2022

“There Was Me Before Prp, and Then There Was Me After I Participated in Prp”: A Mixed-Methods Program Evaluation of A Pharmacy Summer Pipeline Program

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ABSTRACT

“THERE WAS ME BEFORE PRP, AND THEN THERE WAS ME AFTER I PARTICIPATED IN PRP”: A MIXED-METHODS PROGRAM EVALUATION OF A PHARMACY SUMMER PIPELINE PROGRAM

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Northern Illinois University, 2022
Dr. Gudrun Nyunt, Director

Nationwide, there has been a decline in the number of applicants to PharmD programs. Additionally, there is a lack of diversity in the healthcare workforce that leads to inequitable healthcare for diverse populations of patients. As a result, various recruitment tactics, including pipeline programs, have been used to develop a larger, more diverse applicant pool to the College of Pharmacy at a regional satellite campus in the Midwest. The purpose of this mixed methods summative program evaluation was to examine the experiences of participants in a pipeline program hosted at a regional satellite campus for a pharmacy program to determine if the following programmatic goals were being met: (a) an increase in the number of applicants to the regional satellite campus and (b) a more diverse applicant pool.

Data in the form of open- and close-ended surveys and pre- and post-tests of program participants as well as semi-structured interviews with nine past participants was collected. The findings indicated that, by achieving program outputs and outcomes, the program was meeting its goals. Specifically, the three achieved participant outputs were: (a) an increased knowledge and awareness of career opportunities within pharmacy, (b) the development of professional
networking relationships, and (c) an increased confidence in ones’ ability to succeed in pharmacy. As a result of these three outputs, there were three outcomes of the program: (a) an increased interest in the field of pharmacy, (b) an increased motivation and solidified decision to pursue a pharmacy career, and (c) an increased interest in applying to the PharmD program at the regional campus. These outputs and outcomes led to two major impacts of the pipeline program: (a) an increased applicant pool at the regional satellite campus and (b) a more diverse applicant pool.
“THERE WAS ME BEFORE PRP, AND THEN THERE WAS ME AFTER I PARTICIPATED IN PRP”: A MIXED-METHODS PROGRAM EVALUATION OF A PHARMACY SUMMER PIPELINE PROGRAM

BY

CYNTHIA SCHAEFER
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A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE DOCTOR OF EDUCATION

DEPARTMENT OF COUNSELING AND HIGHER EDUCATION

Doctoral Director:
Dr. Gudrun Nyunt
ACKNOWLEDGEMENTS

There are many individuals who have played an integral role in my success, and I would like to thank them. First, I would like to thank my dissertation committee chair, Dr. Gudrun Nyunt. I cannot say enough how much I have appreciated your expertise and support through each step of my dissertation process. To the other members of my dissertation committee, Dr. Xiaodan Hu, Dr. Kevin Rynn, and Dr. Thomas TenHoeve thank you for your guidance throughout my dissertation.

I would be remiss if I failed to acknowledge my mentors in higher education. Dr. Elizabeth Stroot, thank you for believing in me, forcing me to have strong writing skills, and pushing me to do my absolute best every minute of my undergraduate career. Kaye Martin and Sally Bork, if you had not introduced me to the world of Student Affairs, I don’t think I would have pursued a career in higher education. Mike Hoffshire, thank you for your endless motivation and support through my Ed.D. journey. Marissa King, thank you for your help with all things “numbers.” Finally, to my coworkers – Megan Magnuson, Dan DiCesare, Josie Clark, Dan Pollack, and the list goes on, thank you for your consistent encouragement as I talked your ears off about various parts of my educational journey.

In addition to my amazing academic and professional supports, it is absolutely imperative that I acknowledge my personal support system. To my parents, Randy and Debi Schaefer, and brother, Chris Schaefer, thank you for your endless love and support as I pursue my dreams. You have been there for every curveball life has thrown at me, and I hope that I continue to make you
proud. To my Idaho tribe, thank you for checking in on me from time to time to make sure I stayed sane. To my significant other, Jason Tobin, thank you for letting me put 100% into my dissertation, which has often meant you have had to do more than your fair share of laundry, dishes, and dog walking. Thank you for your constant encouragement, for letting me practice my dissertation defense with you, and for reminding me just how capable I am of achieving great things, especially with you by my side. Last, but certainly not least, to my circle of friends (Amanda Virzi, Annette Hays, Devon Tobin, Kris and Ashly Shore, Lisa DuSavage, and Manie Homan), who have listened to me talk for hours about the dissertation process, thank you for continuing to be a part of my journey, and for understanding when I had to miss a dinner or event so I could commit to my degree.

There is one other exceptionally important group of people I would like to acknowledge: the student participants in my evaluation. It is by striving to understand the world through your eyes and lived experiences that we, as higher education administrators, can continue to provide opportunities that aid in your academic, personal and professional development – the reason I choose to work in higher education.
DEDICATION

Dedicated to my father, Randy Schaefer. Thank you for instilling in me the importance of education from a young age; without your endless guidance,

I wouldn’t be who I am today.
## TABLE OF CONTENTS

**LIST OF TABLES** ....................................................................................................................... vii  
**LIST OF APPENDICES** .............................................................................................................viii  
**PREFACE: INTRODUCTION TO THE DISSERTATION OF PRACTICE** .........................iv  

Chapter  

1. DISSERTATION PROPOSAL1  
   
   Introduction ........................................................................................................................1  
   Purpose Statement ..............................................................................................................4  
   Literature Review .............................................................................................................5  
   Pipeline Programs ...........................................................................................................5  
   Pipeline Programs and URM Populations ......................................................................8  
   Evaluations of Pipeline Programs ................................................................................11  
   Program Overview ...........................................................................................................13  
   Program History ...............................................................................................................14  
   Program Structure ..........................................................................................................15  
   Program Participant Recruitment and Selection .........................................................18  
   Research Design .............................................................................................................18  
   Methodological Approach ..............................................................................................19  
   Evaluation Model ...........................................................................................................20  
   Data Collection ..............................................................................................................24  
   Interview Participants ....................................................................................................25
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DISSERTATION PROPOSAL</td>
<td></td>
</tr>
<tr>
<td>Data Analysis</td>
<td>28</td>
</tr>
<tr>
<td>Criteria for Quality</td>
<td>31</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>32</td>
</tr>
<tr>
<td>Positionality</td>
<td>33</td>
</tr>
<tr>
<td>Significance</td>
<td>36</td>
</tr>
<tr>
<td>2. A MIXED METHODS PROGRAM EVALUATION OF A PHARMACY SUMMER PIPELINE PROGRAM</td>
<td>40</td>
</tr>
<tr>
<td>Introduction</td>
<td>41</td>
</tr>
<tr>
<td>Program Description</td>
<td>43</td>
</tr>
<tr>
<td>Program Structure</td>
<td>44</td>
</tr>
<tr>
<td>Methods</td>
<td>45</td>
</tr>
<tr>
<td>Evaluation Model</td>
<td>46</td>
</tr>
<tr>
<td>Data Collection</td>
<td>47</td>
</tr>
<tr>
<td>Interview Participants</td>
<td>48</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>49</td>
</tr>
<tr>
<td>Quality of Research Design</td>
<td>50</td>
</tr>
<tr>
<td>Findings</td>
<td>51</td>
</tr>
<tr>
<td>Outputs</td>
<td>51</td>
</tr>
<tr>
<td>Increased Knowledge and Awareness of Pharmacy</td>
<td>53</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>2. A MIXED METHODS PROGRAM EVALUATION OF A PHARMACY SUMMER PIPELINE PROGRAM</td>
<td></td>
</tr>
<tr>
<td>Development of a Professional Network</td>
<td>54</td>
</tr>
<tr>
<td>Confidence in Ability to Succeed in Pharmacy</td>
<td>56</td>
</tr>
<tr>
<td>Outcomes</td>
<td>58</td>
</tr>
<tr>
<td>Increased Interest in the Field of Pharmacy</td>
<td>58</td>
</tr>
<tr>
<td>Increased Motivation and Decision to Pursue a PharmD Solidified</td>
<td>60</td>
</tr>
<tr>
<td>Increased Interest in Applying to the PharmD Program</td>
<td>61</td>
</tr>
<tr>
<td>Impacts</td>
<td>63</td>
</tr>
<tr>
<td>Discussion</td>
<td>64</td>
</tr>
<tr>
<td>Limitations and Implications for Future Program Evaluations and Research</td>
<td>70</td>
</tr>
<tr>
<td>Implications for Practice</td>
<td>73</td>
</tr>
<tr>
<td>Conclusion</td>
<td>74</td>
</tr>
<tr>
<td>3. SCHOLARLY REFLECTION</td>
<td>75</td>
</tr>
<tr>
<td>How I Chose This Topic</td>
<td>77</td>
</tr>
<tr>
<td>Research Challenges and Surprises</td>
<td>78</td>
</tr>
<tr>
<td>Application to Practice</td>
<td>82</td>
</tr>
<tr>
<td>Applications to Research</td>
<td>84</td>
</tr>
<tr>
<td>Final Thoughts</td>
<td>85</td>
</tr>
</tbody>
</table>
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Logic Model</td>
<td>36</td>
</tr>
<tr>
<td>2. Data Sources</td>
<td>50</td>
</tr>
<tr>
<td>3. PRP Participant Race &amp; Ethnicity Data 2018 – 2021</td>
<td>43</td>
</tr>
<tr>
<td>4. Logic Model</td>
<td>46</td>
</tr>
<tr>
<td>5. Interview Participant Demographics</td>
<td>49</td>
</tr>
<tr>
<td>6. Differences in Interest and Perceptions of the Field of Pharmacy Pre vs. Post Test</td>
<td>52</td>
</tr>
<tr>
<td>7. Regional Satellite Campus PharmD Applicant Race &amp; Ethnicity Data</td>
<td>64</td>
</tr>
<tr>
<td>8. Regional Satellite Campus Student Population Race &amp; Ethnicity</td>
<td>65</td>
</tr>
</tbody>
</table>
## LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. PHARMACY READINESS PROGRAM SCHEDULE</td>
<td>91</td>
</tr>
<tr>
<td>B. INTERVIEW INVITATION EMAIL</td>
<td>97</td>
</tr>
<tr>
<td>C. INTERVIEW PROCEDURE</td>
<td>100</td>
</tr>
<tr>
<td>D. FREQUENCY CHART</td>
<td>103</td>
</tr>
<tr>
<td>E. CONSENT FORM</td>
<td>107</td>
</tr>
</tbody>
</table>
INTRODUCTION TO THE DISSERTATION OF PRACTICE

The dissertation of practice is a scholarly endeavor that explores a complex problem of practice embedded in the work of a professional practitioner (Perry, 2015). Students can choose between a research project or program evaluation. The purpose of the dissertation of practice is to prepare students to become scholar practitioners, who use practical research and inquiry as well as applied theories to improve their practice while contributing to the knowledge base in the field of higher education and student affairs.

The dissertation of practice consists of three artifacts: (a) The dissertation of practice research proposal (Chapter 1): The purpose of this chapter is to showcase the proposal that guided the research. The purpose of my dissertation was to complete a program evaluation for a summer pipeline program to determine if it was meeting its outcomes and intended impacts. In the dissertation proposal, I discuss my plans for data collection and analysis as well as share important background about the program and guiding literature. (b) A manuscript for a scholarly publication (Chapter 2): After conducting my program evaluation, I developed a manuscript that could be published in a scholarly journal in my field. The manuscript discusses the findings of my evaluation. Specifically, I highlight how the summer pipeline program had a positive impact on increasing the number and diversity of applicants to the college of pharmacy where the pipeline program was located as well as the achieved outputs and outcomes of the program that led to this positive impact. The manuscript includes implications for other practitioners, who
may be interested in the development or restructuring of a pipeline program or may be looking to conduct a similar program evaluation. (c) A scholarly reflection (Chapter 3): In the final chapter, I reflect on the dissertation process and discuss applications of the research and newly gained skills to my professional practice and future engagement in research. I highlight my learning and journey during the dissertation process and share concluding thoughts for this dissertation of practice.
CHAPTER 1

DISSERTATION PROPOSAL

Introduction

In 2008, a national workforce study suggested that the need for pharmacists would continue to grow resulting in a shortage of approximately 38,000 pharmacists by 2030 (National Center for Health Workforce Analysis [NCHWA], 2008). To address this potential shortfall, universities across the country created additional colleges of pharmacy. The number of colleges grew from 78 in 2008, to 143 in 2019 (American Association for Colleges of Pharmacy [AACP], 2019). Unfortunately, initial projected growth estimates within the profession were incorrect. Instead of the 16% projected growth that was suggested in 2008, a reevaluation suggested a minimal 6% growth within the profession by 2030 (Health Resources and Services Administration [HRSA], 2018). As the updated career outlook projections made their way to those interested in a career in healthcare, applications to colleges of pharmacy declined. Due to this decrease in interest coupled with a sharp increase in the number of PharmD degree programs, colleges of pharmacy are now facing a shortage of applicants to their programs (AACP, 2019). During the 2012-2013 application cycle, applicant numbers were at an all-time high, with a total of 17,617 applications. In comparison, during the 2019 – 2020 application cycle, there were only 13,988 applicants (AACP, 2020). This application number was lower than in previous years and lower than applications received for other health care professional
programs, such as dentistry, medicine, and nursing (Buerhaus et al., 2017; Pavuluri et al., 2019; Taylor et al., 2016).

In addition to a lack of applicants, colleges of pharmacy are also struggling to recruit and retain a diverse group of students. In the early 2010’s, only 27 percent of pharmacists in the United States came from underrepresented minority (URM) backgrounds according to the U.S. Department of Health and Human Services (Health and Human Services, 2014). For the purpose of this evaluation, URM backgrounds are defined as Black, Latinx, and Native American (Health and Human Services, 2014). Recruiting a diverse student population is not a struggle that is faced only by PharmD programs. Healthcare throughout the country lacks the diversity that is representative of the U.S. population (Chrisholm, 2004; Crabtree, 2007; Curtis, 2019; Hayes, 2008). A lack of diversity in healthcare is problematic in many ways. Perhaps one of the most alarming issues stemming from a lack of diversity in healthcare is that underrepresented populations lack access to healthcare and, when they do receive health services, report that the care received is not of good quality (Saha & Shipman, 2006; Williams et al., 2008). Studies show that a diverse (race, ethnicity, and sexual orientation) health sciences workforce can lead to overall improvements in healthcare, in particular related to healthcare services for underrepresented populations (Chrisholm, 2004; Crabtree, 2007; Curtis, 2019; Hayes, 2008). This is frequently attributed to the trust and rapport that community members are more likely to build with practitioners who are from similar backgrounds as themselves. With the important role pharmacists play in the greater healthcare team, it is thus essential to increase racial and ethnic diversity in the field of pharmacy.
To increase their number of applicants, in general, and combat a lack of diverse applicants to their PharmD program, a college of pharmacy located on a regional satellite campus, located in the Midwest, has researched and employed several strategies to increase interest in the field of pharmacy, and more specifically the PharmD degree at the college of pharmacy. One of these strategies was the creation of a pipeline program. Pipeline programs emerged as a recruitment strategy as early as the 1970’s, with goals of growing knowledge of and awareness about a specific career pathway (Katz et al., 2016). The college of pharmacy located at a regional satellite campus in the Midwest developed a summer pipeline program, called Pharmacy Readiness Program (PRP), to help undergraduate students explore careers in pharmacy, while also attracting them to apply to the regional satellite campus. PRP began in 2015 as a five-day, intensive look into the field of pharmacy from the student perspective and has continued to grow into a multi-session pipeline program that occurs each summer.

