

# PEN

*Pharmacy Education Newsletter*

# 10



International  
Pharmaceutical  
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A SCIENTIFIC / EDUCATIONAL PUBLICATION



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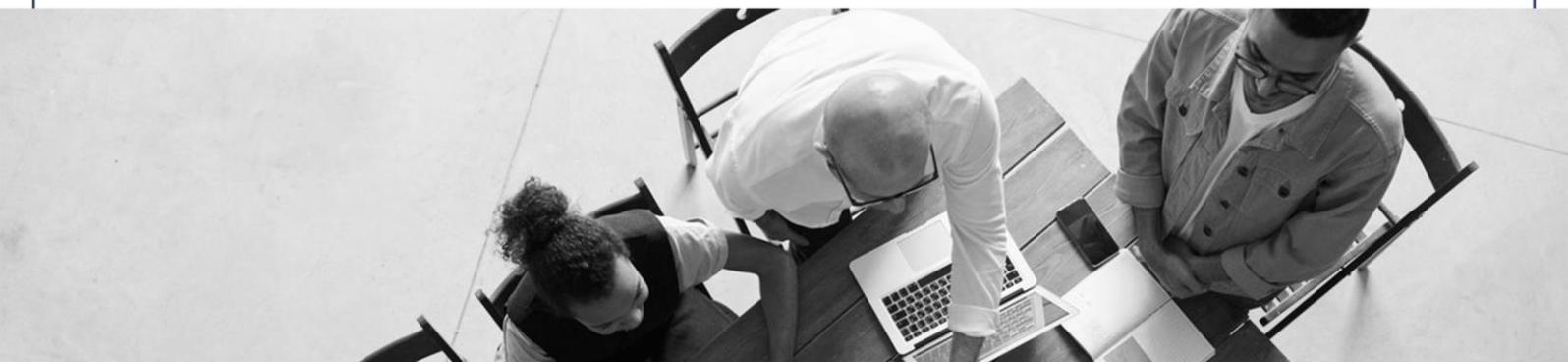
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I would like to  
*help* others

*By: Talbi Sara Sofia*

ASEPA, Algeria

*Winner of the IPSF International  
Volunteer Day Essay Competition*

"I would like to help others", I said. A sentence that could seem like a simple child's dream said unconsciously and whose temporal origin I cannot specify. Asserted itself more than ever when I made a career choice and chose to be in the field of health. Willing to dedicate my life to prove to myself that this sentence to which I was so attached and which wandered in my childish mind will remain the oath and the guiding thread of a lifetime. But I was far from thinking, as a freshly enrolled pharmacy student, that an association like ASEPA, would give me the opportunity to step this soon in the world of volunteering, help me spread in my humble level a glimmer of hope in this world and overall accompany me on the road of fulfilling my dreams.

Although, in the beginning, things didn't seem so simple to me. Indeed, the much-awaited lifetime opportunity turned out to be more overwhelming than I thought. This is why, for a first experience, I decided to work behind my laptop, on things I am passionate about: writing, using English, translating... What led me to obtain my translation co-coordinator position and marked the start of my journey. One that's all about being a great volunteer at the service of other coordinators and on the head of a committee that represents the last check-in point before sending out the most representative event's reports.

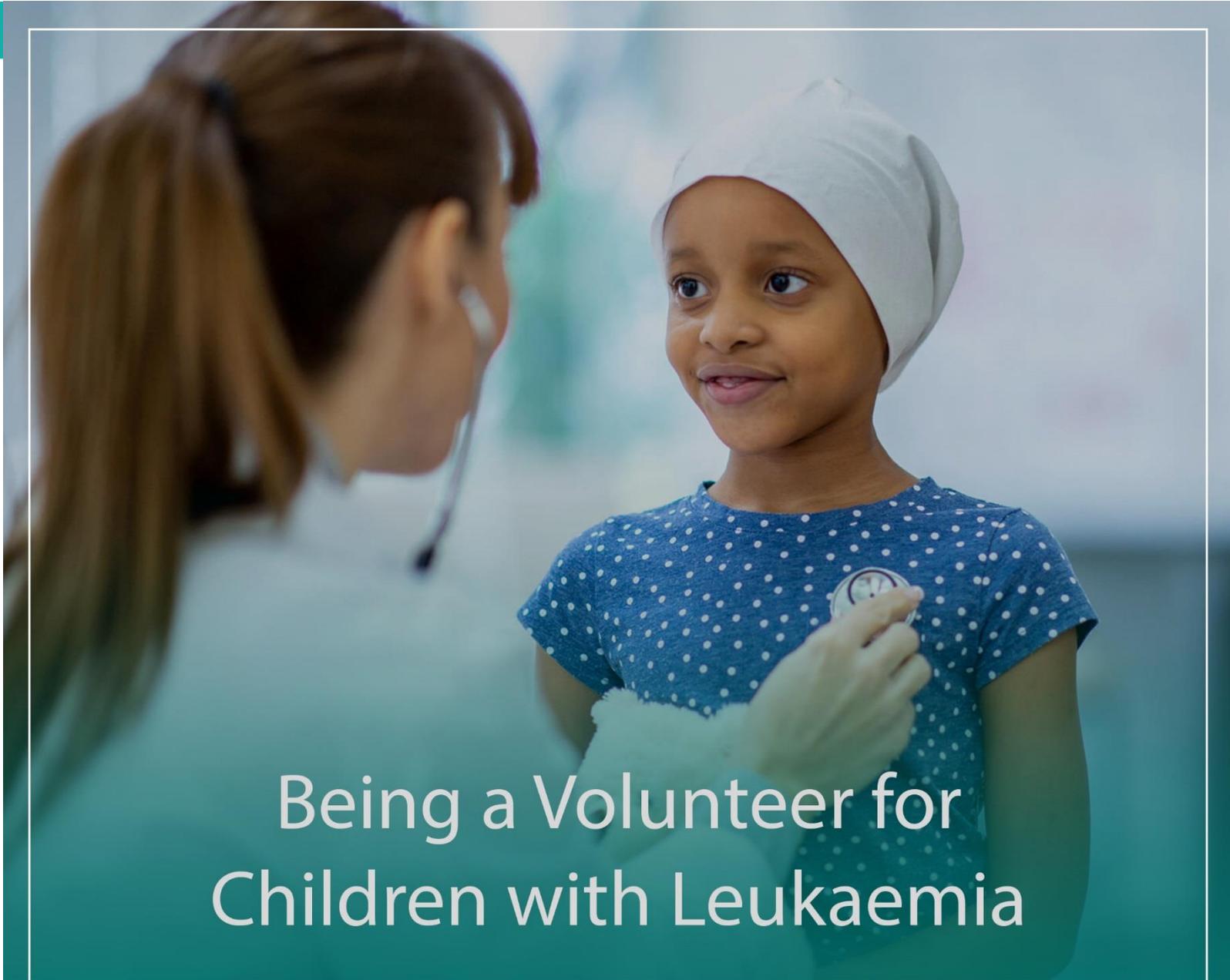
A responsibility that requires both working hard throughout the entire mandate and constant improvement in order to: give the best explanations and advice to the coordinators and establish the most faithful and perfected translation of their reports. A work that is therefore very endearing and which creates a very special bridge between us and an activity that we haven't actually organized, but of which we indirectly become the ambassadors at the international level.

I'm very proud to have taken on this mission, especially since these reports can be considered as mere writings when the stakes behind them are way more important. Firstly, they tackle for example public health issues raised during awareness campaigns and from which the Algerian society suffers. But they moreover have an impact on other communities around the world by hopefully inspiring other IPSF member organizations through the motivation and experience sharing that reports allow providing, thus taking volunteering to another dimension, one that goes beyond borders.

The global pandemic only made my experience more unique as it has shaken our lives forever and has hopefully changed us for the better as it made us realize that things should never be taken for granted and that showing gratitude should be a fundamental of our lives. Because even under normal circumstances not everyone's as blessed as we may be, so to make the world a better place the key is to stick together and leave more room for helping each other. I feel extremely grateful to have been immersed thanks to ASEPA in such an atmosphere where sharing positivity, helping our community, and being key players in public health has been our priority, especially at times when our contribution has been the most awaited.

