Community Service and its Learning Values: Perceptions of Undergraduate Pharmacy Students

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ABSTRACT

Introduction: Service learning is commonly incorporated into the curricula of health professions programmes to provide a platform for students to acquire competencies outside the classroom. The objectives of this study were to explore the perceptions of pharmacy students about their experience in course-based community service activities and their educational impact, as well as the contributing factors for effective implementation. **Materials and Methods:** Twenty semi-structured interviews were conducted among third- and fourth-year pharmacy students in a Malaysian University. All interviews were audio-recorded and transcribed verbatim. The interviews were stopped when no new theme emerged. The data were analysed using a thematic analysis approach. **Results:** Pharmacy students perceived community service as an experiential learning activity that enabled them to apply the knowledge and practise the skills that they learned in the classroom in real life situations. They had opportunities to enhance their non-cognitive skills through engagement in projects that were preferably related to pharmacy and aligned with their interest. Allocated time, faculty guidance and peer collaboration were important to maximise the educational values of community service. Assessment and feedback provided by supervisors and peers were useful to improve the team dynamics and help students to identify areas of improvement. **Conclusion:** Participation in community service activity contributed to professional and personal development of pharmacy students.

Keywords: Pharmacy Students, Community Service, Service Learning, Health Professions Education, Professional Development.

INTRODUCTION

Social responsibility is one of the important learning outcomes of health professions education as future health professionals are required to engage with the communities that they serve and contribute to the efforts in tackling social problems. Experiential learning activities are commonly incorporated in health professions curricula for students to "learn by doing" through participating in community projects. They provide opportunities for students to link the theories learned in classroom with practice to address real world issues. It has been reported that students who participated in community service showed better academic performance, commitment to activism and racial understanding, self-efficacy and leadership compared to those who did not participate.[1] In particular, the positive impact of short-term service learning on the affective domain development is significant.[2] In community-based education (CBE), community placements are embedded within the curricula and organised with the objectives of involving students in studying and addressing the health problems of the communities.[3] The competencies required for CBE include clinical competencies (preventive care, curative care, health education of population), communication skills, teamwork, problem solving, management of services and participation in research activities.[4] Active community involvement has been highlighted to be crucial for successful CBE outcomes and levels of appreciation by students and communities.

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The roles of pharmacists have expanded in the recent years to improve patient outcomes and reduce health care costs. Community pharmacists are recognised as one of the most accessible health professionals who can make a significant impact on the health and wellness of the populations. They also play a key role in tackling public health issues, such as their involvement during the COVID-19 pandemic. They are the first-line healthcare providers and take up additional responsibilities in creating public awareness about the disease and being responsible for chronic medication refill.[5] Hence, opportunities for exposure and first-hand experience in working with the communities are particularly relevant in pharmacy curricula to ensure that the graduates are competent and well prepared.

Nevertheless, there are resistances in incorporating community service into academic programmes as some have claimed that community service should be a co-curricular activity that is done on a student's "own time".[6] The other barrier for implementation arises from the fact that course-based community service requires faculty to devote time in supervising the activities as well as mentoring the students. Moreover, health professions curricula generally have heavier academic load than other courses, which may result in students' lack of interest and passive approach towards the community service activities. Therefore, this study was conducted to explore the pharmacy students' perceptions about their experience in course-based community service activities and their educational impact, and to determine the factors for effective implementation of service learning in undergraduate pharmacy programmes.

MATERIALS AND METHODS

Ethics Approval

This study was approved by the International Medical University's Joint Committee of Research and Ethics (Project number: BP (I-02/2019(06)).

Study Setting

The study was conducted among the Bachelor of Pharmacy (Honours) students at the International Medical University (IMU), Malaysia. In the IMU BPharm (Hons) programme, students are required to participate in community service projects in the "Social Responsibility" module which is a compulsory module for all students. These community projects are organised by the students and could be health or non-health related such as health screening, environmental awareness, and improvement of life skills of underprivileged communities. In each project, the students work in small groups to discuss their proposals with the project

supervisor who is a faculty member, and subsequently plan the logistics, resources, and budget. Upon approval, they implement the project at the respective community sites.