In the seven years that this program has been in existence, no comprehensive evaluation of the program has been conducted. During that time, there have been several changes to the structure of the program, based on changes in leadership and a global pandemic. Whether these changes have improved or hurt the program is unknown. Moreover, to continue to offer PRP after the summer 2022 sessions, the regional satellite campus must reapply for grant funding to support the program. For these reasons, it is important that a programmatic evaluation is completed, in an effort to provide evidence that the program is meeting its goals and to adapt future iterations of the program to meet the needs of the community and the college of pharmacy located at the regional satellite campus.
Purpose Statement

The purpose of this program evaluation is to explore the effectiveness of the PRP in meeting its programmatic goals of increasing the number of PharmD applicants and diversifying the applicant pool of PharmD applicants. The evaluation will focus specifically on exploring changes in number of applicants and the diversity of the applicant pool of the PharmD program at the regional satellite campus. For the purpose of this program evaluation, underrepresented students in the field of pharmacy are defined as individuals who identify as Black/African American, Hispanic/Latino, or American Indian. In addition, the evaluation will also strive to gain insights into (a) the ways in which the program fosters students’ interest in pursuing a PharmD degree, particularly for students typically underrepresented in the field of pharmacy; (b) the way in which the program increases students’ awareness of educational and career opportunities in pharmacy in the area; and (c) how satisfied participants are with the program. This research will guide future iterations of PRP. The data analysis will also inform the application process to secure future grant funding for PRP pipeline program. The questions guiding this program evaluation are:

1. How does PRP influence the number of applicants in the PharmD program at the regional satellite campus?
   a. How have number of applicants changed from 2015 to 2021?
   b. How does participating in PRP influence students’ interest in the PharmD degree?
   c. How does participating in PRP influence students’ awareness of educational and career opportunities in pharmacy in the area?
d. How satisfied are students with PRP?

2. How does PRP influence the number of underrepresented applicants in the PharmD program at the regional satellite campus?
   a. How has the diversity of applicants in the PharmD program changed from 2015 to 2021?
   b. How does participating in PRP influence students’ interests in the PharmD degree for students who are typically underrepresented in the field of pharmacy?

Literature Review

Pipeline programs are a highly regarded method used for recruiting students to the field of pharmacy. Pipeline programs at all levels of the educational timeline are intended to target, enroll and support the graduation of students, while simultaneously diversifying the healthcare workforce (AACP, 2019; Kats et al., 2016; Myers et al., 2012). This literature review examines the breadth and depth of knowledge surrounding the high impact practice of pipeline programs, first on a large scale, then specifically for URM populations. Best practices and barriers of success within pipeline programs are also addressed.

Pipeline Programs

Pipeline programs exist within many different fields of study, such as pharmacy, medicine, nursing, and other STEM-related fields (Fritz et al., 2016; McLaughlin et al., Phelan et al., 2017; 2020; Taylor et al., 2019) and throughout many stages of the education system. Sometimes also known as summer enrichment programs, pipeline programs are designed to provide early exposure to a specific career field in an effort to increase admissions into targeted
educational pathways (Fritz et al., 2016). These programs usually contain a series of contact points with the same prospective students in an effort to prepare specific groups of students to help them be successful in their future academic and career paths (Smith, 2009a).

A primary purpose of pipeline programs is to recruit URM students to the healthcare field in hopes of diversifying the healthcare workforce (Bouye et al., 2016). In addition to preparing a diverse group of students to enter a specific workforce, these pipeline programs serve other purposes as well. Research exists that shows that pipeline programs are crucial in increasing the economic well-being of participants while also improving postsecondary academic readiness (Smith, 2009a). This is important as students coming from poor urban areas lack adequate pre-college science and math exposure and mentoring, and are therefore often lost by STEM degree paths because of their poor academic performance (Phelan et al., 2017). Such programs also increase the possibility of being accepted into graduate level programs (Smith, 2009a).

According to Chang et al. (2016), early exposure to the medical field is known to play an influential role in generating interest in health care careers. Therefore, healthcare career pipeline programs have a goal of inspiring and sustaining student interest in the medical field from an early age. Pipeline programs provide an opportunity to educate prospective students about the importance of community and culture within healthcare, foster networking between peers, and provide knowledge of the process for applying and enrolling in PharmD programs (Holley, 2013). Pipeline programs provide an opportunity for educators to build authentic relationships with prospective students, provide them opportunities for exposure to the profession that are meaningful, and increase touchpoints (Curtis et al., 2019; Grigalunas, 2018). If educational
professionals can work with pharmacists and practitioners, educators can also be a positive voice for the field of pharmacy (Darbishire et al., 2020; White et al., 2013).

Existing research surrounding pipeline programs shows that for pipeline programs to be successful, practitioners must consider limitations participants may be facing that restrict their access to such programs, like financial restraints and other commitments. Scholarships or tuitions waivers for pipeline programs are one way to alleviate financial burdens of participating in such programs. It is important to address such limitations early, in an effort to be accessible for a wide demographic of participants (Stephenson-Hunter et al., 2021). Pipeline programs often occur during summers and on weekends in an effort to provide access to a larger demographic of student (Chang et al., 2016). As a result of the COVID-19 pandemic, program developers have additionally expanded programming to virtual platforms in an effort to continue to reach prospective participants (Darbishire et al., 2020).

Literature highlights several pieces of the program curricula that are essential to participant success (DiBaise et al., 2015; Fritz et al., 2016; Kemp et al., 2011) These curricula include math and science skill development, mentoring, admissions workshops, financial support, standardized test preparation seminars, and exposure to professional options within the specific career field (DiBaise et al., 2015; Smith, 2009a). Self-esteem and cultural awareness must also be focuses of pipeline programs if they are to be successful in developing future healthcare professionals (Kemp et al., 2011). Workshops that emphasized communication skills and engagement helped broaden social connectedness (Fritz et al., 2016).

In order for pipeline programs to thrive, they require a strong amount of institutional support, in regards to both finances and staffing. Programs with a demonstrated commitment and
that have been planned strategically have shown to be most successful (Smith, 2009a). Strong administration, organizational support, knowledgeable faculty, engaging learning environment are other components of a strong pipeline program (Kemp et al., 2011).

Research from McLaughlin et al. (2020) showed that students in sciences, technology, engineering and mathematics (STEM) pipeline programs or pharmaceutical sciences specific pipeline programs felt that the program positively impacted their desire to pursue a STEM career. The participants also highly valued what they learned in the program. Beginning interactions in pipeline programs, specifically within the healthcare sector, prior to a participants’ junior or senior year of college seems to be most effective, as students at that age are starting to explore different careers (Fritz et al., 2016).

**Pipeline Programs and URM Populations**

Pipeline programs have been used to increase the representation of URM groups in health professions programs (DiBaise et al., 2015; Fritz et al., 2016; Smith, 2009a). Healthcare pipeline programs are designed to increase the representation of African American, Latino, American Indian and other underserved groups in the health professions (Smith 2009a). Often, URM students face several obstacles in terms of matriculating into healthcare career programs. Obstacles include a lack of academic support structures (White et al., 2013), feelings of isolation and bias in undergraduate studies (Caldwell et al., 2019; DiBaise et al., 2015), and a lack of access to mentors and support systems (Caldwell et al., 2021; Satcher et al., 2005).

Diversity encompasses more than race and ethnicity (Smith, 2009b). To improve the diversity of the healthcare workforce, programmatic definitions of URM status should align with federal definitions as identified by the US Department of Health and Human Services (Smith,
2009b). According to the National Center for Science and Engineering Statistics (NCSES), a URM is any U.S. citizen who identifies as Black/African American, Hispanic/Latino, or American Indian. Two additional populations, women and persons with disabilities, are also underrepresented in the field of healthcare (NCSES, 2017).

To truly serve a diverse participant population, individuals who plan pipeline programs should strive to align the mission and goals of the program with institutional missions and goals surrounding diversity (Smith, 2009b). If pipeline programs will be successful in meeting programmatic goals of achieving racial and ethnic diversity amongst participants, discussions about diversity, equity and inclusion must also take place during program development and inception (Caldwell et al., 2019). These types of discussions must also be included in assessment and evaluation of the programs (Fritz et al., 2016).

URM students tend to face a lack of academic support structures, coupled with negative previous academic experiences (White et al., 2013). To counter this lack of support, administrators should strive to role model diversity by having a diverse population in leadership and faculty positions, and articulate and publicize a commitment to diversity and inclusion (White et al., 2013). Additionally, students who identify as Black or Hispanic/Latino have often experienced low expectations at their colleges/universities (Caldwell et al., 2019). Extra effort and attention by program administrators and faculty can provide the push these students need to be successful in their career paths.

This specific group of students frequently experience feelings of isolation and bias in their undergraduate studies (Caldwell et al., 2019; DiBaise et al., 2015). This is likely attributed to a lack of interaction with professionals who they can relate to, as well as a lack of access to
mentors in the field. Colleges of pharmacy should provide intentional outreach to URM populations. Further, there should be an emphasis on students’ cultural wealth, healthcare, leadership, volunteer, customer service experiences when promoting pipeline program application (Darbishire et al., 2020; Keshishian et al., 2010; Pavuluri et al., 2019). Colleges of pharmacy should provide opportunities for education about the profession of pharmacy to students and their parents or caregivers beginning in high school (Curtis et al., 2019).

Underrepresented populations of students typically have limited access to career development, mentorship, and exposure to field experiences during their undergraduate experiences (Caldwell et al., 2021; Satcher et al., 2005). Pipeline career programs have the opportunity to address all of these barriers and provide positive educational experiences that will aid in an increased interest in healthcare careers. Commonly, pipeline programs include a series of numerous contact points throughout the educational career of the URM student, focused on preparing student to enter health professions. Pipeline programs should focus on recognition of the value of participants’ individual backgrounds to the program, and to the future of healthcare (Holley, 2013). To provide the type of support that students from URM populations need to be successful, there must be a focus on health care disparities within program curricula. Health care disparities curriculum helps to keep URM students motivated and engaged while exploring health professions (Fritz et al., 2016).

As Caldwell et al. (2021) suggests, in order to engage and recruit URM students to pipeline programs, it is important to use a multipronged approach. Specifically, it is important to establish institutional linkage to other institutions. With these institutional linkages, students can be recruited by utilizing professors, student affairs staff, and administrators from a variety of
locations. Equally important is establishing collaborative relationships with local healthcare providers. Local collaborative partnerships allow pipeline program administration to have opportunities to connect with current healthcare workers who may be looking to advance their careers within the realm of healthcare. Finally, it is important to use other interpersonal contacts to recruit participants for pipeline programs. For example, these contacts could be alumni or social media followers. Additionally, program developers should be intentional about outreach in terms of promoting the program to diverse populations for future iterations (McLaughlin et al., 2020).

Evaluations of Pipeline Programs

Evaluations are designed to help individuals and groups focus on issues of importance within their organizations. Common reasons for conducting an evaluation include helping practitioners to gain insights or determine needs, find areas in need of improvement or changes, assess program effectiveness, and address issues of human rights and social justice (Mertens & Wilson, 2019). Program evaluations have been used to understand the effectiveness of pipeline programs (Briskey et al., 2017; Phelan et al., 2017). These evaluations, however, do not clearly show whether or not pipeline programs are effective. Several barriers exist to understanding the effectiveness of pipeline programs. First, formal evaluations of pipeline programs are scarce, and those that do exist are limited. When analyzing existing research, there is a lack of sufficient quantity of evaluations of well-described pipeline programs. Second, there is also a lack of documented outcome measure for programs that exist, and a lack of matched comparison groups for students who did not participate in pipeline programing (Phelan et al., 2017). Third, much of the research in existence surrounding pipeline programs lacks an explanation of the educational
theory that was utilized to develop the programs, which makes it difficult to use prior evaluative data to make comparisons.

Although access to evaluative data and information surrounding pipeline programs is limited, there is some data to support the success of pipeline programs. The University of Nebraska reported an increased diversity in the health sciences programs following the inception and execution of the Nebraska University Pre-Admissions to the Health-Sciences (NU-PATH) pipeline program; past participants from The Robert Wood Johnson Foundation Minority Medical Education Program (MMEP) experienced an increased probability of medical school acceptance after attending MMEP programming (Smith, 2009a). The SEALS program, developed for students at the Pritzker School of Medicine, saw similar results, with participants feeling more prepared to become a physician in the future (Smith, 2009a). Pre- and post-participation personal statement scores also increased for participants (Briskey et al., 2017). Participants in the Drexel University College of Medicine mini-medical school stated that participation in the program helped to clarify students’ questions about medical field (Briskey et al., 2017). A 2009 report from the US Department of Health and Human Services titled, “Pipeline Programs to Improve Racial and Ethnic Diversity in the Health Professions: An Inventory of Federal Programs, Assessment of Evaluation Approaches, and Critical Review of the Research Literature” concluded that pipeline programs are regularly associated with positive outcomes for individuals who identify as racial/ethnic minorities and/or who come from disadvantaged backgrounds.

Existing research and program evaluations indicate that pipeline programs can be quite successful (Smith, 2009b). This type of recruitment initiative is consistently associated with
positive outcomes for racial/ethnic minority and disadvantaged students (Awe & Bauman, 2010; Danek & Borrayo, 2012; Johnson & Bozeman, 2012; Mason et al., 2017; Myers et al., 2012; Toney, 2012; US Department of Health and Human Services, 2009). However, there are limitations to the existing research and programmatic evaluations. Research is rather limited when the focus is specifically on pipeline programs developed to get students engaged in the career field of pharmacy. Additionally, there is little known about the structure of programs that have been evaluated, so findings from those evaluations may not transfer to this evaluation. The local context where the program evaluation takes place will shape the program and its’ effectiveness, which may make it more challenging to generalize across other pipeline programs. Finally, pipeline programs all have unique program outcomes and impacts, which could be evaluated differently.

Program Overview

The program being evaluated, PRP, is a summer pipeline program hosted at a College of Pharmacy on a regional health sciences satellite campus located approximately 90 miles from a major metropolitan area in the Midwest. PRP is a recruitment tool designed to help recruit and retain prospective students from their initial interest in the College of Pharmacy at the regional health sciences campus through matriculation into the PharmD program. PRP has goals of attracting and retaining a diverse population of PharmD applicants from the local community. Approximately 50 students participate in PRP annually. Since 2018, there have been 219 total participants. Approximately 29% of all participants come from URM populations. 53 of the past 219 participants have applied to and attended the College of Pharmacy to earn their PharmD degree as of the 2021 PharmD application cycle.
This pipeline program is developed and executed by the Office of Student Affairs within the College of Pharmacy at this regional health sciences campus. This satellite campus is located approximately 90 miles northwest of the main campus location, which is in a large metropolitan city in the Midwest. Approximately 130 students are enrolled in the PharmD degree program at this regional satellite campus.

Program History

PRP originated in 2015. Over the course of its existence, PRP has undergone several programmatic changes. Initially, PRP was a one-week session, with a capacity of 30 participants, which occurred each summer for 4.5 days. Each day had a specific specialty focus within the career field. Beginning in 2018, PRP was expanded to include two, 1-week sessions, with a capacity of 25 students at each session. These sessions mirrored one another, but gave a greater participant capacity to the PRP.

Due to the COVID-19 pandemic, the 2020 session was completely virtual. This event was a half-day seminar with shorter presentations, but still had hands-on activities and opportunities for networking and professional development; this event was free of charge for participants, and approximately 50 individuals participated. The 2021 PRP was also held virtually. However, the virtual program was built into a more robust format; the program was 4 days, had 3 hands-on activities over the span of 4 days, and hosted a significant amount of presentations and panels for participants. There were approximately 40 participants. Future iterations of PRP will return to a two-session format, each with a capacity of 25 participants.
Program Structure

All participants selected to participate in PRP are required to pay a $125 registration fee. This fee covers the cost for all lab supplies throughout the institute, in addition to two meals daily, snacks, and transportation to off-campus activities and tours. Participants are also able to pay an additional fee for lodging for the week of the program. This fee covers the majority of the total cost paid for lodging at a local hotel in addition to transportation to and from the hotel each morning. The college of pharmacy receives a grant from a local donor to support total programmatic costs. As a result of this grant funding, participants from four surrounding counties pay a reduced fee of $60 to participate in the institute.