We're often told to trust our instincts and I have to admit that fate may not be as hazardous as we tend to think. Indeed, what looked very much like my comfort zone turned out to be a more challenging task. On the other hand, given all the reports I have worked on, I've had the opportunity to discover all the activities that keep our association going and whose overall organization I've come to know now. This has empowered me to bring my fingerprint to other horizons, always animated by this need to be useful to others.

To conclude, I discovered through this journey that volunteering is the art of giving without expecting anything in return and that yet, it ends up bringing us so much back on a professional and human level. It also makes us go to sleep every night proud of the impact our actions have had on others and wake up every next morning more eager than ever to deepen that positive impact we generated the day before. It is working tireless hours in order to give the best of oneself while knowing that no material pleasure is to be gained in a world that very often seems to value nothing else but that, but one that we brighten up as volunteers with our love, compassion, and altruism, whilst being on the other side of the scales that we tip in our favor, which provides the real pleasure we seek for. So don't be afraid to take matters into your own hands, your coming to Earth isn't insignificant, so which side of the scales do you want to be on?



Being a Volunteer for  
Children with Leukaemia

*By: Ezgi Mertoglu*

TPA-YC, Turkey

*1st Runner Up in IPSF International  
Volunteer Day Essay Competition*

Leukaemia, also known as “blood cancer” among the public, is caused by uncontrolled proliferation of bone marrow cells. It can be deadly if not treated. It comprises 35% of all cancer cases in 2-10 years old cancer patients. It is caused by rapid reproduction of bone marrow cells. Excess bone marrow cells replace normal blood cells. Because of that leukaemia patients suffer blood loss and infection. Leukaemia can also spread to various parts of body. Causes of rapid reproduction of bone marrow cells are not known very well yet. But we know for sure that we must prevent children from interacting with carcinogens and also that the children should be fed organic and healthy food.

There are long-term treatments for leukaemia which involves chemotherapy and periodical chemical uptake. There is also another treatment called stem cell therapy. In today’s standards the chances that a patient will recover from Leukaemia are high, especially if said patient is diagnosed in early stages of cancer.

I am a volunteer of LOSEV (The Foundation of Healthcare and Education for Children with Leukaemia). This is a foundation that helps children with Leukaemia and their families. Their help extends from covering various expenses of said families to provide psychological support for children. They also own a hospital which is exclusive for child Leukaemia patients.

I couldn’t find a convenient community and volunteer activity in my school at the time. But I always wanted to do something for others. One day I decided to join LOSEV. I sent an e-mail to them, expressing that I would like to become a volunteer. They answered positively. So I had become a part of LOSEV.

The reason I chose LOSEV is an experience of my own. When I was 6 my family took me to hospital because I had been coughing intermittently. The doctor said them that I might have had Leukaemia. My family lived with doubt and fear for a week. At the end of that week it appeared that I didn’t have Leukaemia. I think this experience made me aware of such illnesses.

With a couple of other volunteer friends, we organized various events to introduce LOSEV to our school and to possibly recruit more volunteers. Although we weren’t quite successful, we had not lost our interest. We kept thinking about ways to inform people of LOSEV. As a volunteer we also had other tasks such as helping children with Leukaemia. Obviously we couldn’t help them in pecuniary means, as we were students who also

needed money, so we had to devise our own ways to help them. This mostly included entertaining children and giving them small presents. The first time we did that was in New Year’s Day. This was the first time that I truly understood what they felt, that I truly empathize with them. We may have done something great that day, but I felt terrible. I had understood that I was too late to begin volunteering, that I should have started earlier. I felt terrible because I had not helped these children before that point in my life.

Unfortunately, Leukaemia can relapse. Meaning a patient could experience it again after recovering from it. It is also important to have great morale and motivation to fight this illness. The patients must be constantly treated both physically and mentally.

Each individual has a right to live. This is especially true with children. So we must be sensitive and helpful about such subjects. We should raise awareness of others. We should draw attention to the fact that such illnesses are easily treated especially if patients are diagnosed in early stages of cancer, that it has symptoms such as fever, weight loss, anaemia etc. That way maybe we could save or at least improve another child’s life.

If I put aside all I mentioned above and look from a general perspective; we, as pharmacists, have already volunteered to help save lives. Even during the pandemic, we are still working with heart and soul so maybe one day we could help somebody. And I, as a pharmacist, am thankful to have a chance to change lives for better. I’m glad that I am a pharmacist.





# My volunteering Experience

*By: Yohana Laurent Ogigo*

TAPSA, United Republic of Tanzania

*2<sup>nd</sup> Runner Up of the IPSF International  
Volunteer Day Essay Competition*

Many children are suffering in rural areas with a lot of diseases, but none is interested about their life, challenges, and what they are passing through.

Once upon the time during my holidays in one village near Serengeti National Park in United Republic of Tanzania, I meet with a child suffering from skin disease for almost seven years now without any serious medical help. I was truly touched with his condition and that's where I decided to volunteer myself to take this huge load of children like Julius that are passing in hard condition, where they can't manage to help themselves because of the economic instability of their families..

With 9 years old, Julius has never attended school because of the diseases that he was fighting against since when he was 2. Julius family is really poor so they can't manage the treatment cost for their children. When I think about Julius and his family, I come to think about other children suffering and people not being aware about what they are passing through, the life they are living, their dreams that are cut out because of their condition.

These children need help from us. When volunteering, one does not expect the payment or any offer from the other, but we have to know that we are saving our own community, our own families, we are saving people's lives!

I chose to volunteer even though I had nothing in my pocket, building my motivation only from the unity and love that people surrounding me have. Every child, whether they suffer from a serious disease or not, dreams to become someone in the future, like a pharmacist, or a teacher, or even a nation's president. Most importantly, they dreamt to be healthy and happy.

In our hands, in our heart, for love and unity I believed that we can make their dreams, we can make them be what they dream to be, and in one voice, one power, unity and love and in one spirit, they can hear from us a word of hope that, You Can Be. That you can be happy, you can be free from your illness, you can be healthier and you can be what you dream to be.

For Julius and other children like him, they are living in what someone could call "survival mode". When you are in survival mode, there is not enough space for words like "we", or "us, or "community", there is only space for "me" and "I". I told myself that, even if I was never treated like this with anyone when I was crying for help,

but for me volunteering to help them to be healthy, happy, and hopefully make their dream come true. I thought "let me be to someone else what no one was to me."

My volunteering activity of helping poor children that are suffering from diseases that can be treated has been with many impact in my community: I inspired many young men and women, healthcare students, to take action by using our voice, love, and unity to change someone's life and turn their dreams into reality, to turn lost joy into hope. Now I'm founding an NGO which will help me to unite with other volunteers who are willing to join in my mission of changing many children lives, I look forward to reach out to stakeholders, so we can help our society, not only in my country, but across other countries in Africa as well.

Let me send a message to that kid, maybe in Africa, maybe someplace far overseas, maybe somewhere deep inside, a kid who has been targeted in the street or at home, that someone is watching and listening and caring. That there is a "we" and an "us", and that kid is loved and they are not alone. That what they have been dreaming to be "they can be" that someone, somewhere and have all they have been dreaming to.

Overall, it's an amazing experience. I feel that my time here helping children and forming this UcanBe foundation is well spent, I also felt that without this experience, I may have missed out on something huge, yes thinking I did give back to community, I honestly feel like the community just gave more to me. I would recommended getting out there in your community and getting involved. You never know where it will take you!.





**SEP** in *Serbia*

Discover the Hospitality of  
Serbia while Unlocking  
Lifetime Friendships

*By: Julija Stojković*

IPSF SEO of NAPSer, Serbia

In order to make a memorable experience for each incoming student for SEP in Serbia, we start with asking ourselves what we would like to experience as SEPer during the following summer.

The Balkan country of Serbia will offer you a vibrant SEP destination with rich history and culture; dynamic everyday life, followed by tasty traditional food which will make your stomach and heart thankful. This is what you - as a student, as a traveller, as a seeker for adventure - can expect. NAPSer's job is to show you much more – to help you make your memorable story and experience “Merak” in all its glory.