Study Participants

The participants in this study were IMU BPharm (Hons) students in academic years 3 and 4. A total of twenty students (14 females, 6 males) participated in the interviews. Among them, 3 students were in Year 3 and 17 were in Year 4. One of them was an international student from Kenya, the rest were local Malaysian students. All of them had completed the community service projects in Year 2 which took place before the COVID-19 outbreak. The interview participants were labelled as P1-P20 to ensure anonymity.

Study Design

IMU BPharm (Hons) students in academic years 3 and 4 were invited to participate in one-to-one semi-structured interviews conducted by AYXW. Due to the COVID-19 pandemic lockdown, the interviews were conducted online using Microsoft Teams, a video conferencing tool (the interviewer and interviewee had their video cameras switched on during the interview). The information regarding the study was explained to the participants and consent was obtained prior to the interviews. The perceptions and experience of the interviewees during their involvement in the community service projects were explored using a set of open-ended questions. The content areas covered in the semi-structured interviews are shown in Table 1. The interviews were conducted in English and each interview took between 45 min to an hour. All the interviews were audio recorded with the consent of the participants and transcribed verbatim.

Data Analysis

The interviews were analysed using the thematic analysis methods.[7] The interview transcripts were read repeatedly by two of the researchers, AYXW and HME, to become immersed in and aware of the contents of the interviews. The interviews were independently coded by them. The codes were discussed with the other research team members, SHN and VDN. Subsequently, the themes were identified. The themes were further checked with the original interview transcripts to ensure that they were grounded in the data. Regular meetings among the researchers were held on regular basis to review and refine the themes until mutual agreement was obtained. No additional theme was identified toward the end of the study which indicated that the

Table 1: Semi-structured interview questions.

1.	What did you like about the community service activities?
2.	What did you dislike about the community service activities?
3.	What did you learn from the community service activities?
4.	How did you benefit from participating in the community service activities?
5.	How did the activities help you in developing knowledge, skills and attitude required for the practice of the pharmacy profession?
6.	How do you think the effectiveness and learning values of community service activities can be improved?

Table 2: Community Projects Undertaken by the Interview Participants.

Community sites	Activities carried out during community projects	Number of interview participants
Orphanage	Giving tuition in English, Mathematics and Science subjects Giving talks to create environmental awareness	8
Old folks' home	Teaching caregivers about medication safety, basic first aid skills	1
Old folks' home	Health screening and counselling Giving talks on mental health and lifestyle management Interactive activities with elderly (eg. origami, games)	8
Disabled centre	Demonstrating proper personal hygiene practices Giving health talks (eg. safe use of over-the-counter medication)	2
Refugee centre	Teaching basic life skills (eg. sewing, english conversation and basic mathematics)	1

data had reached saturation and hence the interview was stopped.

RESULTS

The interviewees demonstrated passion and enthusiasm when narrating their experience during the activities. The types of community projects are presented in Table 2. The emergent themes and sub-themes extracted from the interviews are shown in Table 3.

Community Service as an Experiential Learning Activity

The participants recognised that community service was a valuable experiential learning activity that enabled them to gain first-hand experience and new knowledge,

Table 3: Emergent Themes and Sub-Themes Based on Semi-Structured Interviews.

Themes	Sub-themes	Number of quotes
Community service as an experiential learning activity	Real life experience	127
	Application of knowledge and skills	39
	Choice of activities	54
Development and enhancement of non-cognitive skills	Empathy	18
	Communication	124
	Organisation	18
	Problem solving	32
	Leadership	12
	Teamwork	11
Support systems for course-based community service activities	Peer support	50
	Institutional support	68
Assessment and feedback	Summative vs formative assessment	13
	Assessors	30

as well as apply what they learned in classroom in the real world. The three sub-themes that emerged were: real life experience, application of knowledge and skills and choice of activities.