Participants in the in-person program are encouraged to arrive to the city where the regional satellite campus is located on the Sunday evening prior to the first day of their session. For participants who chose to stay in provided lodging for the duration of the in-person program, staff members arrive to the hotel on Day 1 of PRP to pick them up and bring them to regional satellite campus. Once on campus, students are able to eat breakfast and are provided opportunities for small-group and large-group networking with other participants and with current PharmD students. During virtual sessions, breakfast is not provided, but ice-breaker activities are done to allow participants to learn a little bit more about one-another. Each day of PRP is facilitated by faculty members from various different specialty areas of pharmacy along with current students who serve as interns, in both the virtual and in-person format. College of Pharmacy administration is also present throughout the week to answer questions and to network with participants, regardless of program format.
For in-person sessions, each day of PRP provides focused opportunities to allow participants to network with one-another and to learn about the surrounding community. Each day of the in-person session begins at approximately 8am and ends at approximately 5pm. Virtual sessions take place from 9am – 1pm each day. During the lunch hour each day, for in-person sessions, and at the conclusion of the days’ activities for virtual sessions, participants are able to meet with a recruiter to have their unofficial transcripts reviewed and to discuss their individual educational pathways to a PharmD degree at the College of Pharmacy. Each day, students attend presentations about various aspects of the PharmD degree, including the COP experiential education experience, the Rural Pharmacy concentration, admissions to the College of Pharmacy, and a current student-led presentation about the student experience at the regional satellite campus. Every evening there was an optional social activity for program participants and interns who participate in an in-person format. Additional fees for these social activities were at the expense of the participants. Due to the global COVID-19 pandemic, social activities were unavailable for virtual sessions.

Day one focuses on community pharmacy. Participants spend the morning learning from a panel of professionals about the pros and cons of community pharmacy. Following the professionals panel tour, in-person participants tour a chain pharmacy and a locally owned pharmacy. Day two focuses on clinical (hospital) pharmacy. In-person participants spend time in the sterile compounding lab learning how to make intravenous medications and attended mini-lectures about specific infectious disease states and treatment of those diseases. The afternoon of day two, participants tour a hospital pharmacy and talk to clinical pharmacists about their role as a part of a patients’ medical care team. Virtually, participants attend mini lectures about specific
infectious disease states, and participate in hands-on lab activities at home. Participants in virtual sessions are also able to take a live virtual tour of the hospital pharmacy, led by a current faculty member.

Day three focuses on ambulatory care pharmacy. Hands-on activities include the creation and implementation simulated patient medication regimens, and mini-lectures focused on management of specific disease states. In-person participants additionally practice giving vaccinations to an orange. Day four focuses on pharmaceutical research. In-person participants are able to tour a local research facility to learn about research and development within pharmacy. Additionally, participants spend dedicated time in the compounding lab to produce various simulated pharmaceutical treatments, such as chocolate troches, lip balms, creams and gummy-bears. While virtual participants are unable to tour a lab, they are able to participate in the aforementioned hands-on lab activities. Student attend mini-lectures presented by current PhD students about their present research, and lectures from program faculty about pharmaceutical research opportunities. At the conclusion of day four, students are provided an opportunity to ask questions about any aspect of the PRP experience. Students also received a certificate of completion of the program and participated in program completion celebration with current COP faculty, staff, and students. For a comprehensive look at schedules from past sessions, see Appendix A.

**Program Participant Recruitment and Selection**

There are several practices used to recruit participants for the PRP. The COP college recruiter sends out targeted emails to undergraduate advisors at institutions where there are established relationships, and a targeted outreach campaign to all students in the COP customer
relations management system, which encompasses any individuals who have previously inquired about the College of Pharmacy. The Office of Student Affairs in partnership with the college communications department, additionally create and execute targeted social media campaign that is vetted through and executed by the college communications department.

Participants are required to complete an application and recommendation letters that supported their application. The program application asks demographic questions, such as race and ethnicity, gender, and geographic location. The application also asks questions about prior education experiences, including previous educational institutions attended, major fields of study, and cumulative and math and science GPA. Preference is given to applicants who had high GPA in their undergraduate institutions and individuals in a local 90-mile radius (due to grant funding). Program administration also reviews applications on an individual basis to ensure that each group of participants is diverse in race/ethnicity and gender.

Research Design

To explore how, if at all, PRP supports its’ programmatic goals of increasing the number of PharmD applicants and diversifying the applicant pool of PharmD applicants, I will conduct a program evaluation (Mathison, 2005; Mertens & Wilson, 2019). Program evaluations use formal methodologies to provide empirical evidence in decision making contexts (Mertens & Wilson, 2019). This evaluation is guided by the pragmatic paradigm. This paradigm focuses on data that will be useful for stakeholders (Mertens & Wilson, 2019). Further, the pragmatist perspective allows evaluators to study what is of interest to the evaluators, while utilizing results of evaluations to “bring about positive consequences” (Mertens & Wilson, 2019, p. 86). The pragmatic paradigm will allow this evaluation to provide evidence for the necessity for grant
funding. This program is in its’ seventh and final year of the current grant, so it is imperative at
this stage of the program that stakeholders (grant-funders) are provided with evidence that
programmatic goals are met. Additionally, by addressing the needs of the stakeholders, both
administrators and program participants, this evaluation will serve as a foundation for continued
evolution and development of PRP. The administrators of PRP plan to expand PRP into a multi-
level experience if funding is renewed and expanded in future years.

Methodological Approach

I will use an internal, summative program evaluation approach (Mertens & Wilson, 2019)
to analyze the impacts of PRP, a pipeline program developed with a goal of increasing the
applicant pool for the regional college of pharmacy, at a regional satellite campus for a public
university in the Midwest. Internal evaluations are conducted by individuals who are employees
of the organization where the evaluation takes place (Mertens & Wilson, 2019). I currently serve
as the Director of Student Affairs for the regional satellite campus where PRP takes place, and
am responsible for the development and execution of PRP; thus, I am an employee of the
organization and will be conducting this internal evaluation.

A summative program evaluation is completed at the end of a program for the purpose of
making decisions about the program (Mathison, 2005). Summative evaluations have the purpose
of making decisions about the future of the evaluand. The purpose of this evaluation is to
determine the worth of the evaluand (Mertens & Wilson, 2019), for the stakeholders of the
program. An evaluand is the specific person, program, idea, etc., that is being evaluated (Mertens
& Wilson, 2019), in this case PRP. Worth can be defined as if the evaluand has value in a
particular situation or instance (Mertens & Wilson, 2019). For the purpose of this evaluation,
worth is determine by the program’s ability to increase interest in a PharmD career and the diversification of applications to the PharmD program.

Summative evaluations utilize quantitative data and qualitative data to inform decisions made about the evaluand (Mertens & Wilson, 2019). I will thus utilize a convergent parallel mixed-methods approach to data collection, merging quantitative and qualitative data to gain a comprehensive understanding of the program (Creswell & Creswell, 2018). Specifically, quantitative data I will use will include participant demographic information, admissions data, and closed-ended pre-existing survey results. Qualitative data will be in the form of open-ended pre-existing survey results and semi-structured participant interviews.

Evaluation Model

The Kellogg Logic Model (WK Kellogg Foundation, 2004) will guide the evaluation of the effectiveness of PRP on student recruitment. This logic model has five major components: inputs, activities, outputs, outcomes, and impacts (See Table 1). Each of these components is described in detail below.

Inputs refers to the resources needed to execute a successful PRP (WK Kellogg Foundation, 2004). Resources include funding to support the program, staffing to develop and execute the program, the physical spaces for the program, program marketing materials, collaboration with local undergraduate institutions to promote the program, and program participants. PRP receives partial funding from a local community grant foundation. Every three years, there is a reapplication process for grant funding. The College of Pharmacy covers partial costs, and participants pay a registration fee as well. In addition to funding that is needed to support the PRP, there are several other required inputs as well. Faculty and staff members, as well as
current students and practitioners, work to develop and execute the PRP each year. This program, when executed in person, also requires physical space to hold various sessions. PRP participants are another crucial input of the PRP.

Activities refer to what the program does with the allotted resources/inputs (Kellogg, 2004). For PRP, activities include PRP participant engagement within the four-day institute, utilization of academic advising opportunities provided, participation in optional networking and social opportunities, and development of professional relationships through participation in various institute sessions. Students spend each of four days of PRP focusing on a specific career path within the field of pharmacy. Students participate in hands-on compounding lab activities every day. Additionally, students travel to different locations in the greater area to observe different career pathways. Examples include visiting a hospital pharmacy, several community pharmacies, and a local research and development company. Another facet of PRP is the opportunity for students to attend PharmD level lectures in an effort to experience what it is like to be a pharmacy student. Students also have opportunities to interact with current PharmD students in an effort to learn about the day-to-day experiences of student pharmacists and to start to envision themselves as future pharmacists.
### Table 1

**Logic Model**

<table>
<thead>
<tr>
<th>Resources/Inputs »</th>
<th>Activities »</th>
<th>Outputs »</th>
<th>Outcomes »</th>
<th>Expected Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding to support program</td>
<td>Hands-On compounding lab activities</td>
<td>40 hours of Pharmacy experience</td>
<td>Knowledge of the field of pharmacy for participants</td>
<td>Increased number of applicants</td>
</tr>
<tr>
<td>Faculty &amp; staff to execute program</td>
<td>Daily lectures</td>
<td>Advisor relationship development</td>
<td>Awareness of educational and career opportunities in pharmacy</td>
<td>Diversified applicant pool for regional satellite campus</td>
</tr>
<tr>
<td>Physical space to execute program</td>
<td>Academic Advising Opportunities</td>
<td>Professional relationship development</td>
<td>in suburban city where regional camp is located</td>
<td></td>
</tr>
<tr>
<td>Marketing materials to promote program</td>
<td>Networking events</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographic &amp; tracking data for past pipeline participants</td>
<td>Travel to various pharmacy locations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborators to promote program, including external college advisors, internal recruiter and preceptors</td>
<td>Current student networking opportunities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PRP Participants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Participation in activities produce outputs. Outputs are products of participation in program activities (Kellogg, 2004). For the PRP, participation in the above mentioned activities will provide outputs which include 40 hours of hands-on experience in the field of pharmacy, the development of advising relationships, and the development of professional relationships between current and prospective students. The outputs mentioned above help achieve specific outcomes, the fourth component of Kellogg’s Logic Model. Kellogg (2004) defines outcomes as “the specific changes in program participants’ behavior, knowledge, skills, status, and level of functioning. Short-term outcomes should be attainable within 1 to 3 years, while longer-term outcomes should be achievable within a 4 to 6 year timeframe” (p.2). PRP has several outcomes. PRP strives to make sure students are satisfied with their participation, as a positive experience with the program will likely translate into an increased interest in the field of pharmacy. Second, it is the hope of program administrators that participants will have a greater knowledge base of the field of pharmacy and a better awareness of the educational and career opportunities in pharmacy in the area. Both of these outcomes are short-term outcomes. The last major component is the impact of the program. While similar to outcomes, impacts refer to the long-term, bigger effects caused by participation in a program (Kellogg, 2004). Impacts usually occur as a result of outcomes being achieved. In PRP, anticipated impacts are increased applicants to the regional program by PRP participants and a more diverse applicant pool. Impacts are typically seen within 5 – 7 years of program completion (Kellogg, 2004). PRPs designed for individuals in their first three years of their undergraduate education. It is expected that impacts of this program will be seen within two to three years of participation in the program.
Data Collection

The first data source will be existing documents of pre- and post-tests and surveys from about 100 PRP participants between 2017 and 2021. Participants from the 2021 session who completed pre- and post-tests and surveys were assigned random identifiers to match their pre- and post-test results; this data is therefore confidential. 2017-2020 participants completed surveys at the completion of each day of PRP. 2017 – 2020 data was completely anonymous. The surveys included both closed and open-ended questions on participant satisfaction with their participation in PRP and knowledge gained from attendance and participation in PRP, focusing in particular on participants’ increased awareness about opportunities within the field of pharmacy. I will use this data to evaluate if programmatic outcomes are being met, specifically an increased knowledge about opportunities within the field of pharmacy, and participant satisfaction with PRP.

The second data source will be semi-structured interviews with past PRP participants about their experiences as participants in PRP. I will conduct 45- to 60-minute semi-structured interviews using a virtual platform. Semi-structured interviews give researchers an opportunity to have some predetermined questions, but answers provided might lead to other questions that were not predetermined (Algozine & Hancock, 2017). This allows researchers to “probe more deeply into issues of interest” (Algozine & Hancock, 2017, p. 47) to researchers. Further, semi-structured interviews provide space for interviewees to freely express their beliefs, perspectives, and worldviews without strict guidance from the researcher (Hancock & Algozine, 2017). Interviews will focus on participant background in pharmacy, student experiences in PRP, and participant career trajectory in the field of pharmacy. This data will also examine whether
programmatic outcomes are being met focusing specifically on the outcomes of greater participant knowledge about the field of pharmacy, more awareness of opportunities in the suburban area where the regional satellite campus is located, and participant satisfaction with PRP. I will also take notes throughout interviews about the attitudes and actions of those I interview, which will help to provide rich, thick descriptions. See Appendix C for interview protocol.

The third data source is demographic data from approximately 210 past participants, such as race/ethnicity and gender. This data source will show the how racial/ethnic make-up of PRP participants has changed over time. Further, this data will provide details surrounding participants’ application to the PharmD program at the regional satellite campus. This data will be used to evaluate if the anticipated impacts of PRP are being realized. Specifically, this data will help evaluate if there has been an increase in the diversity of the PharmD applicant pool as a result of participation in PRP. See Table 2 (below) for more information on the different data sources and the impacts or outcomes they will address.

**Interview Participants**

This program evaluation will use purposive sampling to recruit students who participated in PRP. Purposive sampling is a sampling method by which the researcher intentionally seeks participants who are well informed about the phenomenon being studied, and who will therefore provide the most insight about the case (Mertens & Wilson, 2019). This type of sampling is guided by the research design and objectives of the inquiry (Denzin & Lincoln, 2011; Morse, 2007; Patton, 2002). Eligible participants will be students who participated in PRP from 2017 –
2021. Participants may be current PharmD students at the regional satellite campus, or prospective applicants to the PharmD program.

Participant recruitment and data collection for this program evaluation already started prior to the development of this dissertation proposal. With approval of my dissertation chair, I developed an initial IRB application to allow me to utilize survey data collected in summer 2021 for this project. After IRB approval was received, I collected survey data from 2021 participants. All participants of PRP in summer 2021 were invited to participate in the survey. At the end of the survey, respondents were asked if they would be willing to participate in interviews regarding their summer pharmacy experiences.