Believe me, it is not an easy task. Our work starts early in January with collecting all of the necessary information about areas of possible practice for placement of incoming students'. For more than five years we have offered SEP placements in Belgrade, Niš, Novi Sad and Kragujevac, throughout June, July and August. The SEPer are able to practice in Community, Hospital, or Clinical pharmacy, and participate in research at our University.

This requires a lot of time management, engagement of Local Exchange Officers' (LEO) and active communication. After all of this, our SEO selects the SEPer for the following summer.

I have never thought it could be so hard to decide to whom I will offer placement. Surprisingly, it is very difficult. For two months I was reviewing all of the applications and I was amazed by how many outstanding students are applying for this program. While reading through their interests in SEP, educational background, and even hobbies, it seems like (probably you will laugh now, but anyway) we are chatting in a cafe.

By the time you all arrive to start SEP in our country of Serbia, there will be no need for introductions, we will just grab another cup of coffee (believe me in Serbia we drink one cup of it for every hour).

After LEOs and SEO organize your practice placement for summer, we are getting on to the next big plan. NAPSer is very proud to represent the country known for hospitality, so our job is to make sure you experience our traditional customs, food and social interactions, as well as the modern way of living in Serbia. This is where our amazing SEP teams come into play!

We would like you to feel how it really is to be a student in Serbia. Our SEP teams and LEOs are in charge of

bringing to you this well-prepared plan! Are you interested yet? Well, apply for our summer SEP!

Almost every year in the mid of the summer, we organize the “SEP Weekend”, when we gather all SEPer in Serbia with our SEP team and LEOs in one place to meet and participate in social events.

Personally, I feel that SEP is the unique way to explore the world because your miles are measured in friends that you make on this trip and memories are made of the laughs and sunrises with them, spiced with a bit of tear when you say goodbye.





# Case-Based Collaborative Learning - The Effective Learning Method For Pharmacy Students

*By: Maxius Gunawan*

BEM FF UI, Indonesia

Pharmacy education produces an expert pharmacist that can be useful when in the community. Today, the pharmaceutical work is growing, so the performance of pharmacists must be competent in both industrial pharmacy and clinical pharmacy (Noori et al., 2015).

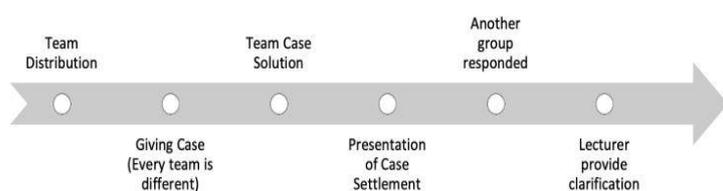
Therefore, a pharmacy study is needed to produce competent and ready pharmacists. Pharmacy education should be made in such a way that pharmacists can think critically and solve problems regarding pharmaceutical cases (Bin Saleh, Rezk, Laika, Ali, & El-Metwally, 2015).

Case-Based Collaborative Learning is one of the most suitable learning methods for pharmaceutical education. This method is a combined method of case-based learning and collaborative learning. Case-based learning is a method of learning where students are asked to solve cases and provide solutions about the case. While collaborative learning is a method of learning within the group to learn together (Hilvano, Mathis, & Schauer, 2015).

Case-Based Collaborative Learning is based on cases that often occur in work life and then the case is associated with supporting theories. In this learning process, students are required to master the basic theoretical concept first, then the students will develop and apply the basic theory to solve existing problems in the case (Hernandez, Priyadarshini Sambandan, & Sambandan, 2015).

In this learning process, problem-solving in the case isn't done individually, but done in a group. If solving a problem in a group case, more thoughts will arise so that brainstorming will be created to create the right solution to the problem (Hilvano et al., 2015).

*Sketch of the learning process using Case-Based Collaborative Learning is as follows.*



Students will be divided into teams. The lecturer gives the case and some questions about the case to each team where one team with another team has a different case but on the same topic. Each team is working on the case and some questions are given within the specified

time. Each team presented the results of the discussion in the team. When team one presents the results of the discussion, the other team can comment, respond, and/or add suggestions. In the end, the lecturer provides clarification and review on the topic. This learning method is suitable for all areas related with pharmacy, such pharmaceutical technology, pharmacology, clinical pharmacy, phytochemicals, medicinal chemistry, etc. Basically, every area in pharmacy is interconnected, so that the learning method does not limit the area of pharmaceutical sciences others contribute to support the learning area being studied pharmaceutical sciences: (Hernandez, Priyadarsinisambandan, & Sambandan, 2015). For example, while studying the area of pharmaceutical technology, to make a drug formula doesn't rule out the possibility to study pharmacokinetics and pharmacodynamics associated with drug delivery systems. Therefore, the scope of this method of learning is very broad but focused on a single topic. This can improve students' understanding of the topics covered.

Case-Based Collaborative Learning is an effective method for pharmacy student learning. This method is a method of solving cases adapted to the case in the world of work, so students also get an overview of the world of work in the pharmacy. In addition, this method is also conducted in groups that require collaboration with each other to solve the existing cases, because the world of work, pharmacists aren't required to work individually, but are required to work in teams.

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# INTERPROFESSIONAL EDUCATION PROGRAM

*By: Rizky Clarinta Putri*

Pharmacy Faculty of Universitas Indonesia

The World Health Organization (WHO) has identified Interprofessional Education (IPE) as an innovative strategy to face the challenges in global health (WHO, 2010). Based on the Centre for the Advancement of Interprofessional Education (CAIPE), Interprofessional education occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care (CAIPE, 2015). The basic aim of IPE is to improve collaboration and the quality of care for individuals, families, and communities (Barr, 2014). IPE differs from most traditional continuing education in that knowledge is largely socially created through interactions with others and involves unique collaborative skills and attitudes (Sargeant, 2009).

The IPE implementation is targeting the interaction between medicine, nursing or multiple health science, discipline and social work (Cameron, 2009). Interprofessional education was initiated in the 1960s by universities in Canada, the United States, Australia, and the United Kingdom. IPE program has developed rapidly in a developed country than a developing country (Herath, 2016). University is the most common academic institution that provides IPE Program and it's established in undergraduate level.

Medicine, pharmacy and dentistry were the top 3 departments which frequently established IPE Program (Zanotti, 2015). IPE Program effectiveness must be the main concern for every government in the world. It must use the right methods and curricula. Many things can affect the effectiveness of IPE program such as timing, length of study, and the number also type of professionals. Example of IPE program is at Hong Kong Polytechnic University that designed to conduct IPE Program as seminar basis for undergraduate nursing and social work student (Herath, 2016). Another example is at Universities Indonesia (UI) that designed IPE program for undergraduate medicine, pharmacy, dentistry, nursing and public health student. There are more than one IPE Program based class in UI. I have studied in three-class with a classmate from different faculties. I agree that IPE program is a good strategy for improving health care quality in the future.

IPE program provides activity than can increasing knowledge about other professional roles in the health system. It can increase empathy and respect between each profession. It can eliminate the gap and destroy the barrier between each profession. Nothing feels superior

to the other. Before I studied in IPE class, I didn't know so much about other profession duty. After joining the class, I knew how important dentist role in DVI or nurse as a supporter of the patient. IPE made merealize that all profession is special. Doctor or Dentist cannot heal the patient without the drug from a pharmacist. The drug cannot heal the patient if the patient does not consume it just in time. The person who can remind the patient for consuming the drugs is the nurse. The patient still cannot be recovered without enough nutrition, so it needs dietary for managing patient meal, etc.

Every professional health care in the health care system has its duty. IPE program is basic preparation for the student before facing the real world. Because of that, IPE Program should be established in every health education program in universities around the world.



