effects of a pharmaceutical care model on medication adherence and glycemic control of people with type 2 diabetes. Patient Prefer Adherence 8: 1185-1194.

[71.] P. Loh, S. S. Chua, and M. Karuppannan. The extent and barriers in providing pharmaceutical care services by community pharmacists in Malaysia: a cross-sectional study. *BMC Health Serv Res* **21,** 822 (2021). https://doi.org/10.1186/s12913-021-06820-7

[72.] B. Berenguer, C. La Casa, M. J. de la Matta, M.J. Martin-Calero Pharmaceutical care: Past, present and future. *Curr Pharm Des.* 2004; 10:3931–46. 26. [PubMed] [Google Scholar]

[73.] I. Patel, J. Chang, J. Srivatsa, R. Balkrishnan. Mortality in the developing world – Can pharmacists

intervene? *Indian J Pharm Pract.* 2011; 4:1–9. [Google Scholar]

[74.] Tumkur A, Muragundi P, Shetty R, Naik A. Pharmaceutical care: need of the hour in India. J Young Pharm. 2012 Oct;4(4):282-6. doi: 10.4103/0975-1483.104374. PMID: 23493228; PMCID: PMC3573382.

[75.] N. T. Chuc, M. Larsson, N, T. Do, V. K. Diwan, G. B. Tomson T. Falkenberg. 2002. Improving private pharmacy practice: a multi-intervention experiment in Hanoi, Vietnam. Journal of Clinical Epidemiology 55, 1148–1155.

[76.] P.D. Minh, D. T. M. Huong, R. Byrkit R. and M. Murray. 2013. Strengthening pharmacy practice in Vietnam: findings of a training intervention study. Tropical Medicine & International Health 18, 426–434.

[77.] J. R. Uy. 2014. FDA to allow vaccination in drug stores soon https://newsinfo.inquirer.net/636567/ fda-to-allow-vaccination-in-drug-stores-soon#ixzz7ZgnBsbuc;@inquirerdotnet Twitter | inquirerdotnet on Facebook

[78.] I. T. Echano, C. Santigo, G. Q. De Guzman, G.Q. 2016.Awareness of Filipino Community Pharmacists on Immunization Delivery: A Key for Prepared Quality Service. International Journal of Pharmaceutical Science Invention ISSN (Online): 2319 – 6718, ISSN (Print): 2319 – 670X www.ijpsi.org Volume 5 Issue 8 ǁ December 2016 ǁ PP. 29-31.

[79.] S. Lee, and F. V. Arce, F.V. 2020.Management of Minor Ailments by Community Pharmacists in Cebu, Philippines –An Exploratory Study.Vol. 54 No. 5 2020 Acta Medica Philippina.

[80.] C. C. Agaceta, G. T. Diano,P. M. P. Lintag, and M. M. Loquias, 2013. Current Practices and Perceptions on Pharmaceutical Care of Hospital Pharmacists in Metro Manila. International Journal of Pharmacy Teaching & Practices 2013, Vol.4, Issue 4, 821-825.