Following the approval of the dissertation proposal, an IRB amendment will be submitted that will clarify further data collection processes, focusing in particular on interviews. After the amendment is approached, I will reach out to the 36 individuals who volunteered for interviews in summer 2021. In the email, I will ask if they are still willing to participate in these interviews and provide a consent form that will be reviewed again at the beginning of the interview (see Appendix B for the interview invitation email for summer 2021 participants). In addition, I will also invite individuals who have previously attended PRP that are now enrolled, or planning to apply and enroll, to the regional satellite campus to participate in interviews. These individuals will be recruited because they will have insight into how PRP helped them select the regional satellite campus as their educational institution. Each year, participants provide contact information to program administrators.
<table>
<thead>
<tr>
<th>Impact</th>
<th>Outcome</th>
<th>Data Source</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased number of applicants</td>
<td>Knowledge of field of pharmacy</td>
<td>Survey Data</td>
<td>Frequency table w/ responses ranging from strongly agree to strongly disagree</td>
</tr>
<tr>
<td></td>
<td>Awareness of educational and career opportunities in pharmacy in suburban city where regional camp is located</td>
<td>Interviews with participants</td>
<td>Qualitative data analysis</td>
</tr>
<tr>
<td></td>
<td>Participant Satisfaction with PRP Experience</td>
<td>Interviews with Participants</td>
<td>Qualitative data analysis</td>
</tr>
<tr>
<td>Diversified applicant pool for regional satellite campus</td>
<td>Numbers of applicants from 2015-2021</td>
<td>Survey Data</td>
<td>Frequency table w/ responses ranging from strongly agree to strongly disagree</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Descriptive statistics (number for each year)</td>
<td></td>
</tr>
</tbody>
</table>
As an administrator, I have access to this contact information, which will be used to contact past participants. Since program inception in 2015, there have been a total of 219 participants in PRP. I will contact any current PharmD student who previously participated in the PRP via email to ask them to participate. The email will include information about the program evaluation and its purpose as well as the consent form (See Appendix B for the interview invitation email for these students).

I anticipate a sample size of between 10-15 participants for the interview portion of this program evaluation. If there are more than 15 past participants who respond to interview, I will first select past participants who are current students in the PharmD program, followed by most recent PRP participants. If there are significant differences in participant interview data, I will continue to recruit additional participants until saturation has been reached. Saturation is defined as the point at which data does not illicit any new information (Charmaz, 2006). There will be no financial incentive to those who participate in the semi-structured interviews.

**Data Analysis**

I will use a convergent mixed-methods analysis method to review the data that is collected. A convergent mixed-methods analysis will allow me to analyze the quantitative data and the qualitative data independently, and then integrate the data together in a side-by-side comparison (Creswell & Creswell, 2018). A side-by-side comparison will allow me to first report the qualitative findings, and then discuss how the quantitative findings confirm or disconfirm the qualitative results (Creswell & Creswell, 2018).
I will analyze demographic information of participants and quantitative survey responses prior to starting data collection via interviews. Specifically, I will review past participant descriptive statistic data, for approximately 210 participants, to look at trends surrounding enrollment and demographics of past participants. I will determine if there are increases or decreases in URM participation from year to year. After I analyze existing demographic data, I will analyze existing data from close-ended survey responses. I will review responses that are focused on participant satisfaction and future plans to enroll in a PharmD program, then generate a frequency table, to see the percentage of students who were satisfied with the PRP each year. I will review open-ended survey responses to determine if any general themes emerge. From these three sets of data, I will generate follow-up questions that will inform my semi-structured interviews.

After collecting interview data, I will move to the next phase of data analysis. This second phase will be looking at qualitative data from the semi-structured interviews. Analysis of qualitative data will occur concurrently with data collection, as Charmaz (2006) notes that it is important to analyze data early in order to develop themes and know when data saturation is reached. I will use the constant comparative method to analyze qualitative data. Utilizing the constant comparative method means continuously comparing data with other data until there is no longer a variation in the emerging themes (Glaser, 1996). This analysis technique will allow me to differentiate group codes from different interviews together to generate categories and themes, and will further allow me to differentiate between those categories and/or themes (Corbin & Strauss, 2008). The first step of analyzing data will be to descriptively code the data. Descriptive coding data refers to the process of categorizing data with a short name that
summarizes and accounts for each piece of data (Charmaz, 2006). My first round of descriptive coding will consist of open coding. Open coding is when the evaluator attaches a label to data, which then generates categories and defines properties of those categories (Strauss & Corbin, 1990). This type of coding can be one on a sentence-by-sentence basis, a paragraph-by-paragraph basis, or a unit-by-unit basis (Cohen et al., 2018). To code the data, I will review the transcriptions and organize the data into chunks, or codes (Charmaz, 2006).

After I have used the transcriptions and notes about the interviews to complete my first round of coding and have identified open codes, I will then use axial coding for my second round of coding. Axial coding will allow me to relate the codes to one-another in new ways (Strauss & Corbin, 1990). The result of coding will be that all interview data is categorized in order to account for the data (Charmaz, 2006, p. 43). Once categories have been developed, I will again code the data and instead of comparing one interview to another interview, I will compare it against the categories that have developed. If there are any interviews that provide disconfirming data, or information that is significantly different from the rest of the interviews, this will be documented. I will also try to provide justification or explanation for why there is dissenting information. After I have completed my coding sequences, I will use these codes to generate themes. A theme is a broader, overarching idea, which usually represents major findings of the research. (Charmaz, 2006). As themes begin to emerge from the data, I will return to the raw interview data and compare it against the themes that emerge to look for disconfirming data. Themes will be revised as needed throughout the data analyzation process.
Criteria for Quality

To “reach accurate conclusions about a program’s functioning and effectiveness” (Mertens & Wilson, 2019, p. 341) it is important to ensure the quality of the inquiry. As I evaluate the qualitative data, I will ensure that the evaluations have dependability and credibility. Dependability is described by Mertens and Wilson (2019) as “the extent to which project procedures and changes are documented” (p. 344). To make sure that results are dependable, I will take notes about any changes that are made to qualitative data collection as the changes are made. I will also share my procedures and any changes to those procedures in the methods section of any reports or publications based on the data. Themes that emerge from data collected will have rich, thick descriptions, which means I will give details into the complexities of the data I have found (Mertens & Wilson, 2019). Finally, I will utilize member checking, which is the process of letting interviewees review findings to confirm if their stories have been accurately represented (Mertens & Wilson, 2019). Credibility refers to the ability of the evaluator to portray the beliefs of the respondents in the evaluation (Mertens & Wilson, 2019). Interviews are subject to evaluator interpretation, which may lower credibility. I will work to ensure credibility by utilizing peer debriefing. Peer debriefing is a process by which another individual reviews the case study and asks questions to ensure the study makes sense and is logical to other people outside the researcher, while also making sure that the evaluator interpretation is aligned with the interviewee account.

I will also use triangulation to make sure that my data analysis is trustworthy. Triangulation is the process of using several different data collection methods (demographic information, open-ended surveys, closed-ended surveys, and semi-structured interviews) to
confirm that conclusions formed from interview findings are in alignment with survey findings (Jones et al., 2013).

**Stakeholders**

There are several stakeholders involved with PRP. Stakeholders are defined as individuals who have a vested interest in the evaluand (Mertens & Wilson, 2019.). Typically, stakeholders fall in to one of four categories: people who have authority over the program, people who have responsibility for the program, people who are beneficiaries of the program, and people disadvantaged by the program (Greene, 2005). It will be important that this evaluation provides necessary information to the stakeholders.

In relation to the PRP, there are stakeholders from each category to consider. The first group of stakeholders, those who have authority over the program, include the grant funding board, college administrators, and student affairs administrators. The next group of stakeholders, those responsible for the program, include program developers, professional faculty and staff who implement the program, professionals from the field who assist with program execution, and student volunteers. The third group of stakeholders, those who benefit from the program, include program participants. This group of stakeholders also includes the greater community where the regional satellite campus is located, and society at large, as a goal of increasing the diversity of PharmD cohorts is to decrease health disparities found amongst URM populations. The last group of stakeholders are those who are disadvantaged by the program. For the purposes of PRP, disadvantaged individuals include prospective participants who were unable to participate due to programmatic limitations or barriers.
This information will be shared with those who have authority over the PRP, such as grant funders and college administrators. It will also be shared with those responsible for the program, such as program staff. I will also share this information with future program participants in an effort to provide evidence that supports participation in the PRP. I will be working with college administrators to gather some of the quantitative data. Another group of stakeholders, those who have benefitted from the program by participating in the program, may be benefited from this evaluation, as they will be able to reflect on their experiences and utilize their experiences in future pharmacy endeavors. Those who have previously been disadvantaged by the PRP may benefit from the evaluation, as the program can be revised to benefit those individuals in the future.

Positionality

Having grown up in a middle class white family, it was always my goal to live the “American Dream.” I always assumed that working hard, trying my best, and following the rules meant that I would end up with the white picket fence, a two story house with a wrap-around porch, a few kids and a dog, and that would be the ideal life. Throughout college at my small, conservative, private, liberal arts institution in northern Wisconsin, these ideas were reinforced through my experiences with classmates and their families. It wasn’t until I moved across the country to Florida, started my graduate assistantship in Student Support Services, and started spending time with people who had different life experiences than me that I realized the “American Dream” was really a fallacy.

I would have one-on-one sessions with my students every week and hear how hard their families worked. But regardless of the effort, they lived with their lights being shut off, afraid to
walk down the streets of their hometowns without being shot, or unsure if their little siblings at
home would have food to eat while they were away at school. It was in this moment I realized
that although my family had struggles, there were so many struggles of others I knew nothing
about, and those struggles had long-lasting impacts on the ability for those individuals to
succeed.

This revelation was a catalyst for me making a continuous and conscious effort to ensure
that I do my best to eliminate micro aggressions that may unconsciously arise in my practice.
Further, I continue to do my best to make sure that I am providing support tailored to those with
whom I work who come from marginalized populations. While many practitioners focus on
providing equal opportunities for all of their students, my focus is on making sure that all
students not only have the opportunity to succeed, but also have the resources available to attain
that success.

As a student affairs practitioner, much of my work has not been focused in the realm of
research, but instead in the realm of practice. I continue to seek out positions within the field of
higher education that I feel will allow me to make an impact on not only the students I serve on a
micro-level, but also an impact on the institution that is student affairs. After I finished my
graduate assistantship in Student Support Services, I returned to my hometown and worked at a
community college in recruitment. Most of the schools I recruited at were in areas of the city where
access to education was limited. Most students I recruited never finished their high school
diplomas, and a lot of them did not have a ninth grade reading level. It was eye opening to say
the least, as these were the same people who grew up no more than fifteen minutes from where I
grew up. Yet, I had no idea the levels of poverty and the lack of services being provided to others
in my community until I returned as an adult to live and work in that same community. While it was heartbreaking at first, it was also eye-opening.

One of my main goals as a recruiter was to make myself available to my community as much as possible. This meant evening and weekend hours, so individuals would not have to miss work to meet with me. This meant keeping coloring pages in my office, so students wouldn’t have to find childcare for their kids in order to register themselves for classes. It also meant holding office hours outside of my physical office space, located on the creek, on the far northeast side, and instead going to the public library, where internet access was unstable, but where I could be a face that for many individuals represented opportunity.

After leaving my job in recruitment, I moved to my current institution, still in my hometown. One of our recruitment efforts is developing and retaining local talent in healthcare. This is where PRP originated from. I am hopeful that my evaluation of PRP will provide insight into the ways that this programming is providing opportunities for individuals from my community to have a better future. I anticipate that I will find there are some practices within the program that are unintentionally creating barriers for those same groups of individuals. I am hopeful that through program evaluation, I will be able to identify ways to break down those barriers, and not just provide an equality of opportunity for the population I serve, but also an equality of results.

As an evaluator and practitioner, I plan to use my awareness of institutionalized racism as a lens when reviewing interviews and evaluating sessions provided as a part of PRP. I think my lens as a student from a low-income, first generation background will help me use a critical perspective to identify any major issues that arise within my research that will stifle PRPs’
ability to meet its goals. My identities as a first-generation, middle class individual will allow me to make connections with program participants during the interview process, many of whom may have similar identities. My position within PRP as an administrator shapes how I will approach the program evaluation. Due to my unique positionality as a program administrator, I have unique access to the participant population and existing data. As I complete interviews, I will need to be aware of how my role as a program administrator may make it challenging for participants to be fully open and honest with their opinions of the PRP. As a program administrator who has had several interactions with participants, I will continue to build rapport with participants. I will make sure they understand that I want to hear both the positives and negatives of participating in the PRP. Additionally, I need to be aware of unconscious biases I may bring into the interview process as a stakeholder for the PRP. In an effort to address unconscious biases I may hold, I will take part in memoing throughout the interview process. Memoing is a way for evaluators to take notes for oneself during the inquiry process that can be reflected upon during the analysis process (Cohen et al., 2018).

**Significance**

This program evaluation will provide information required for a grant renewal of PRP and enhance the praxis of program administrators. In addition, findings from the program evaluation will add to the literature on pipeline programs in the health fields. Implications from this program evaluation can also provide guidance to practitioners working with pharmacy pipeline programs at other institutions.
On a program level, conclusions formed from this evaluation will directly impact the future direction of PRP. Specific to the satellite campus where PRP occurs, this evaluation will help provide a landscape for administrators to utilize when applying for grant funding for the continuation of PRP. I hope to use the findings from this evaluation to determine if there has been an increase in applicants, specifically a diverse population of applicants, to the PharmD program at the regional satellite campus. This is important because, as literature shows, there is a lack of diversity in the healthcare workforce, which is detrimental to the quality of care of URM patients (Saha & Shipman, 2006; Williams et al., 2008). The PRP program was developed in an effort to increase a diverse applicant pool in the field of pharmacy, so it is important to determine if the PRP is meeting its’ goals. It is also important to provide evidence that the PRP is meeting its’ goals to grant funders, so additional funding can be requested in the future.

Second, I hope to have a better understanding of ways in which particular aspects of PRP shaped participants’ experiences. I will use these past participant experiences to revise future iterations of the program to better address the needs of the participants and community that is served by the PRP. Studies show that participation in pipeline programs helps students of diverse backgrounds become more engaged in healthcare programs (Briskey et al., 2017; Caldwell et al., 2021 Chang et al., 2017). By completing this program evaluation, I will be able to identify if these research findings also apply to my own program, considering specific programmatic contexts. By making revisions to aspects of the program based on my program evaluations’ findings, I will be able to better serve the unique population we are seeking to serve with the PRP. Further, literature shows the importance of pipeline programs to identify limitations imposed on participants by the program, in an effort to counter those limitations in further
iterations (Stephenson-Hunter et al., 2021). By evaluating the PRP, I will be able to identify those limitations within the program and address them for future populations or participants. Third, I hope that the evaluation results will help college administrators develop additional pipeline programming that will also play a role in increasing the pool of qualified applicants to the PharmD program. If program administrators are able to develop additional pipeline programming, there is an opportunity to get additional grant funding to aid in the work of increasing and diversifying the PharmD applicant pool.

This evaluation may also serve as a framework for other healthcare career program developers who seek to establish a pre-professional pipeline program. Presently, there is a lack of specific guidance for pharmacy programs that are looking to develop and evaluate existing pipeline programs, as most literature on pipeline programs focuses on other STEM fields, such as medicine and public health (Bouye et al., 2016; Briskey et al., 2017; Chang et al., 2016; Caldwell et al., 2021). Beyond healthcare career programs, professionals from other educational pathways may find this type of evaluative approach helpful when developing or evaluating their own pipeline programs. Existing evaluations surrounding pipeline programs lack a detailed description of the programs being evaluated, which makes it difficult to transfer findings from these programs to PCP. This evaluation will be rich with detail, which will make it easier for future practitioners to understand if this evaluation will aid in the development or improvement of other programs with their own unique contexts (Phelan et al., 2017). In addition to program development and evaluative practices, this evaluation may help practitioners understand the importance of acknowledging and addressing the unique needs of diverse student populations, in
terms of recruitment and outreach strategies, and specific services that may be necessary for academic and career success.

Within the academic landscape, this evaluation will add to the breadth and depth of knowledge that surrounds the effectiveness of pipeline programs. Presently, research that is specific to the field of pharmacy education and pipeline program effectiveness is exceptionally limited. Most studies on pipeline programs in the healthcare fields focus on pre-medicine programs (Briskey et al., 2017; Chang et al., 2016), public health pipeline programs (Caldwell et al., 2021), physician’s assistant pipeline programs (DiBaise et al., 2015), and nursing pipeline programs (Katz et al., 2016). Further, research that broaches the larger topic of healthcare pipeline program effectiveness beyond a specific career field is also limited. It is a goal of this evaluation to add to the currently limited knowledge surrounding this type of program in the healthcare field, and more specifically in pharmacy.

