



## 약학대학생대상 코로나바이러스감염증-19 예방접종 약료활동 교육계몽을 위한 국제협력

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## Virtual Global Collaboration to Advocate Students for Pharmacy Immunizations during Coronavirus Disease-19

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### ABSTRACT

**Background:** It was to describe collaborative educational efforts under Coronavirus disease 2019 period to advocate pharmacy-based immunization delivery and meet unmet needs of partnership institution using virtual learning platforms. **Methods:** A partnership was established among three pharmacy schools from two countries. The class content included the history of pharmacy immunization, pharmacists' roles and contribution to public health of the USA. The class also reviewed the value of pharmacists as frontline healthcare workers to foster student insights and the scope of pharmacy. The virtual class featured an interactive video simulation and small breakroom discussion besides a lecture. **Results:** Participants indicated that public accessibility to pharmacy and six-year education system in South Korea as advantages. However, legislative restrictions, pharmacist burden, and interprofessional disagreements were expressed as barriers to introduce the pharmacist immunization. **Conclusion:** A virtual learning platform was used to advocate for pharmacy-based immunization and fulfilled an unmet educational gap at a partnership institution.

**KEYWORDS:** Coronavirus disease 2019, education, global collaboration, pharmacy-based immunization

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Global student education exchange programs were temporarily halted due to entry restrictions, social distancing, and budget shortfalls for international programs after declaration of the Coronavirus disease 2019 (COVID-19) pandemic by the World Health Organization (WHO) in March 2020.<sup>1)</sup> The continuity of global pharmacy education may require effective strategies with good understanding of the pharmacy practice, public health needs and cultures of the partnership countries.

Immunizations by pharmacists are routine practice in forty and more countries worldwide.<sup>2)</sup> The COVID-19 pandemic necessitated the expansion of pharmacists' scope of practice to meet immunization needs of the public. The Public Readiness and Emergency Preparedness (PREP) Act passed, in June 2020, authorized licensed pharmacists to order and administer COVID-19 vaccines in the United States.<sup>3)</sup> Key details included supporting valuable pharmaceutical care services that pharmacists and their teams provided to communities throughout the pandemic, including updating regulations to enable pharmacists to immunize adults. Moreover, as of January 2020, the International Pharmaceutical Federation (FIP) urged an international response to the COVID-19 pandemic to collate institutional and university level information on higher education's responsiveness to COVID-19, focusing on pharmacy education.<sup>2)</sup>

South Korea is one of the countries recognized by advanced medical services supported by high digital technology and governmental national insurance claim system. Unfortunately, Korean pharmacists are not authorized to perform any clinical activities including immunizing patients. Despite the healthcare burden during the pandemic, pharmacists' roles were limited to inventory management, vaccine storage and distribution. Additionally, pharmacy vaccination is not a priority teaching item in the curriculum of PharmD course. To address this gap, virtual education by international educational collaboration was provided to inform students the changes in the scope of pharmacy practice in globally during the COVID-19 pandemic, to give them a perspective on their roles by complying to the laws in Korea and future insights as members of the global pharmacy community.

## Objectives

The objective is to describe collaborative education efforts to overcome learning interruptions during a pandemic, by

using a virtual interactive platform, and to advocate for immunization by pharmacists to meet education needs for PharmD students in Korea.

## Description

Three faculty partners in two countries held several meetings to prepare a collaborative education program. The program topic and content were selected after evaluating course items at a partnership institution, by identifying courses taught, specialties of faculty instructors, potential interests of student audiences, and the scope of practice in each country. Advocacy for pharmacy-based immunizations and delivery was selected as a topic for the first collaboration project to address an unmet curricular need in South Korean pharmacy schools. In addition, two faculty members of the team had experiences as immunizers; one faculty member was specialized in ambulatory care practice and certified to teach the APhA Pharmacy-Based Immunization Certificate program, and the other faculty was practicing vaccine administration and specialized in public health.