It was me, my IPE classmate, and our lecture from dentistry faculty  
Source: Author Documentation



Me, and my disaster management classmate, also my lecture from medical faculty after finished our final project  
Source: Author Documentation

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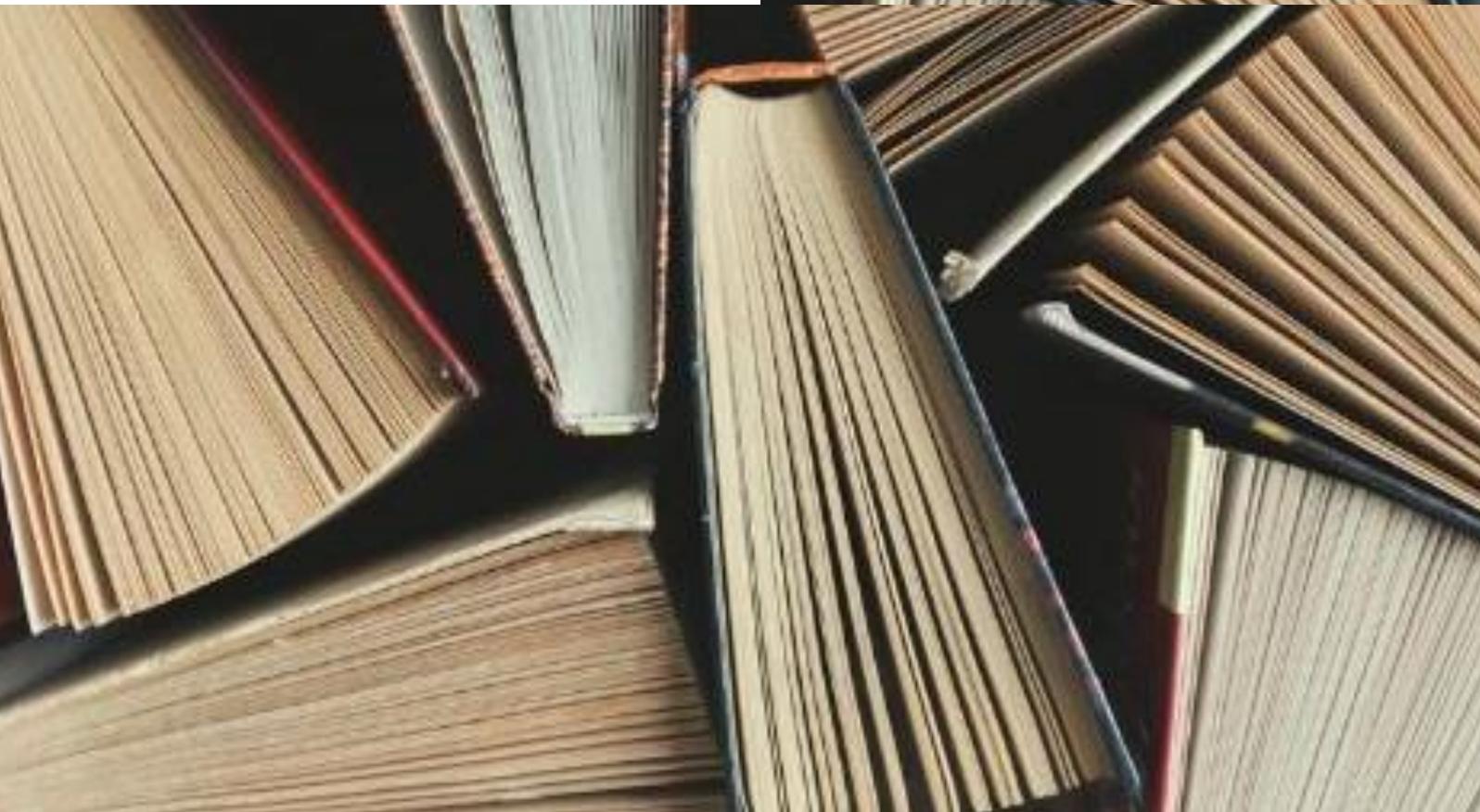
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# A MID-YEAR CAREER SPUR

*By: Eseosa Favour Iyagbaye*

PANS, Nigeria

Upon returning home from the six-day event, I suffered Post Symposium Depression (PSD). There was gloom, upliftment, reflection, sobriety, motivation and redefinition of self. All at once. I had first heard and read about the International Pharmaceutical Students Federation (IPSF) in the late days of August 2017. At that point, all in me was anticipation and hopes of never having to miss the ground-breaking 7th African Pharmaceutical Symposium in Lagos, in 2018.

After finally making it on the 17th of June, I was amazed, first at the wonderful people from across Africa and then the hospitality of the venue chosen. It still was not compared to the first feeling of connection I had with the IPSF as the Chairpersons of the African Regional Office and Reception committee, revealed about the association's mission.

The first day of the intra-African symposium kicked off with plenary sessions in which a key-note address concerning synergistic partnerships – as a catalyst for impact and innovations in healthcare – was given. As the lecture proceeded, I subconsciously began to envisage a lifelong journey of myself. In it, I was in a symposium of over 500 pharmacy students and young pharmacists across the globe. I networked and met people with whom I shared a similar vision and we collaborated towards solving health problems in our regions. We did this till our set targets were achieved. It did not end there. I then became a pharmacist, passionately involved in the international community – working to transform public health in Africa. In that, I had constraints and then partnered with esteemed organisations; which made my success story go on, and on, and on.

Well, my imagination quite explains Dr. Raimi-Abraham's lecture on synergistic partnerships; and I grasped it well enough. Of the several activities of the symposium, the two plenary sessions on Innovation and Sustainable Development struck me the most. Innovation, because I aspire to be a solution giver, digging deep into the root causes of medicines-related/general health problems within my region and transforming them into opportunities; Sustainable Development because it was in line with my ambitions in public health and policies. The discourse revealed all I needed as a soon-to-be pharmacist in order to influence decision-making in healthcare. Even more, I was awed at the African Union 2063 Agenda whose focus was on us, the youths, to

develop a new mindset and value system which would counter Africa's health challenges.

For me, the trigger was finally pulled when reputable members of the International Pharmaceutical Federation (FIP), gave an insightful workshop on Pharmacy Education. I got to know about the Nanjing statements – on Pharmacy and Pharmaceutical Sciences Education, developed by the FIP at the 2017 Global Conference in Nanjing, China. This meant a whole lot, being able to scrutinize (even as a third-year undergraduate) the standard of pharmacy education I was getting which in many ways determined the pharmacist I became.

There were bitter-sweet times and moments of hard decisions. I wanted it all; Every plenary, workshop, and professional skills event – which majority of the time, clashed. There was also the Regional Assembly (RA) I badly wanted to partake in. Nonetheless, something remarkable surfaced. I had missed day one of the Patient Counselling Event (PCE) upon attending the RA and showed up the second day hoping to catch up, but reluctant to participate in the competition. However, I did upon persuasion from a friend and amazingly, I emerged winner of the PCE (Beginners) competition after much effort. If there was just one thing I grasped from this, it was never to underestimate myself or shy away from challenging situations, but to seize any and every opportunity.

Back to my Post-Symposium Depression. As I write, I am in the confines of my space, reminiscing, planning, researching, thinking, and hoping. I am like a small pressurized pot, with water to the brim, boiling so turbulently and about to explode. The pressuring forces are my thoughts and ideas. I already have a goal. All I needed was the inspiration; and then the symposium came in handy.





# REKINDLING GLOBAL HEALTH: IT TAKES A TEAM

*By: Kelsey Merlo  
and Joe Lambson*

PharmD Candidates 2021

Both of us knew before starting pharmacy school that we wanted to get involved in leadership and global health. Joe had spent a few years in Madagascar and Mauritius on a humanitarian and service trip; he was looking for ways to give back to communities, who, in having so very little, had given him so much. Kelsey had spent some time in Central America building schools and providing much-needed health care services. Having caught the “global bug”, she was looking for ways to become more involved in global health.

Upon starting pharmacy school, we were both on the search for global health opportunities. At first, it seemed like our school lacked interest in global health, as only one event was offered in the very last month of the school year - a fundraiser raising awareness on diabetes in local communities. For months, we tried creating our events. We were met with many “no’s” and “can’t do” from our institution. We quickly realized we were approaching our goals in the wrong way. We were not collaborating with the correct organizations. We realized we needed to get involved with our local IPSF chapter.