This program evaluation may also provide guidance for practitioners striving to conduct their own program evaluations. Little guidance is available for practitioners striving to measure outcomes of pipeline programs and evaluate the effectiveness of their programs (Phelan, 2017). This program evaluation could serve as an example of how to measure the effectiveness of such pipeline programs.
CHAPTER 2

A MIXED-METHODS PROGRAM EVALUATION OF A
PHARMACY SUMMER PIPELINE PROGRAM

Abstract

Nationwide, there has been a decline in the number of applicants to PharmD programs and lack of diversity in healthcare settings. As a result, pipeline programs have been used to develop a larger, more diverse applicant pool to the college of pharmacy at a regional satellite campus in the Midwest. The purpose of this mixed-methods summative program evaluation was to examine the experiences of participants in a summer pharmacy pipeline program to determine if the following programmatic goals were being met: (a) an increase in the number of applicants to the regional satellite campus and (b) a more diverse applicant pool. Surveys and pre- and post-tests were administered and semi-structured interviews were completed. Six key findings emerged as a result of data analysis surrounding achieved outputs and incomes, which led to two bigger impacts. Achieved participant outputs were: (a) an increased knowledge and awareness of career opportunities within pharmacy, (b) the development of professional networking relationships, and (c) an increased confidence in ones’ ability to succeed in pharmacy. Three recognized outcomes were: (a) an increased interest in the field of pharmacy, (b) an increased motivation and solidified decision to pursue a pharmacy career, and (c) an increased interest in applying to the PharmD program at the regional campus. These outputs and outcomes led to two major impacts of the pipeline program: (a) an increased applicant pool at the regional satellite campus and (b) a more diverse applicant pool.
In 2008, a national workforce study suggested that the need for pharmacists would continue to grow resulting in a shortage of 38,000 pharmacists by 2030 (National Center for Health Workforce Analysis [NCHWA], 2008). To address this shortfall, universities across the country created additional colleges of pharmacy. Unfortunately, projected growth estimates within the profession were incorrect. Instead of the 16% growth that was suggested in 2008, a reevaluation suggested a minimal 6% growth by 2030 (Health Resources and Services Administration [HRSA], 2018). As the updated career outlook projections made their way to prospective healthcare students, applications to colleges of pharmacy declined. Due to this decrease in interest coupled with a sharp increase in the number of PharmD degree programs, colleges of pharmacy are now facing a shortage of applicants (AACP, 2019). During the 2012-2013 application cycle, applicant numbers were at an all-time high, with a total of 17,617 applications. In comparison, during the 2019 – 2020 application cycle, there were only 13,988 applicants (AACP, 2020).

In addition to a lack of applicants, colleges of pharmacy are also struggling to recruit and retain a diverse group of students. In the early 2010’s, only 27 percent of pharmacists in the United States came from underrepresented minority (URM) backgrounds, defined as Black, Latinx, and Native American (Health and Human Services, 2014). A lack of diversity in healthcare professions like pharmacy is problematic as it is connected to a lack of access to healthcare and low quality of health services for underrepresented populations (Saha & Shipman, 2006; Williams et al., 2008). Studies show that a diverse health sciences workforce can lead to overall improvements in healthcare, in particular related to healthcare services for underrepresented populations (Chrisholm, 2004; Crabtree, 2007; Curtis, 2019; Hayes, 2008).
This is frequently attributed to the trust and rapport that community members are more likely to build with practitioners who are from similar backgrounds. With the important role pharmacists play in the greater healthcare team, it is essential to increase racial and ethnic diversity in the field of pharmacy.

One strategy to address the decline of pharmacy students and lack of diversity in the field is the development of pipeline programs. Pipeline programs exist within many different fields of study including pharmacy, medicine, nursing, and other STEM-related fields (Fritz et al., 2016; McLaughlin et al., Taylor et al., 2019). Sometimes known as summer enrichment programs, pipeline programs provide early exposure to a specific career field in an effort to increase interest and admissions into targeted educational pathways, diversify the healthcare workforce, and support the graduation of students (AACP, 2019; Fritz et al., 2016; Kats et al., 2016; Myers et al., 2012).

While much research has explored the outcomes and effectiveness of pipeline programs, in general, little is known about the impact pipeline programs in pharmacy have on increasing student interest in and diversification of the field of pharmacy. Moreover, program context, structure, and specific goals vary for each program, necessitating program evaluations focusing on each specific program to understand its impact and needed improvements. The purpose of this program evaluation was to explore the effectiveness of PRP, a summer pipeline program at a regional satellite campus in the Midwest of the United States, in increasing the number of and diversifying the pool of PharmD applicants. For the purpose of this program evaluation, underrepresented students in the field of pharmacy are defined as individuals who identify as Black/African American, Hispanic/Latinx, or Native American.
Program Description

The program being evaluated, Pharmacy Readiness Program (PRP), is a summer pipeline program hosted at a college of pharmacy on a regional health sciences campus located in the Midwest. PRP is a recruitment tool designed to help recruit and retain prospective students from their initial interest in the college of pharmacy at the regional campus through matriculation into the PharmD program. PRP has goals of attracting and retaining a diverse population of PharmD applicants from the local community. Since 2018, there have been 146 total participants. Approximately 29% of all participants come from URMS populations. See Table 3 for participant demographic information.

Table 3

<table>
<thead>
<tr>
<th>PRP Participant Race &amp; Ethnicity Data 2018 – 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/Ethnicity</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Asian</td>
</tr>
<tr>
<td>Black</td>
</tr>
<tr>
<td>Hispanic</td>
</tr>
<tr>
<td>Multi-Race</td>
</tr>
<tr>
<td>Unknown</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
PRP has undergone several programmatic changes since its inception in 2015. Initially, PRP was a one-week summer program, with a capacity of 30 participants. Beginning in 2018, PRP was expanded to include two one-week sessions, with a capacity of 25 students each. The 2020 and 2021 sessions were virtual due to the COVID-19 pandemic; future iterations, however, will return to the original in-person format.

Participants are recruited via targeted emails to undergraduate advisors at various local institutions and a targeted outreach campaign to all students who have previously inquired about the college of pharmacy. Participants are required to complete an application to share demographic information and information about prior education experiences. Preference is given to applicants who have a high GPA, as well as individuals in a local 90-mile radius (due to grant funding supporting local participants). Program administrators also consider the diversity (race/ethnicity and gender) in the make-up of each group of participants. Once selected, participants pay a $125 registration fee, to covers lab supplies, meals, snacks, and transportation to off-campus activities and tours. For an additional fee, participants may also stay at a local hotel for the duration of the institute. Participants from four surrounding counties pay a reduced fee ($60) thanks to a grant from a local community foundation that supports total programmatic cost.

Similar to other pipeline programs, PRP provides opportunities for students to network, learn about the application process for pharmacy programs, and get exposure to professional careers within the field (Curtis et al., 2019; DiBaise et al., 2015; Grigalunas, 2018; Holley, 2013; Smith, 2009a). Specifically, each day of PRP begins with networking opportunities that allow participants to meet current PharmD students, faculty, and other participants. Each day is
facilitated by faculty from various specialty areas of pharmacy along with current students who serve as PRP interns. College of pharmacy administrators are also present to answer questions and to network with participants. Participants have the opportunity to meet with recruitment staff to have their unofficial transcripts reviewed and to discuss their individual educational pathways to a PharmD degree at the college of pharmacy. Students attend presentations about various aspects of the PharmD degree and career pathways within the field of Pharmacy (e.g., community, clinical, ambulatory care, and research and industry in pharmacy) and engage in hands-on learning activities. Additionally, students travel to different locations in the area to observe career pathways (e.g., a hospital pharmacy, community pharmacies, and a local research and development company). Another facet of PRP is the opportunity for students to attend PharmD level lectures where they can experience what it is like to be a pharmacy student. Students also have opportunities to interact with current PharmD students to learn about the experiences of student pharmacists and start to envision themselves as future pharmacists.

Methods

To explore how, if at all, PRP supports its’ programmatic goals of increasing the number of PharmD applicants and diversifying the applicant pool of PharmD applicants, I used an internal, summative program evaluation approach (Mertens & Wilson, 2019). Utilizing a pragmatic paradigm, I honed in on data relevant to stakeholders (Mertens & Wilson, 2019), specifically data connected to the evolution and development of PRP, while also collecting data needed for a grant renewal process. My evaluation included quantitative and qualitative data, as summative evaluations utilize both methodologies to inform decisions made about the evaluand
(Mertens & Wilson, 2019). Specifically, I utilized a convergent parallel mixed-methods approach
to data collection, merging quantitative and qualitative data to gain a comprehensive
understanding of the program (Creswell & Creswell, 2018).

**Evaluation Model**

The Kellogg Logic Model (WK Kellogg Foundation, 2004) guided the evaluation of the
effectiveness of PRP on student recruitment. This logic model consists of five major
components: inputs, activities, outputs, outcomes, and impacts (See Table 4). Inputs refers to the
resources needed to execute a successful PRP (WK Kellogg Foundation, 2004) and include
funding, staffing, and physical spaces for the program, marketing materials, and program

Table 4

<table>
<thead>
<tr>
<th>Logic Model</th>
<th>Resources/Inputs »</th>
<th>Activities »</th>
<th>Outputs »</th>
<th>Outcomes »</th>
<th>Expected Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding to support program</td>
<td>Hands-On activities</td>
<td>40 hours of Pharmacy experience</td>
<td>Knowledge of the field of pharmacy for participants</td>
<td>Increased number of applicants</td>
<td></td>
</tr>
<tr>
<td>Faculty/staff to execute program</td>
<td>Lectures</td>
<td>Advisor relationship development</td>
<td>Awareness of educational and career opportunities in pharmacy in suburban city where regional camp is located</td>
<td>Diversified applicant pool for regional satellite campus</td>
<td></td>
</tr>
<tr>
<td>Physical space</td>
<td>Advising Opportunities</td>
<td>Professional relationship development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing materials</td>
<td>Networking events</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographic data of participants</td>
<td>Travel to pharmacy locations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborators, (college advisors, internal recruiter and preceptors)</td>
<td>Current student networking opportunities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRP Participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
participants. Activities refer to what the program does with the allotted resources/inputs (Kellogg, 2004). For PRP, activities include participant engagement in the four-day institute, utilization of academic advising opportunities provided, participation in optional networking and social opportunities, and development of professional relationships through participation in various institute sessions. Participation in activities produces outputs (products of participation in program activities) (Kellogg, 2004). For PRP, outputs include hands-on experience in the field of pharmacy and the development of advising/professional relationships between current and prospective students.

The outputs mentioned above help achieve specific outcomes, defined as “the specific changes in program participants’ behavior, knowledge, skills, status, and level of functioning” (Kellogg, 2004, p. 2). PRP’s outcomes are (a) to make sure students are satisfied with their participation, as a positive experience with the program will likely translate into an increased interest in the field of pharmacy; and (b) to help participants gain a greater knowledge base of the field of pharmacy and a better awareness of the educational and career opportunities in pharmacy. The last major component is the impact of the program. While similar to outcomes, impacts refer to the long-term, bigger effects caused by participation in a program (Kellogg, 2004). Impacts usually occur as a result of outcomes being achieved. In PRP, anticipated impacts are increased applicants to the regional program and a more diverse applicant pool.

**Data Collection**

Data was collected via pre- and post-tests, closed and open-ended surveys, semi-structured interviews, and by accessing participant demographic data collected by the program.
The first data source was anonymous surveys from 144 participants between 2018 and 2021, completed at the end of each day of PRP. Secondly, 36 participants from the 2021 session completed pre- and post-tests and were assigned random identifiers to match their pre- and post-test results. Third, nine 40-minute semi-structured interviews with past PRP participants were completed. Semi-structured interviews, which allowed for the use of a predetermined interview protocol but also spontaneous follow-up questions (Algozzine & Hancock, 2017), focused on participants’ experiences in PRP. Finally, demographic data from approximately 146 past participants, such as race/ethnicity and gender, was used to show how the racial/ethnic make-up of PRP participants has changed over time. Further, this data provided details surrounding participants’ application to the PharmD program at the regional satellite campus.

Interview Participants

This program evaluation used purposive sampling (Patton, 2002) to recruit interview participants. Students who participated in PRP from 2017 – 2021 and were current PharmD students at the regional satellite campus were eligible to participate. These individuals were recruited because of their potential insight into how PRP helped them select the regional satellite campus as their educational institution. Participants were recruited until data saturation was reached (Creswell & Creswell, 2018). A total of nine semi-structured interviews were completed. Six interview participants identified as women and three identified as men. Of the nine participants, six would be considered URM based on the definition used for this evaluation. The demographic make-up of interview participants is similar to the demographics of PRP participants. See Table 5 for detailed demographics of interview participants.
Table 5

<table>
<thead>
<tr>
<th>Participation Year</th>
<th>Pseudonym</th>
<th>Gender</th>
<th>Race/Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>Jasmine</td>
<td>Woman</td>
<td>Asian</td>
</tr>
<tr>
<td>2017</td>
<td>Sonny</td>
<td>Man</td>
<td>Asian</td>
</tr>
<tr>
<td>2018</td>
<td>Alexis</td>
<td>Man</td>
<td>Hispanic</td>
</tr>
<tr>
<td>2019</td>
<td>Andre</td>
<td>Woman</td>
<td>Hispanic</td>
</tr>
<tr>
<td>2018</td>
<td>Melvo</td>
<td>Woman</td>
<td>Hispanic</td>
</tr>
<tr>
<td>2020</td>
<td>Michelle</td>
<td>Woman</td>
<td>Hispanic</td>
</tr>
<tr>
<td>2018</td>
<td>Hunter</td>
<td>Man</td>
<td>Hispanic</td>
</tr>
<tr>
<td>2020</td>
<td>Aly</td>
<td>Woman</td>
<td>White</td>
</tr>
<tr>
<td>2018</td>
<td>Jane</td>
<td>Man</td>
<td>White/Hispanic</td>
</tr>
</tbody>
</table>

Data Analysis

Consistent with a convergent mixed-methods design, quantitative and qualitative data were analyzed independently, then integrated together in a side-by-side comparison (Creswell & Creswell, 2018). Demographic information of participants and quantitative survey responses was analyzed prior to starting data collection via interviews. Specifically, past participant descriptive statistic data for approximately 146 participants were analyzed, to look at trends surrounding enrollment and demographics of past participants. After analysis of demographic data, existing data from close-ended survey responses was analyzed. Descriptive statistics for close-ended questions were developed. To analyze changes in students’ reported interest and awareness of opportunities in the field of pharmacy, paired samples t-tests were conducted comparing pre- and post-test responses of participants. Cohen’s D was calculated to determine the effect size of each change. As suggested by Cohen (1988), effect sizes were interpreted as small if they were at or below .2, medium if they were around .5, and large if they were at or above .8.
Open-ended survey responses were coded to identify initial findings, followed by data from the semi-structured interviews. Utilizing the constant comparative method, continuously comparing data with other data until there is no longer a variation in the emerging themes (Charmaz, 2006; Glaser, 1996), open-ended survey responses and interview data were coded using descriptive, open coding, to attach a label to data, which then generated categories and defined properties of those categories (Strauss & Corbin, 1990). Axial coding, used for the second round of coding, allowed me to relate the codes to one-another in new ways (Strauss & Corbin, 1990. The result of coding was that all qualitative data was categorized in order to account for the data (Charmaz, 2006). Finally, after the completion of the coding sequences, themes were generated (Charmaz, 2006). These themes were merged with the quantitative data to describe the outcomes, outputs, and impacts of the program.