The educational program was presented to Professional year 3 (P3) students at Ewha Womans University, Seoul, South Korea, in the course of "Pharmaceutical Experiment Laboratory VI." The lecture was opened to other pharmacy school students, pharmacists, and members of pharmacy organizations by informing the notification of lecture to pharmacy schools and professional organizations and any participants were allowed to access the lecture upon free registration by the online. An online platform (2022 Zoom Video Communications, Inc) was used, and pre-registration was required to ensure technical support and prevent program interruptions. The duration of the program was about 75 minutes, and the content described: the history of pharmacy-based immunization and the background to pharmacists' abilities to immunize in the United States; the required training to qualify as a pharmacist immunizer; current challenges (e.g., scope of practice, working conditions); and opportunities (e.g., emergency orders) for pharmacists to advocate for and perform immunization against COVID-19. Students were intrigued by the United States faculty pharmacist demonstrating a pharmacist's advanced role in addressing the pandemic following national deployment by the government.

## Innovation

The virtual platform was utilized and the education program comprised of two interactive video simulations of immunizations delivered by pharmacists, following counseling with a mock interview for vaccine-hesitant patients, and of managing post-vaccination adverse reactions, to improve attendees' engagement and stimulate their interest. The program introduced a new scope of pharmacy practice (pharmacy immunization), and pharmacists' roles in pandemic preparation and responsiveness. Many photos were included in the lecture from one of the faculties, showing vaccination clinics and national volunteer activities in public health and national emergency response efforts as part of the United States Federal Emergency Management Agency.

An interactive learning activity of ten small breakout sessions fostered discussion of the current challenges, potential solutions, and suggestions to address legal restrictions on the scope of practice. Three faculty members joined each breakout session to facilitate the discussion, and they led the attendees to share attitudes on: support for the ability of pharmacists to immunize; empowerment to advocate for pharmacists or pharmacy students to immunize; and motivation to pursue advocacy, based on the potential impact and value of pharmacists providing immunization on patient care and action plans. The attendees communicated verbally and by chat functions during the program.

## Evaluation of opinions

Participants' opinions were gathered and analyzed by four

criteria of strengths, weaknesses, opportunities, and threats (SWOT) on a potential implementation of pharmacy-based immunization and delivery program in South Korea, which focused on required immunizer training, challenges in becoming immunizers, the level of support on the program, and the level of readiness to become immunizers in South Korea. In the SWOT analysis, a strength was defined as internal enhancers to implement the program, weaknesses as internal inhibitors, opportunities as external suggestions, and threats as external challenges.

## Results

About 90 pre-registered learners attended the program, and most of them were students (n=64) at Ewha Womans University College of Pharmacy. The SWOT analysis revealed that easy geographic access to pharmacies and six-year pharmacy education system in Korea were considered as a strength or opportunity, but limited authorization of clinical activity, work burden, and interprofessional conflict were considered as weaknesses or threats (Table 1). Interestingly, some responses indicated that pharmacists were not yet a suitable professional to provide vaccinations in South Korea, and others responded that no pharmacy-based immunization would be introduced to South Korea unless the law permitted. In addition, students seldom considered communicating with legislators to promote the pharmacy practice.

## Implications

The international teaching collaboration for the advocacy of

**Table 1.** Strengths, weaknesses, opportunities, and threats analysis for implementation of a pharmacy-based immunization delivery program in South Korea

| Strengths   | Weaknesses  |
|---|---|
| <ul style="list-style-type: none"> <li>• Easy access to pharmacists by the public</li> <li>• Six-year PharmD education system</li> <li>• Availability of pharmacy practitioners, faculty, students</li> <li>• Innovative and independent entrepreneurial pharmacists</li> <li>• Active pharmacy organizations</li> </ul>                  | <ul style="list-style-type: none"> <li>• No current law allowing pharmacists to immunize in Korea</li> <li>• No current billing and reimbursement structure</li> <li>• Lack of data-sharing infrastructure</li> <li>• Workload and implementation concerns</li> <li>• No legislative advocacy training to change the law</li> </ul> |
| Opportunities   | Threats   |
| <ul style="list-style-type: none"> <li>• Need for pandemic response to vaccinate the community</li> <li>• Preparedness for post-pandemic public health prevention</li> <li>• Convenience for patients</li> <li>• Advanced practice change</li> <li>• Funding and revenue sources</li> <li>• Pharmacist and student 'champions'</li> </ul> | <ul style="list-style-type: none"> <li>• Low acceptance by other professions (scope of practice)</li> <li>• Public perception (not familiar with the idea)</li> <li>• Limited interest and interaction by legislators</li> </ul>  |

pharmacy-based immunization fulfilled the unmet education needs at the partnership institution, introduced new scope of pharmacy practice and helped the students gain insights and foster readiness for supporting public health.