When Kelsey was selected as the IPSF Vice President at the University of Utah with Joe as the Student Exchange Programme Coordinator, we knew we were in for a lot of work. Our chapter, once thriving, had hit a few years of being in a slump. We graciously accepted our positions, excited to bring about change and generate new ideas to get involved with our community. The first thing we knew we had to do was create a leadership board – we already learned that we could not do this alone!

We gathered fellow students interested in global health and together we brainstormed ideas for an entire summer, working and reworking the events we wanted to commit to for the upcoming year. Our focus was the IPSF motto: “Think Globally, Act Locally.”

We pulled off more events than our chapter had seen in years. We competed in the Vampire Cup for the first time, placing in the top 10! We also were able to send our APhA Chapter President to Spain as part of the Student Exchange Program, another first for our chapter in many years. We partnered with our school’s HIV PreP Clinic and opened up new opportunities for our pharmacy students to learn, get involved, and help serve an underserved population. Most notably, however, we developed our Refugee Outreach Event.

The goal of the Refugee Outreach Event was two-fold: to help refugees more quickly adapt to health care in the US

and to enhance pharmacy students’ abilities to work with a prevalent, yet unique population in our community. To plan this event, we combined our efforts with a local refugee organization in Salt Lake City and recruited all of our chapter’s APhA Operations. The refugee organization promoted our event at their weekly classes and activities. Additionally, they distributed our event flier to all of their potentially interested clients. Our APhA operations leaders provided the materials and volunteers for the health booths to provide services such as free blood pressure screenings and blood glucose testing, as well as educational materials, pillboxes, and even flu shots! Months of coordinating and planning were clearly worth the effort come the day of the event.

The first year our chapter held the Refugee Outreach event, we were extremely humbled. We saw a group of individuals who knew little of our health system. Phrases such as diabetes, hypertension, and balanced diets, were foreign concepts to many individuals we encountered. Joe had the pleasure of escorting one attendee around the entire event, providing translation from English into French. After a lengthy conversation on the importance of receiving the annual flu shot, the attendee immediately began contacting his family members. He wanted them to come and receive their flu shots before the event ended. In all, we saw about 50 clients that the first year.

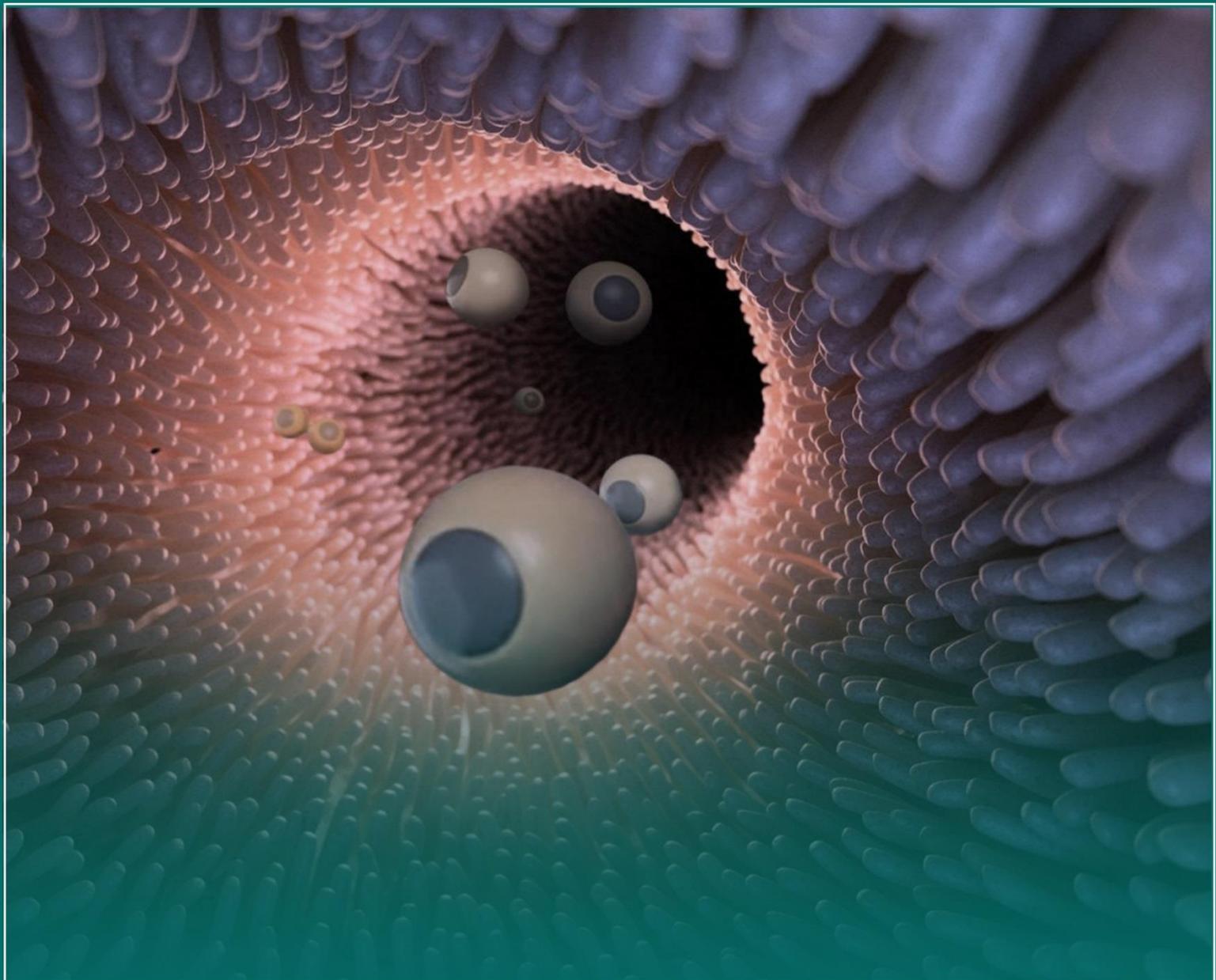
In our second year of holding the same leadership positions within our chapter, we were asked by the local refugee organization to return and host another health fair! With a new flyer and an already working plan, we had an even greater turnout than the previous year! We actually ran out of vaccines before the end of the event thanks to the local refugee organization, who had made the flu shot a requirement for their clients to attend certain activities. Such a requirement made attendees much more interested in learning about how a flu shot works, why they’re important, and what it means for them personally. This was a great chance to see from the previous year, where many individuals were fearful of the flu shots and refused to go near the table at all. We were also able to provide almost 500 hygiene supplies that we had collected during the prior spring semester.

It has been so much fun partnering with this local organization, meeting new people and hearing their stories. It has also allowed us to advocate for the pharmacy profession by showing how accessible and valuable we are as healthcare providers.

Our experience in hosting a Refugee Outreach Event has been incredibly impactful to our community and quite meaningful to our students. Both years, we've had many student volunteers express how much fun they had helping out at the event and how their interest in IPSF has grown as a result. The event proved to be an amazing volunteer opportunity for our students at the University of Utah College of Pharmacy because they have the opportunity to develop cultural sensitivity while also practising clinical skills that provide care to those in greatest need. Serving our local refugees has been life-changing because we have been able to see the initial fears and assumptions around healthcare begin to shift within this community, and have helped these patients develop a growing interest in their health.

In an effort to ensure sustainability for years to come, we have had co-chairs from younger grades participate and learn with us. We hope this event will allow our chapter to continue to build relationships with the local refugee organization and provide students with opportunities to foster their unique skills, such as cultural awareness, speaking another language, or simply developing a better understanding of pharmacy as it relates to global health at the local level.





# Microbots in Madrid

*By: Melanie Hunter*

During my SEP experience at the University of Alcalá near Madrid, Spain, I learned about some of the current obstacles facing patients and healthcare professionals worldwide. The chemistry department there has been researching micromotors, a novel healthcare technology, which presents itself as a new solution to a myriad of global health issues. I was privileged to gain insight into how microbot technology promises to be a critical link in expanding access to clean water, improving diagnostic and laboratory tests, and employing a more precise targeted drug delivery.

Micromotors are microparticles with autonomous movement capabilities that enable them to achieve various tasks with precise engineering. Their ability to move, or micro mix their environment, increases the likelihood they will reach their targets when compared with a static drug particle obeying simple diffusion. The movement of these particles can be random or carefully controlled. There are various methods of propulsion, ranging from hydrogen peroxide fuel to ultrasound-facilitated movement and magnetic manipulation.