Quality of Program Evaluation Design

Triangulation was used to improve the quality of the findings. Triangulation is the process of using several different data collection methods (demographic information, open-ended surveys, closed-ended surveys, and semi-structured interviews) to confirm that conclusions formed from one set of data are in alignment with other types of data (Jones et al., 2013). Additionally, peer review by researchers and stakeholders, such as my dissertation committee, was used throughout the development and implementation of my program evaluation.
Findings

The program evaluation led to six key findings, which fall into two separate categories. Overall, the program appears to be achieving its goals of increasing applicants to the regional satellite campus and diversifying the pool of those applicants. Specifically, the evaluation showed that the program is achieving three outputs: an increased knowledge and awareness of career opportunities within the field of pharmacy, the development of professional networking relationships, and an increased confidence in their abilities to succeed in pharmacy. These three outputs led to three outcomes: an increased interest in the field of pharmacy, increased motivation and solidified decision to pursue a pharmacy career, and an increased interest in applying to the PharmD program at the regional satellite campus. Each of these key findings are discussed below, highlighting paired samples t-tests (see Table 6), survey data, and interview data that supports each of the findings. These outputs and outcomes likely contribute to the achievement of anticipated impacts of the program including increased applicants and a more diverse applicant pool at the regional satellite campus. Impacts are also discussed in more detail below.

Outputs

Quantitative data in the form of pre- and post-tests and close-ended survey data and qualitative data showed that three intended outputs were met. Participants reported increased knowledge and awareness of the field of pharmacy, the development of professional networks, and increased confidence in participants’ abilities to succeed in pharmacy as a result of participating in PRP. Each of these outputs is discussed below.
Table 6
Differences in Interest and Perceptions of the Field of Pharmacy Pre vs. Post Test (n=36)

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Pre-Test</th>
<th>t(df)</th>
<th>Cohen’s D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding of Field of Pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test: I feel that I have a good understanding of the field of pharmacy.</td>
<td>M=3.36 (SD=.867)</td>
<td>t(35)=-10.442***</td>
<td>1.74</td>
</tr>
<tr>
<td>Post-test: As a result of participating in Summer Pharmacy Institute, I feel that I have a better understanding of the field.</td>
<td>M=4.89 (SD=.319)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence in Being Accepted into Pharmacy Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test: I am confident in my ability to be accepted to a College of Pharmacy.</td>
<td>M=3.53 (SD=.878)</td>
<td>t(35)=-5.960***</td>
<td>0.99</td>
</tr>
<tr>
<td>Post-test: After participating in Summer Pharmacy Institute, I am more confident in my ability to be accepted to a College of Pharmacy.</td>
<td>M=4.39 (SD=.728)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test: I feel that the field of pharmacy is diverse.</td>
<td>M=4.89 (SD=.319)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to Pursue a Career in the Field of Pharmacy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test: I plan to pursue a career in the field of pharmacy.</td>
<td>M=4.44 (SD=.909)</td>
<td>t(35)=-2.231*</td>
<td>0.37</td>
</tr>
<tr>
<td>Post-test: Participation in Summer Pharmacy Institute has solidified my plan to pursue a career in the field of pharmacy.</td>
<td>M=4.75 (SD=.500)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to Apply to PharmD Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test: I plan to apply to a PharmD professional program.</td>
<td>M=4.33 (SD=1.014)</td>
<td>t(35)=-3.630**</td>
<td>.60</td>
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<tr>
<td>Post-test: After participating in Summer Pharmacy Institute, I am more strongly considering applying to a PharmD program.</td>
<td>M=4.78 (SD=0.540)</td>
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</tr>
<tr>
<td>Intention to Apply to Regional Satellite Campus</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Pre-test: I am considering applying to the regional satellite campus.</td>
<td>M=3.47 (SD=1.276)</td>
<td>t(35)=-4.516***</td>
<td>0.75</td>
</tr>
<tr>
<td>Post-test: After participating in PRP, I am more strongly considering applying to the regional satellite campus.</td>
<td>M=4.22 (SD=.929)</td>
<td></td>
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</tr>
</tbody>
</table>

*p<.05  **p<.01  ***p<.001
Increased Knowledge and Awareness of Pharmacy

Participants reported increased knowledge and awareness of the field of pharmacy as a result of participating in PRP. Descriptive statistics showed that of 144 respondents from 2018 – 2021, 92% of respondents strongly agreed that participation in PRP helped them have a better understanding of the pharmacy profession (see Appendix D). Comparing pre- and post-tests using paired samples t-tests indicated that there was a significant difference in respondent’s perceived understanding of the field of pharmacy from prior to participating in the program (M= 3.36, SD=.867) to after completing the program (M= 4.89, SD=.319, t(df)= -10.442 p<.001). Practical significance of this difference, as measured by Cohen’s D, was high at 1.74.

Interview data and open-ended survey data provided more in-depth information on the type of information students gained from the program and what they found most beneficial or eye-opening. For example, when asked about the learning experiences provided during the PRP program, a survey respondent noted the increased level of understanding of pharmacy they achieved by attending PRP:

I thought PRP was a very beneficial program for me to attend. Prior to this event, I had no idea what many of the roles of different types of pharmacists were, and attending this event helped me get a better understanding of what pharmacists do in different fields of work.

The survey respondent had a limited understanding of career opportunities in pharmacy prior to attending PRP, however, program participation allowed them to broaden their understanding of the field and possible career trajectories, which enabled them to identify with the field more easily. Interview participants, similarly, shared the importance of this additional knowledge. For example, Andre, a Latina woman who participated in 2019, explained:
What I learned at PRP really helped my decision to get a PharmD degree. Prior to what I learned at PRP, I think I was convinced, and worried, that working towards a PharmD would be a four year contract, and after that all, the only option would be retail pharmacy. So PRP, definitely gave me the confidence that I could have more options.

Andre had been concerned about limited career opportunities after completing a pharmacy degree. Being exposed to other career options within the field of pharmacy made her more confident in pursuing a PharmD degree. Similarly, Jasmine, an Asian woman participant from 2018, shared:

I knew I could work in retail, and I was confident I could do that. But then I came to PRP and I learned about clinical pharmacy, and industry, and other paths, and I thought, oh wow, there’s so much more that I can do. That was the biggest eye-opening thing for me, with a degree in pharmacy, you can do a lot of things, which was really cool to know before going into pharmacy school.

Recognizing the expansive list of career options within pharmacy made it easier for Jasmine to lean into a career in pharmacy, and ultimately pushing her to apply to a PharmD program. Thus, both the quantitative and qualitative data analyzed, showed that participants were able to expand their knowledge of career opportunities within the field; something participants noted as essential to increasing their interest in the field of pharmacy.

**Development of a Professional Network**

Participants highlighted the importance of the professional relationships with other participants throughout their PRP experiences through open-ended survey responses and interviews. For example, Jasmine shared in her interview what it was like to interact with other people who were interested in pharmacy:

It was cool to be able to meet a lot of people that were interested in pharmacy like me, because in my high school, and my undergrad, no one was really into pharmacy. So
seeing other people who were also interested in pharmacy, and hearing why they want to become a pharmacist, and just meeting new people, was one of my favorite parts of PRP.

Although Jasmine has a racial and gender identity that is not considered underrepresented in the field of pharmacy, she still did not get the opportunity to interact with others interested in pharmacy prior to her PRP experience. PRP allowed her to develop a sense of community that played a role in growing her interest in the field of pharmacy. Similarly, Jane, a bi-racial woman, participated in PRP in 2018, highlighted the networking she engaged in during the institute:

I got to meet people. There was one person that had kind of the same background experience as me, she didn’t have a pharmacy background. So, it was nice to have someone to relate to, but then also be able to talk to people that did have experiences different than me. I really liked the activities that weren’t so formal, because I got to see how the students interacted with the faculty and the other pharmacists and I just thought it was amazing. It was easy to tell this is a close-knit community that I could find myself being a part of, because those are the types of relationships I value.

Prior to PRP, Jane, a URM participant, was concerned that she would not fit in and did not necessarily belong in the field of pharmacy. Knowing that she could find a community and fit helped her believe that pharmacy was the correct path for her.

Other participants talked about how PRP experiences helped shape their opinions about the campus culture; Melvo, a Latina woman currently in the PharmD program at the regional satellite campus, who participated in PRP in 2018, talked about how the relationships she formed have helped her as a current student:

I remember almost everyone from PRP. And I remember my first year of pharmacy school, those same people were here at orientation, as my classmates, and my upperclassmen, and on my first pharmacy practice experience, I had to do an activity with a fourth-year student, and I was like, I remember you from PRP, and we started talking. Thank God I went to PRP, because I probably wouldn’t have talked to him. Having that experience at PRP made me know I could talk to him, and other professionals, and ask them questions, and feel comfortable.
Melvo was able to utilize the connections she made during PRP once she was enrolled in the PharmD program. Seeing familiar faces made her feel more comfortable when interacting with others. Participants also noted that PRP made them recognize how easy it was to connect with current professionals in pharmacy, faculty, and staff. For example, Aly, a white woman, shared:

> It was very easy to ask questions and get answers. People were willing to leave their contact info behind, if there were questions we didn’t think of until later. Everybody from the College of Pharmacy was really professional, and it was encouraging because to me, if that’s how PRP was run, then that was probably how classes would be run as well.

Due to the ease of access to professionals within the field of pharmacy, Aly felt assured that she would be able to continue to build on her professional network as a pharmacy student at the regional satellite campus. One survey respondent had similar thoughts about PRP, noting their excitement surrounding applying to the regional satellite campus:

> This institute provided us with so many opportunities to ask questions, learn from professionals, and have a better understanding of pharmacy. I was beyond impressed by the guest speakers and pharmacists that came to present. I am now confident that pharmacy is the career for me, and I cannot wait to apply to the (regional satellite campus) in the future.

The relationships that the survey respondent cultivated, along with their interactions with professionals within the field, solidified their decision to apply to the regional satellite campus. The relationships built during PRP, both with peers and with professionals within the field of pharmacy, made students feel more excited and comfortable about pursuing a PharmD degree, particularly at the institution.

**Confidence in Ability to Succeed in Pharmacy**

Participants in PRP had an increased confidence in their ability to succeed in a PharmD program after their participation in PRP. Of 42 survey respondents in 2021, 50% of participants
strongly agreed, and 36% of participants agreed, that their confidence in their ability to be accepted into a PharmD program increased due to their participation in PRP (see Table 6). Comparing pre- and post-test using paired samples t-tests indicated that there was a significant difference in respondent’s confidence in their ability to be accepted to a PharmD program from prior to participating in the program (M= 3.53, SD= .878) compared to after completing the program (M= 4.39, SD= .728, t(df)= -5.960 p<.001). Practical significance of this difference, as measured by Cohen’s D, was high at .99.

Interviews and open-ended surveys provided additional insights into students’ doubts about their ability to succeed in a PharmD program and the increased confidence they felt after participating in PRP. For example, Andre, a Latina woman who participated in the 2019 PRP, said,

I was very hesitant in applying, because like, the statistics of accepted students and everything. For me, a first-generation college student, I was very hesitant. No one in my family went to college, so I just didn’t think I should apply.

While Andre, a URM participant, was unsure of her abilities before PRP, PRP changed her mind. She shared:

After PRP I was a lot more relieved, because I felt like I could definitely make it in pharmacy school. I could see myself at this school. I was able to process everything that happened at PRP, and I left with friends and contacts who helped me get more focused on being a pharmacy student.

Andre elaborated how experiencing what pharmacy school would be like, and meeting other future classmate made her more confident that she had what it took to get a PharmD degree.

Andre was not the only participant who discussed her uncertainty about her abilities to get into a PharmD program before PRP. Alexis, a Latino man from the 2018 PRP, said:

I was thinking, like, I wasn’t very good at chemistry, or clinical stuff before PRP. So I felt a fear that I would not be enough to get into a PharmD program and I didn’t know if I would apply. I just had this fear of failure, it was something that was a big thing for me. I
wanted to do something that would be challenging, but I knew that I could accomplish, and I just didn’t know if I could do it.

Prior to PRP, Alexis, another URM participant, was unsure he could succeed in a PharmD program. However, after PRP he was able to overcome his doubt. He explained:

Overall, when I experienced, when I got home after the program, I was very sure that I would apply for pharmacy school. I made it my top goal, my top priority, I thought I would be able to get a PharmD.

After participating in PRP, Alexis decided that he would apply to the program, as he felt more confident that he would be able to successfully complete a PharmD degree. Through the various experiences as a participant of PRP, individuals, and in particular URM participants, were able to grow their confidence in their abilities to be accepted into a PharmD program, which grew their interest in the field of pharmacy and increased their motivation to apply to a PharmD program.

Outcomes

The outputs listed above, including an increased knowledge of the field of pharmacy, the development of networking relationships, and an increased confidence in ones’ ability to succeed, led to the outcomes listed below. These outcomes include an increased interest in the field of pharmacy, an increased motivation and solidified decision to pursue a PharmD degree, and an increased interest in applying to the PharmD program at the regional satellite campus.

Increased Interest in the Field of Pharmacy

The first outcome that was achieved by program participants was an increased interest in pursuing a career in the field of pharmacy. Of 144 respondents from 2018 – 2021, 82% of respondents strongly agreed, and 15% of participants agreed (Appendix D) that participation in
PRP increased their interest in the field of pharmacy. Comparing pre- and post-test using paired samples t-tests indicated that there was a significant difference in respondent’s interest in the field of pharmacy from prior to participating in the program (M= 4.44, SD=.909) compared to after completing the program (M= 4.75, SD=.50, t(df)= -2.231, p<.005). Practical significance of this difference, as measured by Cohen’s D, was close to medium, at .37.

Interview data and open-ended survey data similarly highlighted participants’ increased interest in the field of pharmacy and shed light on the important role PRP played in fostering this interest. For example, a survey respondent shared, “Overall, it was a great program that strengthened my desire to pursue pharmacy. I can’t wait to apply.” The survey respondent indicated that PRP influenced her desire to pursue a PharmD degree. Similarly, Melvo shared in her interview:

Before PRP, I didn’t really want to do pharmacy. But then, after PRP, I was like, I found myself. I saw more about pharmacy school, what I would be doing as a pharmacist, and what my life could be like after pharmacy school was done. It’s a great opportunity, especially if you’re not sure that you want to do pharmacy. You get good perspectives that you won’t encounter anywhere else. It gave me that something extra that I needed. Melvo was able to see herself as a pharmacist as a result of the various activities in PRP, which increased her interest in a pharmacy career. Like Melvo, Sonny was not sure if pharmacy was for him but PRP helped solidify his interest in the field:

Through undergrad, I wasn’t sure. I was kind of on the fence about it. But the biggest thing that increased my interest in pharmacy, that made me think, this is something I definitely want to do, was PRP. I feel like that program was eye opening for me, and now I’m here (at the regional satellite campus COP), graduating in a few weeks.

His participation in PRP allowed Sonny to realize that pharmacy was the right field for him. Overall, quantitative and qualitative data highlighted the increased interest participants had in the field of pharmacy as a result of their participation of PRP.
Motivation and Decision to Pursue a PharmD Solidified

Participation in PRP helped students become more motivated and solidify their decisions to apply to a PharmD program. Of 109 respondents from 2019 – 2021, 81% of respondents strongly agreed, and 14% of participants agreed (Appendix D) that participation in PRP increased the likelihood that they would apply to a PharmD program. Comparing pre- and post-test using paired samples t-tests indicated that there was a significant difference in respondent’s intention to apply to a PharmD program from prior to participating in the program (M= 4.33, SD= 1.014) compared to after completing the program (M= 4.78, SD=.540, t(df)= -3.630, p<.01). Practical significance of this difference, as measured by Cohen’s D, was medium at .60 (see Table 6).