Real Life Experience

The interviewees appreciated the opportunities to be exposed to real-life situations during the projects and found the experience meaningful. They made efforts to engage themselves in the activities to maximise the learning opportunities.

> *I feel like I am able to gain a lot of new experience from these and in a way, it helps for personal growth. (P4)*
> *I like to help around, and I also like to go to the (old folks) homes to look at how's their lifestyle, help them around with what they need. (P10)*

Application of Knowledge and Skills

The participants who were involved in health-related projects were able to apply their pharmacy knowledge and skills during the activities e.g. health screening and medication counselling. In doing so, they were more aware of the gaps in their knowledge and learned from their mistakes. For example, one of the interviewees recounted her experience about making a spelling mistake in medication dispensing which was highlighted by the faculty who accompanied the community visit. This created an opportunity for her to reflect and learn to be more vigilant in future practice.

To apply clinically is a different thing, you have to think about a lot of issues because you have to see it in a holistic manner, it's like a 360 view of things once you are in a practical position. You get your understanding broadened; your skills become better. (P7)

If I made some mistakes in dispensing during my volunteering work, it would actually leave a very strong impression for me not to repeat (the mistake) in my future as a pharmacist. (P15)

Choice of Activities

The participants welcomed the freedom to choose from a variety of projects based on their interest and community needs. While they found the activities meaningful and developed great sense of achievement during their involvement, most of them expressed preference for activities that were related to pharmacy practice as knowledge and skills that were learned in the course could be applied.

If everyone goes for something that they want with their interests, everyone will put in their efforts and everyone will put in time. So, in a way, everyone will learn the most out of the exposure. (P4)

Development and Enhancement of Non-cognitive Skills

Empathy

The interviewees opined that they developed empathy towards the communities that they served through the projects. They met people from different backgrounds and had the opportunity to gain exposure to the living conditions of the communities which could be drastically different from their own. It helped them to develop better understanding towards people from all walks of life. At the same time, they were able to put themselves in others' shoes and were motivated to figure out ways to contribute to the communities using the skills and knowledge that they had.

I learned to have more sympathy and empathy to the old folks as well as the people with physical disability. (P11)

We can develop our empathy toward society through the project. (P19)

It's the first time I go there, and I can see that the place (refugee camp) is very crowded. I can say it is like open my eyes, open my mind. (P20)

Communication, Organization, Problem Solving, Leadership and Teamwork

The students were able to enhance their communication, organisation, problem solving, leadership skills and teamwork through involvement in the project planning and execution phases. Prior to the onsite activities,

they had regular meetings with their team members to brainstorm ideas and allocate the tasks. Time management, leadership and teamwork were essential to ensure that the activities were planned efficiently. They also learned to be adaptable and creative when faced with challenges. As they were provided with a small budget to execute the projects, they had to learn to plan and manage the budget appropriately. The participants recognised that these traits were important for their future practice.

Once I become the leader, I know how difficult it is to conduct an activity, how it is important for us as a leader to make our team mates to be close to each other, help each other and everyone has their own workload. So, we need to manage our team mates wisely. (P7)

I learned how to find the relevant information from the internet and useful information from reliable sources and make it into simple words so that the community can actually know what you want to convey. (P10)

(I learnt) event planning, execution, to always be prepared to encounter unforeseen circumstances, to be able to solve problem in a win-win situation. (P17)

As a healthcare professional, we have to be more caring, and we have to learn how to communicate with others so this community service maybe we can make it as a pathway for us to learn how to communicate with different kinds of people. (P19)

For time management, like I've said just now, I was quite busy with balancing this and other subjects. I had to be more careful and set my priority which one to do first, which one to do later. (P18)

Support Systems for Course-Based Community Service Activities

Peer support

Peer support was highlighted to be important for successful implementation of the community service projects. Project planning meetings would be more efficient when the team members were cooperative and ready to share their thoughts and suggestions. Team spirit including active participation and appreciation of each other's contribution has also been identified as critical success factors for achieving the expected outcomes of the projects.