Our bodies are full of fluids, cells, and other particles that move and create their own currents and pathways to carry out necessary physiological processes. Examples include microtubules, individual cells, and even sperm. Micromotors are a scientific approach to mimic these natural movements and improve the efficacy of processes that have, until now, relied on static particles. These particles can be engineered in our labs and offer promising solutions to our most pressing health issues today.

One such example of a global health issue, is ensuring that hygienic drinking water is available worldwide. The World Health Organization estimates that less than 2/3 of the world's population has access to clean water, and approximately two billion people have a water source that is contaminated with feces.<sup>1</sup> These shocking statistics do not even begin to cover other problems such as oil spills, bacterial-infestations, and heavy metal contaminants that pose constant threat to our most fundamental resource. Many available purification techniques leave harmful residues in the water, are expensive, or are becoming ineffective due to bacterial resistance mechanisms.

Micromotors can be engineered to target specific water pollutants such as bacteria, heavy metals, and other organic and inorganic material.<sup>2</sup>

A magnetic layer, such as iron, can be added to the microbot, serving two purposes. First, it can guide the movement of particles with a magnet. Second, it allows particles to be retrieved from the water after purification. This application is attractive because of the low cost, ability to remove a wide variety of pollutants, and it provides the ability to separate the bots and contaminants from the water after use.

Another important application of this technology is in laboratory tests and diagnostics. Creating inexpensive and timely lab tests has always been an issue, in addition to finding a way to isolate the markers of interest for analysis. Micromotors provide an interesting solution to this problem as they can target specific molecules, proteins, or cells, and can transport them to other locations using propulsion methods. Micromotors can also detect biomarkers using fluorescent "on-off" technology.<sup>3</sup> Using this kind of mobile technology expedites the test results and ensures a higher recognition rate than a static counterpart.<sup>3</sup> Micromotors have also been placed inside red blood cells to mimic a natural micromotor.<sup>4</sup> This kind of approach ensures that the motors will be compatible with natural fluid samples, and eliminates some barriers to performing these tests.

Microbots have shown promise in the detection and collection of cancer cells. Microbots can be equipped with monoclonal antibodies (mAbs) that can recognize antigens, which are surface markers that are specific to cancerous cells. Once the antigens and mAbs bind, the microbots can carry the cancer cells away. One group found that this kind of microassay could be done in as little as 5 minutes, making routine and early cancer screenings a convenient reality.

Once a disease has been diagnosed, microbots can also be used as a drug delivery tool. Drug delivery using is appealing for several reasons. First, microbots can be engineered to detect specific target cells and pathogens and move autonomously throughout the body to find them. Secondly, drug release can be timed to begin when the microbot recognizes or binds to the target, thereby affecting only the desired cells and tissues. This can help eliminate many unwanted systemic side effects of medications, such as those associated with oncologic chemotherapy, as the bots will only release the damaging medicine in the presence of cancerous cells. This targeted drug release has been proven in vitro using pH facilitated release of doxorubicin when targeting cancer cells.

Overall, there is still a lot of work to be done to make micromotor technology a part of daily life. However, there is significant potential in the ability of micromotors to improve current water purification methods, streamline diagnostics, and more efficiently deliver medications. These areas are significant public health concerns, and further research and implementation of micromotor technology can increase our ability to perform essential tasks globally.



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# HITTING THE DEEP END

*By: Derrick Bundi*

KABARAK UNIVERSITY PHARMACY SCHOOL

How did you celebrate 10th October 2019? Well, in my country of Kenya, the 10th of October is a national holiday in honor of the late second President of the Republic, who is coincidentally, the founder and former chancellor of my university; Moi Day was renamed Huduma Day (Swahili for volunteerism). However, did you know that October 10th is also World Mental Health Day (WMHD)? As we shift focus to achieving the United Nations' Sustainable Development Goal 3: Good Health & Wellbeing this decade, where is the position of mental health? Where are we positioned as pharmacists or pharmacy students in dealing with the mental health of our patients and peers? The theme for WMHD 2019 was "Mental Health Promotion and Suicide Prevention"; coincidence? I don't think so! In fact, suicide is the third leading cause of death according to WHO. Many of these deaths can be prevented if mental health is continually made a priority.

Ranking sixth in Africa in the number of people with depression, a report by WHO indicates that 4.4% of Kenyans (about 1.9 million) were depressed in 2016, an 18% rise within a decade. It is not surprising that depression is the leading cause of disability and can lead to suicide at its worst. Despite all of these concerns, a meager 0.01% of the Kenyan health expenditure is allotted for mental health.

Everytime I walk around campus; I see smiling faces, serious faces - I see laughter, sorrow, even anger! But there is that which I do not see, their inside feelings. I wonder if they are depressed? Maybe, Maybe not. "Smiling faces with souls that are crushing from the inside" is an apt description of most youth in Kenya nowadays. As pharmacy students, we need to create the space whereby "It is okay, not to be okay". Mental health is the new epidemic, and it is eating us from the inside. In our training to become future pharmacists and as we step up to provide better pharmaceutical care, let us also develop skills of creating a space for those in our society suffering emotionally and psychologically.

Our environment and daily activities are the biggest determinants and risk factors of mental health. I personally have a phobia for dark spaces, termed nyctophobia. One thing that people with nyctophobic experience, is the fear of what could happen in the dark. Mental health is my new dark space and I have a fear that if we do not deal with or manage mental health properly, it will be the scourge of the millennial generation. As we prepare to join the health care, the first step in dealing with mental health will be creating awareness either through social media or through advocacy campaigns. Let us dive right into it even within our local federations. This is the new story in our small talks. We are changing the whole narrative. Once we make it a part of us, only then will we know how best to deal with it.

Additionally, a lot more energy should be directed at answering those questions we have. Transformative and goal-oriented research is the new bee in the bonnet! Yes, molecules and cells are as equally important as our psychological and emotional states. Let us embrace this new focus and achieve new milestones in the pharma sector. Through research, we will be able to cut through the nitty gritty of depression as a form of mental health and get more involved in managing it. By seeking answers through research, we will be able to harness the power of technology in dealing with mental health; creating solutions in managing mental health issues effectively. Let us get into mental health research, shall we?

Having been raised in a society where it is unacceptable or shameful for a man to let out emotions in order to uphold masculinity and feel a sense of belonging to society, I feel it is high time this message reaches out to all men. When our sociology professor told us he cries as a form of dealing with stress, people burst out into laughter. Yeah, you heard that right, an African man in tears: this is a message to the children. A simple, rather obvious, but very important message: CRY! I'll prick your toxic masculinity by saying that it is okay to cry and let it out. In the words of one of the greatest

novelists, Charles Dickens (1861), "heaven knows we need never be ashamed of our tears, for they are rain upon the blinding dust of earth, overlying our hard hearts". It is 2020, let us bury the stereotype of "dying" with our issues and embrace the new age of seeking support, emotional release, and managing depression and anxiety, as forms of mental health, differently. Hide no more tears, healing rolls down your cheeks!

Finally, pharmacy school and the work environment can be quite an uphill task and are filled with immense pressure. Some of us have probably experienced their lowest lows as we build our career to become pharmacists or in practice. The biggest joy would be sailing through the worst storms with our peers and landing on the shore together. I challenge us all to get involved in peer counselling as a form of social support. Identifying a mental health patient can be cumbersome as some act normal, but the most crucial thing is we keep tabs on all the people close to us. Let us support those suffering mentally by providing avenues where one can come and let it out without being judged or discriminated against. Let us provide a space for everyone, may it be on campus or at work. Charity indeed begins at home! No more suicide notes, no more surprise deaths! Achieving good health and well-being in style.





**IPSF STUDENT EXCHANGE  
PROGRAM (SEP) IN THE  
LAND OF A THOUSAND HILLS**

I believe that one of the most beautiful experiences that being part of IPSF affords is the student exchange program. I longed to experience IPSF-SEP and when I finally got to participate in the 2019 summer SEP my expectations were met and my mind was blown. I have read so many things about the Land of a Thousand Hills and I finally got the opportunity to go see for myself what is true about all the beautiful things I heard regarding Rwanda.