The data collected in open-ended surveys and interviews shed light on how participants felt more motivated to pursue their PharmD degrees. A survey respondent noted:

This was a very good program. It was very organized and informative. It made me feel good about getting a PharmD and pursuing pharmacy. It really helped me decide what to do with my life.

This survey respondent highlighted how the information gained at PRP helped them decide their future career path. Similarly, Jasmine shared in her interview:

PRP influenced me in a good way. I kind of knew I wanted to apply to pharmacy school, but after (PRP) I was even more sure that I wanted to do this, because if one avenue didn’t work out, there were other avenues I was exposed to that I could explore, so I was really sure of my decision to apply after PRP.

Recognizing the different opportunities available to her with a pharmacy degree solidified Jasmine’s decision to apply for a PharmD program. Similarly, Alexis highlighted how PRP increased his motivation to pursue a PharmD degree:

I feel like PRP really boosted me to go for a PharmD. I was getting information from professionals. When I got out of my comfort zone, it was a boost, like this motivation.
And once I felt that motivation, PRP helped ease my stress, and I was confident in applying.

Alexis noted that participating in PRP helped him feel motivated to pursue a PharmD degree, while also easing any doubts or concerns about applying. Another interview participant, Jane shared how she reflects back on her time in PRP when she needs motivation to finish her PharmD education:

I didn’t think I was gonna go to pharmacy school before PRP. So it was definitely the determining factor. It definitely pushed me to get it in gear and start applying. I think after PRP, there was really no turning back for me. PRP solidified that this is what I’m going to do. So whenever it gets stressful, I just reflect back to that experience, and be like, no, I want to be here, I want to become a pharmacist, and then I keep going. That experience, it literally changed my whole life plan.

PRP gave Jane motivation, not only in deciding to pursue a PharmD degree, but also to persist during challenging parts of the PharmD program. PRP, thus, was able to solidify participants’ decision to pursue a PharmD had been solidified and increase their motivation to apply to and persist in the PharmD program.

Increased Interest in Applying to the PharmD Program

Participation in PRP increased participants’ interest in applying to a PharmD program, but more specifically, the PharmD program at the regional satellite campus. Of 109 respondents from 2019 – 2021, 44% strongly agreed and 28% agreed (Appendix D) that participation in PRP increased their interest in applying to the PharmD program at the regional satellite campus. Comparing pre- and post-test using paired samples t-tests indicated that there was a significant difference in respondent’s interest in applying to the regional satellite campus from prior to participating in the program (M= 3.47, SD= 1.276.) compared to after completing the program (M= 4.22, SD= .929, t(df)= -4.516, p<.001). Practical significance of this difference, as
measured by Cohen’s D, was high at .75. Interview data and open-ended survey data gave more insight into how the students’ interest in the PharmD program at the regional satellite campus increased. For example, a survey respondent shared, “[PRP] has really gotten my attention as a student to apply for this program at the regional satellite campus.” While PRP increased students’ interest in the field, in general, it also served as a great introduction to the PharmD program at the regional satellite campus. Alexis, an interview participant, similarly shared an increased interest in the regional satellite campus’ program, in particular:

To be honest, once I got done with PRP, the regional satellite campus was my first choice [of pharmacy school]. This is not bias, this was my real thoughts, because I fell in love with the program and the campus during PRP.

Alexis highlighted how participation in PRP influenced his choice in a PharmD program.

Similarly, Andre shared:

I got home from PRP, it was summer, and I worked as many hours as possible to start saving money so I could focus on my grades in the fall. My grades drastically improved because pharmacy school was my goal. It changed my attitude at work (as a pharm tech). After PRP, I was going to work with an intent to learn as much as possible from the pharmacists. I only applied to the regional satellite campus. PRP gave me the chance to envision myself here. It gave me the taste of the state where the PRP occurs, the taste of the pharmacy school, and the opportunities that could be opened to me.

Andre mentioned that she was only interested in applying to and attending the regional satellite campus because she got to sample what it would be like to go to school at the satellite campus prior to paying tuition to attend classes. After PRP, she could see herself not just as pharmacist, in general, but specifically as a student in the regional satellite campus program. Michelle, a Latina woman from 2020, was torn between two different schools prior to PRP; she explained:

So before PRP I had two top schools where I wanted to apply. What drove me more to the regional satellite campus was that I had the opportunity to get to know the people and see the campus at PRP. After PRP, I decided that the regional satellite campus was my first choice.
Developing relationships and seeing the campus helped Michelle make a decision between the two programs she was considering. Much like Michelle, Hunter, a Latino man from the 2018 PRP, felt that the experiences he had as a part of PRP made him ultimately decide the regional satellite campus was where he wanted to be:

> For me, it was a life changing experience. Because, I didn’t have any experience in pharmacy. And I came here and was like oh, this is what I like, this is where I want to be. I like helping people, and being a part of a multidisciplinary team. So at PRP I learned that, and then I was like, what do I need to do next to become a pharmacist? For me, it was just like, there was the Hunter before PRP, and then there was Hunter after PRP. It changed me. And that’s why I applied to the regional satellite campus.

Having this life changing experience at PRP convinced Hunter to apply to the regional satellite campus. Thus, PRP not only increased participants’ interest in the field of pharmacy and a PharmD degree; it specifically got them interested in the PharmD program at the regional satellite campus and served as an important recruitment tool for that program.

**Impacts**

Analysis of institutional data showed that, since the implementation of the PRP, the diversity of the applicant pool and the number of applicants at the PharmD program has increased. Specifically, prior to PRP only 10.4% of all applicants to the PharmD program at the regional campus were from URM populations. After the implementation of PRP, on average a total of 22.9% of all applicants to the PharmD program are from URM populations (see Table 7). Regarding number of applicants, approximately 130 students are enrolled annually in the PharmD degree program at this regional satellite campus. Prior to the inception of PRP, 15.8% of the regional satellite campus student body identified as a URM student, whereas after the inception of PRP, 17.6% of the regional satellite campus student body identified as a URM (see Table 8). The achievement of intended outcomes and outputs of the PRP likely contributes to the
achievement of these impacts, though proving a causal connection between the two goes beyond the scope of this program evaluation.

Discussion

The findings of this program evaluation helped to determine that the anticipated impacts of the program are being met thanks to achieving outputs and outcomes of the program (WK Kellogg Foundation, 2004). Similar to other pipeline programs, outputs achieved include an increased knowledge of the field of pharmacy, the development of professional networking relationships, and an increased confidence in their ability to succeed in a PharmD program (Awe & Bauman, 2010; Danek & Borrayo, 2012; Johnson & Bozeman, 2012; Mason et al., 2017; Myers et al., 2012; Smith, 2009b; Toney, 2012; US Department of Health and Human Services, 2009). These outputs led to three outcomes; an increased interest in the field of pharmacy, solidified motivation to pursue a PharmD degree, and increased interest in the PharmD program at the regional satellite campus; findings that support previous literature which highlights that pipeline programs can increase interest in a field and motivation to pursue a certain degree (Curtis et al., 2019; Grigalunas, 2018). As a result of these outcomes, two impacts occurred; an increase in the number of applicants to the PharmD program and a diversification of the applicant pool at the regional satellite campus, impacts frequently noted as the results of pipeline programs (Myers et al., 2012; Smith, 2009b). The program evaluation thus highlighted that PRP not only achieved its specific goals but fosters many of the intended outcomes of pipeline programs, in general. This discussion sections elaborates on the findings, their relationship to
# Table 7

## Regional Satellite Campus PharmD Applicant Race & Ethnicity Data

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<thead>
<tr>
<th>Race/Ethnicity</th>
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<th>Post-PRP</th>
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Table 8

Regional Satellite Campus Student Population Race & Ethnicity

| Race/Ethnicity | Pre-PRP |          |          |          |          |          |          |          |          | Post-PRP |          |          |          |          |          |          |
|----------------|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                | n       | %        | n        | %        | n        | %        | n        | %        | n        | %        | n        | %        | n        | %        | n        | %        | n        | %        |
| Asian          | 40      | 30       | 51       | 29       | 45       | 27       | 40       | 28       | 33       | 27       | 30       | 24       | 30       | 25       | 32       | 25       | 32       | 25       |
| Black          | 9       | 7        | 14       | 8        | 12       | 7        | 6        | 4        | 5        | 4        | 7        | 6        | 8        | 7        | 10       | 8        | 13       | 10       |
| Hispanic       | 2       | 1        | 5        | 3        | 7        | 4        | 7        | 5        | 6        | 5        | 4        | 5        | 4        | 11       | 9        | 13       | 10       |
| International  | 2       | 1        | 2        | 1        | 2        | 1        | 1        | 0        | 0        | 3        | 2        | 4        | 3        | 6        | 5        | 8        | 6        | 7        | 6        |
| Multi-Race     | 7       | 5        | 10       | 6        | 9        | 5        | 8        | 6        | 7        | 6        | 6        | 5        | 5        | 4        | 7        | 5        | 5        | 4        |
| Unknown        | 2       | 1        | 2        | 1        | 2        | 1        | 2        | 2        | 3        | 2        | 2        | 3        | 2        | 1        | 1        |          |          |          |
| White          | 73      | 54       | 89       | 51       | 90       | 54       | 79       | 56       | 66       | 54       | 68       | 55       | 63       | 53       | 57       | 45       | 55       | 44       |
| Total          | 135     | 100      | 173      | 100      | 167      | 100      | 142      | 100      | 122      | 100      | 123      | 100      | 119      | 100      | 128      | 100      | 126      | 100      |
existing literature, and the importance of some of these outputs and outcomes for underrepresented minority students.

Three outputs were achieved as a result of the activities included in PRP. First, participants talked a great deal in interviews and open-ended survey questions about how they had a very limited understanding of the field of pharmacy and career possibilities within that field. However, one of the most common responses in the open-ended surveys and interviews was that pharmacists felt they learned a great deal about the various roles of pharmacists and how expansive the field of pharmacy is, which is one of the goals of PRP. As existing literature shows, pipeline programs provide participants opportunities for exposure to the profession that are meaningful, and increase touchpoints (Curtis et al., 2019; Grigalunas, 2018).

Another output achieved through PRP was the development of networking relationships, both among peers, and with pharmacy professionals. This output may be particularly important for URM students, who often encounter feelings of isolation and bias (Caldwell et al., 2019; DiBaise et al., 2015) and a lack of access to mentors and support systems (Caldwell et al., 2021; Satcher et al., 2005). The mentoring relationships developed during PRP are fundamental to the success of URM students in the field of healthcare (White et al., 2013), as these role model relationships can help counter feelings of isolation URM students feel as a result of a lack of interaction with professionals who they can relate to (Caldwell et al., 2019; DiBaise et al., 2015).
Not having prior connections with medical professionals, a career in healthcare may seem unattainable to students, in particular those from URM backgrounds (Holley, 2013). PRP seemed to address these barriers. More than one participant mentioned how, while they did not have much experience with individuals who were interested in pharmacy prior to PRP, PRP allowed them to meet others like them with similar interests, which helped them identify as a future pharmacist. This was, however, not only true for URM participants but also participants like Jasmine, who identify with a racial group (Asian) not considered underrepresented in the field of pharmacy. This program evaluation thus highlights how strategies often considered best practices for URM students can also have a positive impact on non-URM participants.

A third output that was achieved was an increased confidence in the participants’ ability to be accepted to a PharmD program. Although an increased confidence in one’s abilities to succeed in a PharmD program was not an initial program goal, it does relate to participants’ likelihood to pursue a PharmD degree, which is an anticipated outcome of program participation. Throughout the semi-structured interviews, participants frequently described feelings related to imposter phenomenon. Imposter Phenomenon, more commonly known as imposter syndrome, is a chronic feeling in high-achieving individuals that they are not actually qualified in spite of contrary evidence, as well as a fear that others will discover that they are an intellectual fraud (Clance & Imes, 1978). Imposter phenomenon is more frequently experienced by individuals from URM populations. This is due in part to a lack of academic support throughout prior scholarly endeavors, having to balance family pressure to succeed, and facing conflicts with peers who feel abandoned that the individual decided to pursue an academic endeavor and are therefore disloyal to their home communities (Inman & Mayes, 1999; Terenzini et al., 1996). Participation in PRP
allowed participants to envision themselves as future pharmacists and gave them the confidence to pursue this educational and career goal that they may have previously been uncertain about. This was accomplished by providing opportunities for participants to do hands-on learning and to speak to others with similar backgrounds who are currently practicing pharmacists (Holley, 2013).

The above listed outputs that were achieved as a result of PRP helped three outcomes to be met. The first of these outcomes is an increased interest in the field of pharmacy. By increasing participants’ interest in the field of pharmacy, it is more likely that participants will apply to a PharmD program, which is a programmatic goal of PRP, and is similar to literature that showed that students in sciences, technology, engineering and mathematics (STEM) pipeline programs or pharmaceutical sciences specific pipeline programs felt that the program positively impacted their desire to pursue a STEM career (Fritz et al., 2016). Closely related to the first outcome is the second outcome, increased motivations and solidified decisions to pursue a PharmD degree. Participants highlighted how participation in PRP not only increased their motivation to pursue a PharmD degree, participants like Jane also shared that PRP provided them with motivation to persist in the PharmD program. Pipeline programs like PRP thus also have the potential to positively influence persistence and graduation of students (Smith, 2009b). Lastly, participants’ interest in applying to the PharmD program at the regional satellite campus also increased. As literature suggests, pipeline programs have the potential to help programs increase their application numbers (Mason et al., 2017; Myers et al., 2012; Toney, 2012; US Department of Health and Human Services, 2009). Considering the current competition for diverse, qualified
applicants to PharmD programs around the country (AACP, 2020), offering a pipeline program can be one strategy to make your program stand out and become more attractive to potential applicants.

The abovementioned outcomes helped achieve the anticipated impacts of PRP. After the creation and execution of PRP, the applicant pool for the regional satellite campus was greatly diversified. This is especially important, as literature shows that by having a more diversified healthcare workforce, the quality of care received by URM populations will also increase (Chrisholm, 2004; Crabtree, 2007; Curtis, 2019; Hayes, 2008). In addition to a diversified applicant pool, there was also an increased number of applicants to the PharmD program at the regional satellite campus as a result of participation in PRP. This is equally as important, as enrollment numbers for colleges of pharmacy across the country have been declining (AACP, 2020).

Limitations and Implications for Future Program Evaluations and Research

There were a few limitations of this program evaluation. First, t-test results should be interpreted with caution. The use of t-tests for Likert scale questions in a paired design has been debated in the literature, with some indicating that non-parametric tests may be more appropriate for these types of questions, while others argue that a paired samples t-test is not inappropriate (Derrick & White, 2017). Regarding this program evaluation, two additional limitations should
be considered regarding the t-test results. First, questions on the pre- and post-test were not phrased the exact same way; thus, students may have interpreted questions slightly differently, which could skew results. Second, due to the small sample size, assumptions of the t-test such as the normal distribution of data were violated. The t-test, therefore, should simply be seen as one data point that may indicate a difference in students’ perception pre-PRP and post-PRP. Second, while the majority of my interview participants identified as members of URM populations, they only represented the Latinx population. While evaluation shows that the program had positive outcomes for Latinx students, it is unclear if these same outcomes apply to other minoritized groups. Additionally, the open-ended surveys collected were anonymous, so it is not possible to tell the backgrounds of survey respondents; hindering my ability to identify how demographics may shape survey responses. For future program evaluations, it is important to further diversify interview participants to determine if the program is having the same effects on all URM populations, or just specific populations of students. Future evaluations should strive to learn about the experiences of Black participants of the program. The number of Black students who apply to (9%) and enroll in the PharmD program (7%) is fairly low, as is participation in PRP by Black students (7%). More information on the experiences of Black students in PRP is needed.