For successful international collaboration in student education, several aspects need to be considered. First, a distinct topic should be chosen that addresses curricular needs and this topic was considered a current global issue of interest to the attendees. Second, we found that the virtual learning platform was a feasible tool to deliver the program, especially due the pandemic situation. Participants were able to engage interactively in active learning using videos and photos. Video clips presented mock patient encounters and photos showed pharmacists' immunization practice and vaccination sites. Small breakouts were prepared to share participants' opinions, and to pose questions to stimulate students' thoughts and opinions. Interestingly, the virtual class fostered ongoing discussions afterwards among faculty attendees to further inquire about pharmacy practice in the United States. Moreover, a lack of financial resources for initiating and sustaining collaboration may hinder accomplishing institutional global collaborative goals.<sup>4)</sup> A study reported that United States' pharmacy schools anticipated expenditure increased to support schools' global engagement endeavors, while the COVID-19 pandemic may have altered schools' spending strategies regarding student travel and faculty salaries, which were the two largest expenditures.<sup>5)</sup> Thus, a virtual platform in international collaboration may help to circumvent some of the major barriers to advocate pharmacy-based immunization.

Continuity and sustainability of the educational collaboration are important. Indeed, the global faculty members agreed to continue the program. Moreover, advancing the current collaboration is planned to introduce the pharmacy-based immunization and delivery certificate program in South Korea. The impact on public health from collaborative efforts would be meaningful, as evident from the advocacy for pharmacists as immunizers in guidelines from the FIP and UK National Health Service about pharmacists' roles in addressing the COVID-19 pandemic.<sup>6,7)</sup> The authors also recognized that legislative advocacy skills should be considered as a global pharmacy education standard to advance pharmacy practice worldwide. The next step would be to conduct a reciprocal education exchange by inviting the global partner to share content expertise in sport pharmacy.

Limitations included that the study involved a small sample

size, potential participants bias, or generalizability issues to represent the pharmacy community in Korean. Additionally, detailed data analysis was not included, but this study was intended to inform the new area of pharmacy practice, which is not included mainly in a PharmD course in Korea. Nonetheless, we tried assess the participants' opinions from small group session in SWOT analysis frame.

## Conclusion

The collaboration education program was delivered successfully to the students at a partnership institution. The efforts included recognizing education needs, and identifying topics of interest for students, and choosing the feasible learning platform which was a virtual education tool. Establishing such a virtual partnership drew specifically on the strengths and opportunities of advocacy for the pharmacy-based immunization and delivery program in the partner country, regardless of travel restrictions during the COVID-19 pandemic.

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## Author Contributions

Conceptualization, S.S., H.T. and S.J.R.; methodology, S.S. and S.J.R.; software, S.S. and S.J.R.; validation, H.T.; formal analysis, S.J.R.; investigation, S.S.; resources, S.J.R.; data curation, S.S., H.T. and S.J.R.; writing—original draft preparation, S.S., H.T. and S.J.R.; writing—review and editing, S.S., H.T. and S.J.R.; visualization, S.S., and S.J.R.; supervision, S.S. and S.J.R.; project administration, H.T.; funding acquisition, S.J.R. All authors read and agreed to the published version of the manuscript.

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## Data Availability

Data sharing are not applicable to this article, as no datasets were generated or analyzed during the study.

## Conflicts of Interest/Competing Interests

The authors have no conflicts of interest to declare with regards to the content of this article.

## Ethics Review and Approval

This study does not included any data or personal information.

## Consent to Participate

Informed consent to participate is not applicable to this study.

## Patient and Public Involvement

Patients and/or the public were not involved in the design, conduct, reporting, or dissemination plans of this research.

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