I had a caring SEO and the most amazing host family. I was welcomed with a cinema visit sponsored by my host family to see "The 600", a true life narrative of the survivors of the famous Rwandan genocide. I spent about 7 weeks in Kigali, Rwanda. Kigali is a beautiful, clean, and green city. Rwandese are very warm, hospitable and accommodating people. I had my exchange program placement in the King Faisal Hospital, Kigali. The hospital staff were very accommodating and willing to teach me and also allowed me to learn a lot of things on my own.

I got to work with different pharmacists, medical doctors, nurses and other health care professionals. I learnt the approach of doctors in accessing patients, discussing their treatment modalities and prognosis as I participated in various ward rounds in the medical, paediatric, maternity, and intensive care units. I got to witness the insertion of some birth control methods when I worked alongside a gynaecologist. I visited the surgical unit as well and shadowed many anaesthetic and surgical procedures which I found very fascinating. I visited the oncology unit and prepared drugs for chemotherapy. I visited the haemodialysis unit and witnessed the dialysis procedure. I visited the emergency unit and saw the common medications used in cases of emergency. I visited the HIV clinic and learnt the treatment regimen used in Rwanda for HIV treatment. I saw how hospital solutions were prepared and I participated in the preparation. I worked in the general hospital pharmacy unit for preparation and dispensing of medications for both inpatients and outpatients. I also dispensed surgical equipment in the general hospital pharmacy unit and the theatre pharmacy.

During the course of my IPSF-SEP experience, I was able to practice most things I was taught in school about the role of a clinical pharmacist. I learnt so many new things as I was exposed to various units in the hospital.

IPSF-SEP was an opportunity for me to have an international exposure to the practice of Pharmacy and explore my interest of discovering how Clinical & Hospital Pharmacy is practiced in other parts of the world, knowing full well that as similar as pharmacy practice is all over the world, there are various differences and distinguishing competencies in different countries and regions.

One of the highlights of my stay included when I got to visit a few places, which included a museum showing the cultural and colonial history of Rwanda, the Rwanda genocide memoria, and a company known as Zipline which uses drones to deliver blood products and medications to district hospitals.

Now, let me tell you why and how you can aim and plan towards IPSF-SEP, even if you do not feel financially ready for it. Decide in your mind that you want to go and begin to set small part of your savings aside ahead of time; could be months or years depending on how much you can put aside and how long you have left to remain an IPSF member, since membership is allowed until 4 years post-graduation from Pharmacy school.

An alternative or complementary approach to saving for SEP, is to start applying for grants and sponsorship after you get selected for SEP. The IPSF-SEP development fund grant is one of the opportunities you can apply for. You may never get enough grant or sponsorship to fund your entire trip, but it can lift a fraction of the financial burden off of you.

Also, if you plan to attend the IPSF world congress, like I did last year, you can plan towards having your SEP in the same country around the time of the world congress. I was able to participate in the 2019 IPSF world congress during the course of my IPSF-SEP in Rwanda since the world congress took place in the same country.

So, if there is a country you have always wanted to visit. IPSF-SEP can be your opportunity to not just visit it but also to learn their pharmacy practice system while at it. If you love a combination of a green (natural) environment with a hospitable and accommodating people, then Rwanda could be your dream SEP location.

By the end of my IPSF-SEP experience I had made new friends, met new acquaintances and accumulated an unforgettable and exciting wealth of experience. Indeed my 2019 summer IPSF-SEP experience brought me closer to my dream of being a clinical and hospital pharmacist.



# **The Role of Pharmacists in Strengthening Health Systems in Nigeria**

Over the years, the global burden of diseases has been shifting rapidly and in unpredicted ways. Evidence of this is apparent in West Africa where the worst Ebola outbreak in history led the United States to mount one of the largest ever and most complex responses to any global health crisis. This is more than a tragic story of the unyielding spread of a deadly virus; it tells of the breakdown of health systems— inadequate facilities and staff, as well as poor investments – in already fragile environments.

Building a healthcare system that puts people at the center of their own care and using all available resources as efficiently as possible has become a consistent goal of most governments. Achieving this goal requires different health professionals to work in collaboration with each other to meet the health needs of patients. In order for that to happen, the Nigerian government must work with all key professional groups, in order to utilize all available resources of the system efficiently. Additionally it is important that pharmacists be recognized as professionals that play a vital role in achieving this.

According to the World Health Organization, a health system is a structure that “consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health”. Research on health systems has been rapidly growing worldwide and, with methods that have become more rigorous. While there is extensive literature on health system strengthening and on evaluating their performance, there are many challenges that the health systems are facing in Nigeria—governance models, information management systems, funding etc.<sup>1</sup> - and there is a need to place more emphasis on the roles that pharmacists can play in solving this.

Apparently, the pharmacist's role is expanding beyond the traditional product-oriented functions of dispensing and distributing medicines and health supplies. To identify and assess the capacity of health systems, the World Health Organization (WHO) has defined six essential “building blocks” to which pharmacists can play an integral role as members of the health care team. These include:

- Health services
- Health workforce
- Health information system
- Medical products, vaccines and technology

- Health financing
- Leadership and governance



Anyone who takes medications is at risk of actual or potential drug therapy problems. These problems, ranging from poor information to technological errors, are a significant source of morbidity and mortality when left undetected and unresolved, and drive huge costs across the health system. As drug therapy experts, pharmacists provide drug therapy management services built around a partnership between the pharmacist, the patient (or his or her caregiver), physicians and other members of a patient's health care team<sup>1</sup>. Many patients interact with the health system at multiple points. Medication therapy may be started, altered, or adjusted at any point along this continuity of care, by multiple providers, but pharmacists are the health professionals with the best potential to effectively coordinate medication across the continuum; increasing access to and public awareness of pharmacy is a necessary step in achieving a strengthened health system.

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# COVID-19 Statements

[1]

The COVID-19 pandemic was not anticipated and this emphasises that as healthcare professionals, we should always be ready to respond to any health crisis. My Pharmacy Education provided me with the basic knowledge of Virology and disease transmission and this helped me in the initial stages of the pandemic.

As Pharmacists and Pharmacy Students, we should always give ourselves to professional development, aspiring to learn, and further educate ourselves at all times. That's the only way we can keep up with the various changes around us and remain relevant in this changing world.

Learning is fun, so let's keep learning and have as much fun as we can alongside. Viva la IPSF, viva la Pharmacy.

Olanrewaju Popoola



PANS - Nigeria  
Recent Graduate

*Member of Pharmacy Education Committee,  
Member of Pharmacy Practice Initiative  
Subcommittee, Research Team lead for the Young  
Researchers Forum.*

[2]

After the outbreak of COVID, all our classes stopped and our exams were shifted online. Even our practical exams were shifted online which created an environment which assessed our practical ability in an unrealistic environment.

With regards to registration after graduation, there is a large disparity in which pharmacy students are treated compared to medics and nurses. Medical and nursing students were almost immediately called to help with the front lines. In comparison, pharmacy graduates were not even called to begin their training year early, with talks about even postponing the training year. This made little sense as this would deplete the supply of workers entering the workforce. This highlights that the MPharm degree is not fit for purpose in terms of preparing graduates for registration.

Tsz To Sham



BPSA - UK

Fourth Year

*PSI Subcommittee*

[3]

COVID-19 has certainly taken its toll worldwide, but thankfully New Zealand has taken the right actions since we first experienced the impact. Being a recent graduate, I have continued to work through the lockdown and have experienced the amount of reliability placed on health professionals in such a crisis.

Whilst our education did not delve highly into pandemics and their response, we were educated on common practice towards infectious diseases in a pharmacy manner such as aseptic dispensing, social distancing and so on.