I think teamwork plays an important part for the success of the activities. (P15)

Institutional Support

The interviewees suggested that the university should have guidelines to ensure the alignment of the community service activities with the needs of the communities

being served. The continuity of the projects was important in order to benefit the communities.

> *What the university can do is to engage that community that you are helping and to ask them how community service helps them, how the project can help them. (P7)*

> *Probably there should be a record of what previous batch has done so the next batch can know what can be done and what they can do following the previous batch (P8)*

Adequate time should be allocated in the teaching timetables for the activities. It was clear that heavy academic workload could affect the preparedness of the students for the community service activities. The interviewees felt that they could provide better service to the communities if more time was allocated in the programme for the activities. Meanwhile, the feasibility and impact of the projects depended on the financial support from the university.

> *I do find it challenging if the workload is too much. (P2)*

> *If we are allocated with certain period of time for our meeting, we can actually have more time for discussion and to plan our activities. (P19)*

> *The bigger the budget, the bigger the outcomes they can achieve, and more activities can be planned. (P13)*

The interviewees valued the guidance of the faculty during the planning and execution of the projects. They appreciated the presence of faculty during the onsite activities as resource persons for problem solving. The interviewees also suggested that an inter-professional practice approach should be adopted in carrying out the community service activities to improve the outcomes.

> *Our experience is not enough so supervisor is needed to help us and guide us for a plan to be successful. If we have any confusion or question, supervisors are there to give us the advice. (P16)*

> *If we are doing mental health (campaign), maybe we can invite a counsellor together with us. (P16)*

Assessment and Feedback
Formative Versus Summative Assessment

There was a mix of opinions among the participants on whether community service activities should be formatively or summatively assessed. While some believed that summative assessment would drive the students to put in more efforts to ensure the success of the activities, others felt that the emphasis should be placed on the experience and opportunities to develop altruism value through the activities and hence formative assessment would be more appropriate.

> *I mean forcing to grade something wouldn't actually help them to develop that kind of serving attitude. (P8)*

> *When it comes to grading individually, maybe some of the students were doing with the sake of marks and for the sake of getting an 'A' for the particular module. When it is a team, we will push our members for the event to be success. (P16)*

Assessors

The interviewees suggested that the students' performance in the projects should not only be assessed by the project supervisors, but also by their peers as this would encourage full participation and professionalism among the team members throughout the process from project planning to execution. Both the supervisor and peer feedback helped them to identify areas of weakness and improve.

> *Peer assessment is a must because without that assessment, those lazy teammates will not do their work. (P3)*

> *It will be better if we have a session after that which the supervisor can point out where should we improve, what to do, where did we go wrong, something like that, instead of just grading. (P12)*

> *I think the feedback should be shared among the group members. Especially the peer assessment, to let the person know what is the problem, what have been done, for own improvement. (P18)*

DISCUSSION

According to the constructivism learning theory, knowledge is acquired when students participate in service-learning activities and relate the experiences to what they have learned in classroom.[8] The theory supports cognitive development, self-regulation, and problem-solving skills through socially formed learning opportunities.[8] Learners develop knowledge and create their understanding based upon their experiences. Accommodation and assimilation are the two main features within the theory for construction of new knowledge.[9] The former requires students to re-frame their thoughts in response to new experiences and information.[10] When the situation happens unexpectedly, they must accommodate and change their existing ideas to reach the outcomes.[10] Meanwhile, assimilation requires students to consolidate their past experiences with new experiences, and subsequently reflect the mistakes that have been done, develop new thoughts, make their own judgement, and modify their perceptions.[9] Studies have shown that service-learning leads to positive outcomes on student personal and interpersonal development. The competencies highlighted by the students in this study are consistent with those listed in the International Pharmaceutical