I think the major hole in pharmacy education is modules directly related to preparation for a pandemic in a pharmacy environment. This has been seen with lack of PPE access, aseptic dispensing principles, restructuring the pharmacy etc. This needs to be addressed

Callum Porter



NZAPS-O - New Zealand

Recent Graduate

*Pharmacy Practices Initiatives Coordinator*

[4]

The quality of pharmacy education has changed as everything came to a stop after the announcement of the 1st case in the country, less involvement with the lecturers however I have gotten the opportunity to do online courses. The pharmacy education was not as sufficient, however, I applied some knowledge i.e in the preparation of homemade hand sanitizers and education to my family on prevention of COVID 19. We can be better prepared for this by getting involved in research and also courses on risk management and pandemic management in the curriculum and also working together through a multidisciplinary approach when it comes to patient care.

Luciah Wanjiku Kamau



KEPhSA - Kenya

Fifth Year

*Pharmacy Advocacy Subcommittee*



# Member Organisations *Activities*

1. The Tutorials for First Year students organised by **AEP- MALI**, Mali 46 students with the aim of helping younger students understand difficult pharmacy Course contents.



2. From the college to Pharmacy activity organised by **ADEPHARM - Côte d'Ivoire**, Côte d'Ivoire. The activity was attended by 78 participants with the aim to provide members a view about Pharmacy from now to few years and information about the procedure for opening a Community Pharmacy in Ivory Coast.



3. A symposium on Tuberculosis was organised by **AEFFUL-Portugal**, Portugal with the aim to celebrate the world Tuberculosis day and to provide information regarding tuberculosis as well as advances and research projects conducted in this area to all 203 participants.



4. The International Students' Congress of **AFOP- Austria**, Austria held In may had 170 participants. The aim of this event was to bring together young motivated students, scientists and academics from all different groups as early as possible to exchange views, create a network and get to know the way of thinking and working.



5. A World Heart Day was organised by **APhA-ASP**, United States of America with an audience of 70 participants. The purpose of this activity was to increase awareness of the dangers of heart disease among members of the University Of Hawaii Daniel K. Inouye College Of Pharmacy as well to show ways to improve heart health among members of the school.



6. With about 200 attendees; **ARPEC, Algeria** organised the E-Med event with the aim to

introduce the idea of blending IT & Medicine together to provide better healthcare



7. The National Pharmaceutical Students Weekend was hosted by **ASEP-Switzerland**, with the participation of 187 students. The aim of this national pharmaceutical students' weekend was to introduce the participants to the latest changes in the world of Pharmaceutical sciences and sought to broaden the horizon of the participants.



8. 23 participants attended The Scientific Article Writing Club organised by **ASEPA, Algeria**. The aim of this event was to teach ASEPA members the basics of spelling and grammar, the definition and importance of the introduction in any articles to train future editors of the association's scientific journal.



9. The Study day on Clinical Biology with 800 participants was organised by **ASEPT, Algeria**. The main goal was to promote scientific culture among university, community, and to broaden students' knowledge in the field of clinical biology in general, and Vitamin D in particular, by providing them with quality conferences animated by eminent professors, and giving them the opportunity to ask questions and discuss them with the speakers through a debate



10. **ATEP, Tunisia** held a workshop on the role of pharmacists in clinical pharmacogenetics, 20 students were present. The aim of this workshop was to give students and pharmacists a glimpse on how a pharmacist play a huge role to develop the field of pharmacogenetics



11. **BEM KEMAFAR UNPAD, Indonesia** organised an event "Let's go teaching 2019" with 50 participants. The aim of this event was to give early education and increase interest in pharmacy for Elementary students, especially Cileunyi 01 and Cinunuk 04 Elementary School.



12. **CEPHARM, Burkina Faso**, organised a training on taking physiological constants. 250 students were able to learn how to perform the measurement of physiological constants.



13. **CEP/UOB, Democratic Republic of Congo** organised a workshop called Auto-medication with 145 attendees. The aim of this activity was to sensitise pharmacy students and pharmacy professionals on negative consequences of auto medication as well as to train them to be able to reach other social categories and to make them aware of auto medication inconveniences.



14. Science Fantasy is an activity organised by **EPSF, Egypt**. The event had 2200 participants. This event had the aims of widening the students' scopes towards less-known fields of sciences that spark imagination e.g. neuropsychology and breaking barriers and misconceptions by delivering the concept of science as fun.



15. **FECOEF, Costa Rica** organised a symposium with the participation of 75 students. The objective of this symposium was present works done from different university careers, for example: Pharmacy, Biology, Medicine and others. The works were related to health, diseases, environmental conditions, veterinary and others; In addition, there was the option to make an oral presentation or simply a poster.



16. **FERARMEX, Mexico** held a World Pharmacist Day, the event reached 485 participants that had the opportunity to learn about the pharmacist's role as a health professional, but also his involvement in pharmaceutical sciences and research. The pharmacist profile was presented

with 8 key point: Researcher, decision maker, permanent student, leader, manager, carer, communicator and teacher."



17. IPhSA, Iran organised the Researcher Training Short Course, it had 55 participants and aimed to allow students to learn the needed methodology in the laboratory, but also to get familiar with research works and professor-student dynamics.



18. ISMAFARSI, Indonesia held the Indonesian Pharmacy Student Scientific Week (PIMFI), It had 178 participants and aimed to improve competitiveness of students and prepare them for professional life and the challenges they may face.



19. JPSA, Jordan held the Scientific research workshop: NanoSteps, the event hosted 700 individuals and aimed to keep up with the latest medical knowledge and acquire members the necessary skills needed to write and read scientific articles.



20. LPSA, Lebanon organised the Online Debate, 25 persons had the opportunity to attend the debate which was a 2 vs 2 debater exchange around antimicrobial resistance, the aim was to address the issue of microbial resistance.



21. MyPSA, Malaysia held the 2nd National Pharmacy Research Competition with 42 participants from 9 universities in Malaysia, the aim of the project is to raise awareness and cultivate interest in the research field while promoting undergraduate student's research contributions.



22. NAPSA, Australia held the NAPSA congress which hosted 290 participants. The aim of the event is to contribute to the promotion of pharmacy studies but also create a creative and stimulating environment where students and recent graduates can debate, learn, network and meet students and industrial leaders.



23. NAPSer, Serbia organised the BPSA- Educative Project “addictive disorders”, the event reached 150 participants and aimed to educate pharmacy students and pharmaceutical sciences students about addictive disorders and how to tackle and manage the problem with interprofessionnel collaborations and tolerance.



24. NAPS-SL, Sierra Leone held its 3rd Annual General Assembly & Scientific Symposium, the event hosted 250 participants and was organised under the “Impact of Pharmacists towards achieving Universal Health Coverage” Theme. It aimed to bring together all memberships to elect the new executive boarder but also provide quality plenary sessions and workshops for participants.



25. NZAPS-O, New Zealand organised the Educational Seminar, the event reached 130 participants and aimed to give students and future graduates a better insight into the pharmacist’s different roles and opportunities.



26. PANS, Nigeria organised the Supply Chain Management in Pharmacy Course, the event reached a total of 1500 participants and aimed to provide students with Supply Chain management training and to give them the needed skills to compete with pharmacists around the world.



29. ZPSA, Zimbabwe organised the White Coat Ceremony, the event hosted 102 participants and aimed to introduce first year students to the different pharmaceutical sectors and help them understand and commit to the profession.

27. PSF NNU, Palestine held a conference with the theme Further Pharmacy Vision. This event gathered pharmacy students from different universities for one day for learning and networking experiences.



30. A.E.P-Mali, Mali participated as partners to the KENEYA EXPO BAMAKO 2020, 3000 participants attended the fair and the aim of the participation was to represent pharmacy students, ensure a fruitful collaboration by organising the registration, proving students panelists and mobilisation and mediation.

28. ŠSSFD, Slovenia organised its 5th Symposium under the “Biologic and Biosimilar Drugs” theme. The event reached 300 participants and aimed to give students advanced knowledge about biologic and biosimilar drugs.



*The International Pharmaceutical Students' Federation (IPSF) was founded in 1949 by eight pharmacy student associations in London, United Kingdom. The Federation now represents approximately 500,000 pharmacy students and recent graduates in 100 countries worldwide. IPSF is the leading international advocacy organisation for pharmacy and pharmaceutical science students. We promote improved public health through the provision of information, education, and networking opportunities as well as a range of publications and professional activities.*



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International  
Pharmaceutical  
Students' Federation