Federation's Global Competency Framework for pharmacy workforce.[11] Meanwhile, the community service activities were eye-opening experiences to many students as the living conditions of the underprivileged groups whom they served could be far beyond their expectation and imagination. These activities contributed to empathy development, an important quality of all healthcare professionals. Similar observations were made in the study by Wilson that US college students who took part in service learning were more likely to express their sense of empathy as compared to those who did not involve in service learning.[12]

Despite the heavy academic workload, the students were positive about their experience in community service projects. They were committed to contribute to the communities, often spending more time than that required in the course to prepare, plan, and execute the activities. They were intrinsically motivated by the spirit of volunteerism, curiosity about the life experience of others especially those from different backgrounds, as well as the sense of fulfillment gained from helping to improve the others' lives. To ensure balance between the relatively heavy academic workload in pharmacy curricula and the quality of service provided to the communities, projects that enable students to apply their pharmacy knowledge and skills as preferred by the students are to be considered.

While serving the communities, the students were exposed to various real-life problems that challenged them to improve their competencies, especially communication, problem solving, organisation, resource management, teamwork, and leadership skills. They also realised the limitations in their professional knowledge and skills and recognised the importance of an inter-professional approach in managing the projects to bring optimal benefits to the communities being served. This mode of learning is impactful as the experience is first-hand, and the outcomes of the students' intervention through the projects are direct indicators of their competencies. The students were encouraged to reflect on the areas to improve when the outcomes were less satisfactory. Reflective practice is defined as 'the process whereby an individual thinks analytically about anything relating to their professional practice with the intention of gaining insight and using the lessons learned to maintain good practice or make improvements where possible'.[13] Being a reflective health professional is important as it shows the ability to identify actions to help learning, development or improvement of practice, and develop deeper understanding and self-awareness. Besides, it also seeks for chances to improve quality and patient safety in any organisation. In accordance with the reflective learning theory, reflection plays a significant role in the learning process. It is particularly effective when the learners incorporate the experiences that they gained into the context of learning. The two essential components of service learning are reflection-in-action, in which the learners try to understand the situation during an activity and reflection-on-action, in which the learners process what they have learned after an activity.[14] Yet, there is limited literature evidence on the use reflective practice in pharmacy education, which could probably be attributed to the lack of structured framework for its implementation.[15] Evidence has shown that reflective skill allows pharmacy practitioners to integrate theories with practice for improved clinical decision-making capabilities in a multi-disciplinary healthcare team.[16] This study has clearly shown that pharmacy students are engaged in reflective practice during community service activities. Therefore, it supports the incorporation of community service in pharmacy curricula.

Students perceived that teamwork and peer support were essential in ensuring the successful implementation of the community service projects as well as the achievement of learning outcomes. They were particularly disturbed when the team members did not contribute during the various project phases but obtained the same grade as the others who worked much harder. Peer assessment has been suggested to address this issue. Peer assessment encourages students to be critical about each other's professional behaviour.[17] An effective team produced high quality products and the grades were equally distributed among the teammates.[18] Peer assessment supports assessment for learning, whereby professional behaviour can be adjusted and improved based on the peer feedback.

Community service project provides a constructive and collaborative learning platform led by students in an authentic learning environment. There are four elements of a constructivist learning environment: shared knowledge among the students, peers, and teachers for cooperative learning; shared authority among the students and teachers where the learning process is preferably student-centred while the teachers provide guidance; teacher as supervisor in facilitating students' learning; and heterogeneous cooperative approach to enable students to voice out their opinion, take others' ideas as reference and discuss the difference in thoughts.[19] Even though the community service projects are student-led, it is crucial that the supervisor plays the role as the guide on the side and serves as the resource person. The supervision throughout the project will not only encourage student participation in the activities, but also ensure fair assessment of each student's performance as well as safe practice particularly in pharmacy related community projects. In addition, it helps the supervisors to give specific and individualised feedback to the students.

Limitations

Although the participation in the study was open to all pharmacy students in their third and fourth years, it was possible that the participants who volunteered to be interviewed were those who were more proactive in learning and committed towards community service. As the interviews were conducted during the COVID-19 pandemic using a video conferencing tool, the expression of thoughts and ideas by the interviewees could be interrupted by the occasional intermittent internet connectivity issues. Nevertheless, the findings of this study were consistent with similar studies reported in the literatures that showed a positive impact of community service on students' professional and personal development.

CONCLUSION

This study demonstrated that course-based community service was well perceived by undergraduate pharmacy students. The activities enabled them to enhance their communication, organisation, problem solving, leadership skills and teamwork. They also developed empathy and the ability to adapt to unexpected situations. These are important qualities that health professionals should possess in view of the challenges that are increasingly faced in various healthcare settings due to resource constraints and uncertainties arising from unprecedented events such as the COVID-19 pandemic. The early exposure to real world problems allows students to apply their knowledge and skills in authentic work environments while serving the underprivileged communities. To ensure the educational values of course-based community service, students should be given the flexibility to participate in projects based on their interests and self-motivation. Regardless of formative or summative assessment, students should be given feedback on their performance by the project supervisors and peers. Time should be allocated for these activities in the teaching and learning schedules. The collaborative efforts among the institution, faculty and peers are crucial to ensure successful implementation of the projects to benefit both the students and communities.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.
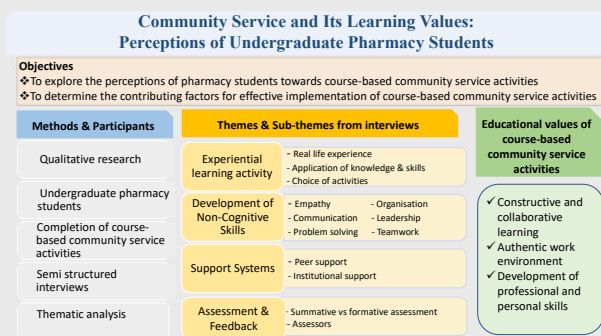
ABBREVIATIONS

BPharm (Hons): Bachelor of Pharmacy (Honours); **CBE:** community-based education; **IMU:** International Medical University.

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PICTORIAL ABSTRACT

Community Service and Its Learning Values:
Perceptions of Undergraduate Pharmacy Students

Objectives
❖ To explore the perceptions of pharmacy students towards course-based community service activities
❖ To determine the contributing factors for effective implementation of course-based community service activities

Methods & Participants	Themes & Sub-themes from interviews		Educational values of course-based community service activities
Qualitative research	Experiential learning activity	- Real life experience - Application of knowledge & skills - Choice of activities	✓ Constructive and collaborative learning ✓ Authentic work environment ✓ Development of professional and personal skills
Undergraduate pharmacy students	Development of Non-Cognitive Skills	- Empathy - Organisation - Communication - Leadership - Problem solving - Teamwork	
Completion of course-based community service activities			
Semi structured interviews	Support Systems	- Peer support - Institutional support	
Thematic analysis	Assessment & Feedback	- Summative vs formative assessment - Assessors	

SUMMARY

Community service activities have been incorporated into the undergraduate pharmacy curriculum. It provided experiential learning opportunities for the students to apply their knowledge and further enhance their personal and professional skills in real life situations. They findings showed that they were motivated to serve the underprivileged communities despite their heavy workload. Besides, they were able to develop empathy and adaptability which were essential attributes of healthcare professionals. Allocated time in the curriculum would help to ensure the educational benefits of course-based community service as well as the quality of service provided to the communities. The students valued assessment and feedback by their supervisors and peers, which helped them to improve.

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