Third, while URM participants didn’t talk directly about ways in which their race and ethnicity shaped their interests in the field of pharmacy and how their PRP experience may have been impacted by their race and ethnicity, they did mention how some of the barriers that
existing literature commonly attributes to URM populations were addressed by PRP, such as the ability to network with individuals who identify the same way in terms of race and ethnicity. For future evaluations of this specific program, it is imperative to evaluate whether program activities are aligned with best practices for supporting URM populations, such as the opportunity to develop mentoring relationships, placing an emphasis on the cultural wealth participants bring to PRP, and sharing insights into the field of pharmacy (Caldwell et al., 2019; DiBaise et al., 2015; Smith, 2009b). Moreover, additional in-depth interviews with URM participants could dig into the ways in which their racial and ethnic identities shape their experiences in PRP and the field of pharmacy. By evaluating if best practices are being incorporated and learning more about URM participants’ experiences, program administrators can more easily determine if they are meeting the needs of their program populations, and subsequently adjust programs to be more supportive of URM populations if needed.

A fourth limitation is that I was unable to gather data for participants who did not choose to apply to or attend the PharmD program at the regional satellite campus or main campus locations. In the future, data from the American Association of Colleges of Pharmacy could be utilized to determine if participants were still choosing to pursue a PharmD degree as a result of participation in PRP, even if it wasn’t at one of the two mentioned campuses. Such information could provide a better understanding of the impact PRP has on the field of pharmacy as a whole.
Implications for Practice

This program evaluation has implications specifically to PRP as well as for other professionals looking to develop pipeline programs. Generally, the evaluation has shown that pipeline programs similar to PRP can be important in terms of increasing interest in the field of pharmacy and confidence in attaining a PharmD degree for program participants. The structure of the program helped PRP meet many of its goals; other program administrators or staff tasked with developing a new program could adapt aspects of the structure to fit the needs of their program participants.

This program evaluation could also serve as a template for future program evaluations of pipeline programs at various institutions. Important takeaways for practitioners looking to develop a program evaluation are to look for an evaluation model that aligns with what you are attempting to evaluate. The Kellogg Model (WK Kellogg Foundation, 2004) of program evaluation provided a great design for this program evaluation and encouraged program administrators to think about the various resources being spent on the program, activities needed to achieve outputs and outcomes, and anticipated programmatic impacts. This model may thus work well for individuals striving to not only understanding the program’s impact but also how a program achieves these impacts. Additionally, exploring literature related to similar programs can help determine what to evaluate. Perhaps most importantly, programming should be developed with evaluation in mind, so programs can be tailored to meet specific goals and objectives; utilizing a logic model or reviewing existing program evaluations such as this manuscript can provide valuable insights into how to develop a new program.
This program evaluation provided program administrators with a multitude of implications for future iterations of PRP, some of which are already being implemented. As participants placed value on networking opportunities provided within PRP, future sessions will have an increased number of structured 30-minute networking activities each day. There will also be unstructured, optional social networking opportunities for participants each night of the program, as well as a welcome reception the evening before the first day of the sessions. Program participants mentioned that learning about less well-known career opportunities within pharmacy helped increase their interest in pursuing a pharmacy career, so moving forward, administrators will also work to develop relationships with professionals from those career pathways. Another topic participants brought up frequently was how the cost to participate might inhibit individuals from attending. While PRP already provides partial funding for housing of participants, for the future administrators will work to develop fee waivers and/or scholarship opportunities for individuals who would like to participate.

Conclusion

Due to a decrease of applicants to PharmD programs across the country and a lack of a diverse healthcare workforce, a college of pharmacy developed a summer pipeline program in an effort to increase diversity and total number of applicants in the applicant pool. After a summative mixed-methods program evaluation, there were six major findings surrounding
achieved outputs and incomes, which led to two bigger impacts. Achieved participant outputs were: (a) an increased knowledge and awareness of career opportunities within pharmacy, (b) the development of professional networking relationships, and (c) an increased confidence in ones’ ability to succeed in pharmacy. Three recognized outcomes were: (a) an increased interest in the field of pharmacy, (b) an increased motivation and solidified decision to pursue a pharmacy career, and (c) an increased interest in applying to the PharmD program at the regional campus. These outputs and outcomes led to two major impacts of the pipeline program: (a) an increased applicant pool at the regional satellite campus and (b) a more diverse applicant pool. The program evaluation, thus, indicated that the program was meeting its intended goals, while also providing insights into what allowed the program to achieve these impacts and ways to further improve the pipeline program.
CHAPTER 3
CONCLUSIONS AND SUMMARY

Reflection, Implications and Final Thoughts

This program evaluation served as a platform to determine if the Pharmacy Readiness Program is playing a role in the diversification of the applicant pool for the College of Pharmacy at the regional satellite campus. It also looked to determine if the PRP is having an impact on the number of applicants who apply to the College of Pharmacy at the specific institution. As was mentioned in chapters one and two, there is limited literature available to help guide program evaluations for pipeline programs (Phelan et al., 2017). This evaluation sought to make inferences about best practices in pipeline programs to add to the literature. The focus, however, was on the local program, specifically on determining if this program is worth continuing for future cycles, and ultimately if grant renewal was worthwhile. The evaluation had several findings relating to anticipated outputs, outcomes, and impacts of the program. Participants in the program became more interested in the field of pharmacy, solidified plans to apply to a PharmD program, and became more confident in their ability to be accepted to a PharmD program, as a result of their participation in the program.

This final chapter of my dissertation of practice is a reflection of my experiences as an evaluator. I will share what I learned through this process, some challenges and surprises I faced,
and applications to future practice. I will also briefly address some future research that I am considering as a result of completing this program evaluation.

How I Chose This Topic

The journey of earning my doctoral degree has guided my ideas about my topic for my dissertation of practice. While learning about various methods of research and evaluation during my didactic education, I found myself leaning towards a qualitative methodology. However, I did want to challenge myself, so I decided to incorporate some quantitative analysis into my dissertation as well. In addition, I felt that incorporating quantitative data collection and analysis into my evaluation would help present a more complete story of the impacts of the Pharmacy Readiness Program.

As I was thinking about the topic of my dissertation, I wanted to do something I felt would have a direct impact on my work. The pipeline program I have worked to further develop and execute as an employee of the institution where this evaluation took place are a large part of my role in my current position, so I knew that the PRP was a program that needed an evaluation. Further, this program is 100% grant supported, and the grant is up for renewal in late 2022. Thus, conducting a program evaluation of the PRP for my dissertation allowed me to acquire needed information to not only reapply for grant funding, but to ask for an increase in the amount of funding provided. Moreover, I was interested in learning how I could improve the program. As I learned more in my doctoral coursework about programs to assist students from underrepresented backgrounds, I became even more interested in evaluating this program to see if the College of Pharmacy was doing its part to help diversify the field of healthcare. It was
important to me to learn more about the lived experiences of the students who participated in the program, focusing in particular on underrepresented students, as I believed that would best allow me to determine what improvements and alteration in the implementation of the program are needed to meet the needs of future participants.

Additionally, throughout my career as a higher education professional, I have had a strong interest in assessment and evaluation of programs that I have executed or developed. However, as a practitioner in the field of higher education, a lot of the work I have done previously has not provided time or a platform to do these types of evaluations. I found this dissertation a perfect opportunity to start incorporating evaluation techniques into my daily practice. With the support and encouragement of my supervisors in my place of employment, I decided that a summative mixed-methods program evaluation of the Pharmacy Readiness Program would be the focus for my dissertation of practice. By doing this evaluation, I hoped to learn best practices for completing a program evaluation, while also gathering important information that would impact my daily practice.

Research Challenges and Surprises

This program evaluation certainly provided some challenges and surprises along the way. As I am an employee of the institution where the evaluation took place, and have been developing and executing the program for a number of years, it was challenging to be objective throughout the interviews. I found that during the semi-structured interviews, it was challenging to not ask too many follow-up questions of participants. It was also challenging not to be conversational with the participants who are completing their didactic coursework and thinking about their next steps as pharmacy professionals. I was worried that if I just let the conversation
go, I would get completely off track and forget to ask the questions I needed to pose in order to collect data related to my research questions. Additionally, I had one participant who came to the interviews incredibly prepared; she had taken notes about her time in the program and provided me with an exceptional amount of information. I was blown away by her effort, and it took me a minute to get back on track during our interviews. However, the interview protocol was very instrumental in keeping me on track with my questions.

The process of collecting and analyzing qualitative data also presented unique challenges and surprises. Having completed semi-structured interviews for research purposes previously, I assumed the process would be similar. While there were similarities in structure and execution of the interviews themselves, there were also some stark differences. I anticipated that it would be very easy to get interview participants, as I had a pool of qualified prospective participants at my fingertips in my role within the College. However, due to managing multiple identities – program evaluator, Director of Student Affairs, and Class Coordinator, students may have been more hesitant to participate. I ended up having to provide an incentive to get enough participants for the interviews. In the future, if I complete more research, I will make sure to consider my identities as they relate to research and look for more ways to make it known to the participants the ways in which my identities may (or may not) impact the research.

Another challenge I faced was utilizing my interview protocol. During the first few interviews, I quickly realized that my protocol was a bit redundant. Some of the questions I asked were not generating answers with as much detail as I would have liked. To address this, I briefly modified the questions and the order in which I asked the questions to delve a little bit more into the experiences of the interview participants. Modifying my interview protocol helped, and I started getting much more rich data from the interviews. If I were to do a program
evaluation again, I would likely ask a potential interview participant to look at the protocol before using it to determine if the questions I would ask would get at the information I am trying to collect.

Something that was surprising to me was the amount of rich data that I had. Both the open-ended survey data and the semi-structured interviews provided me a great deal of insight into the experiences of previous PRP participants. I used my initial questions of inquiry to focus my evaluation, however it was hard not focusing on all the themes that could be generated about the various aspects of the program. It was also challenging to set aside the data that I did not utilize during this evaluation. I was, however, surprised how much I enjoyed coding my qualitative data. It was very interesting to read the open-ended survey responses and hear the stories of past participants. After reading the survey responses and listening to the interviews, I immediately started thinking about how their testimonies would impact my practice. Participants mentioned things that were very important to their experience, such as travel provided to the hotel from the bus station by PRP staff, which I had no idea had any real impact on their experiences. Additionally, many of the participants from Puerto Rico mentioned how pharmacy is much different in Puerto Rico than in the United States, and how PRP gave them many opportunities to expand their professional careers. This got me to start thinking about other ways that the College of Pharmacy could provide opportunities and outreach to prospective program participants and PharmD program applicants from Puerto Rico.

As I reflect on this experience of developing and executing a mixed-methods program evaluation, I think that I have a greater appreciation for a mixed-methods design. It was very rewarding to see that there is quantitative data to support the stories of the limited number of participants I interviewed. I think from the perspective of a reader of literature, having a mixed-
methods design also provides more concrete “evidence” of research conclusions in the eyes of the reader, as opposed to a strictly qualitative design. However, I am still drawn towards a qualitative design, as I find the testimonies of the interview participants to be more impactful.

Writing a manuscript based on a program evaluation was a much different experience than previous research studies I have written manuscripts for. It was challenging to switch back and forth from a practitioner lens to a researcher lens as I worked on the manuscript. Additionally, I found challenges in determining the sections to include in the manuscript. Some sections I find to be important to include as a part of a program evaluation may not be as important in a traditional research study. Examples of these sections include a detailed program history and description. I felt this was important to include, as current literature is very limited in terms of program descriptions, which makes it more challenging to gain transferable information for other programs and program evaluations. For this reason, I wanted to ensure that others who may look to my evaluation to develop their own evaluation or to look for best practices for pipeline programs had detailed descriptions and program history. However, with a limited word count for most publications, it was challenging to determine how much and what details to include. Initially, I thought 6,000 – 10,000 words would be hard to reach for my second chapter. As I wrote my findings and discussion section, I continued to watch the word count increase. I am glad I had some guidance to determine what to cut from my manuscript, as I would have really struggled to eliminate content.

This experience taught me that program evaluations should be grounded in an evaluation model, which I didn’t know existed prior to pursuing my doctoral degree. Additionally, I learned that although program evaluations are not designed to contribute to existing literature, such program evaluations have the potential to contribute to literature and provide examples for other
practitioners looking to conduct program evaluations or develop programming similar to the program that was evaluated. From a practitioner standpoint, I learned that I did not need to wait to make programmatic changes for future iterations of the program until the completion of the evaluation, which previously I assumed to be the case. Ultimately, completing this program evaluation provided me several practical applications to future research and future practice.

Applications to Practice

This program evaluation will serve a multitude of purposes in my practice as a higher education professional. First and foremost, I plan to take the results of the program evaluation and try to make improvements for future iterations of the Pharmacy Readiness Program. I want to continue to incorporate new ways to connect participants with professionals in the field, so networking and mentoring relationships can be cultivated that will ultimately further engage participants in a career in healthcare. I will take into consideration the specific programming pieces that participants mentioned as impactful to their experience and ensure that these elements are continued in the future. I will also take suggestions for improvements to the program itself, and the recruitment of participants into the program, into consideration for the future.

I plan to make some immediate changes for the 2022 sessions of PRP based on my program evaluation. For example, I have modified the schedule for each day to incorporate 30 – 45 minutes of networking at the start of each day, as participants stressed the importance and value of networking. Additionally, many participants mentioned how the unofficial evening social events that took place played a large role in their overall experience. For the 2022 sessions, there are planned social outings for each evening of the PRP, so all participants have the opportunity to network with other participants as well as faculty and staff from the College of
Pharmacy. One of the most highly regarded aspects of the program was the hands-on learning that took place. Starting in the 2023 PRP sessions, we will dedicate more time each day to hands-on lab activities.

I will also use the findings from the program evaluation to complete the application for grant renewal that is due in late 2022. The stories of past participants that I was able to gather through the semi-structured interviews will help me tell the story of the PRP for our grant funders. After partaking in a grant-writing workshop in late 2021, I learned that while quantitative data is important, oftentimes grant funders are looking to hear testimonies about how the grant has been impactful, which I believe the interview data does very well. There are a few participants from the interviews who have grown up in the city where PRP takes place. Both individuals talked about how they learned so much more about opportunities to stay in their local community and pursue their future in pharmacy as a result of participating in PRP. These specific testimonies will go a long way in highlighting the impacts of PRP in the local community.

In addition to implications for the improvement and continued grant funding of PRP, this dissertation of practice, especially looking at the literature surrounding programmatic evaluations for pipeline programs, has helped me think about ways to incorporate literature into my work. When I am looking to develop new programming, I will first look to see what programming already exists and if there is literature to support best practices for such programming. I also plan to implement evaluations into all of my current programs over the next 18 months. Additionally, I hope to create new programming that is evaluation based from its inception, to provide evidence that the programming has measurable goals and objectives. By making this a part of my
normal practice, I think it will make programming stronger and more targeted to the needs of the students I am serving.

Applications to Research

In addition to various applications to my higher education practice, this evaluation has also provided many applications to future research endeavors. First, this evaluation taught me how to read journal articles for content and context – both of which are important when developing a research project. I also quickly learned through the process of my dissertation how to determine how much literature is enough literature to review. I found myself going down wormholes reading literature, slowly getting further and further away from the focus of my dissertation of practice. Throughout the dissertation process, I started to realize when it was time to stop reading and start writing; I also became more aware of when I had gotten to far away from my topic.

This program evaluation also taught me a lot about how to narrow my research focus. Initially, I was looking at a very broad, all-encompassing program evaluation. However, the farther I dove into the evaluation process, it became very clear that it would be important to narrow my focus and not try to answer every question about the program in the same evaluation. This is also true for future research endeavors; it will be important to keep a narrow focus on future topics of research to make a project manageable.

I found through this dissertation of practice that I enjoy working as an independent researcher or team of two; in previous research projects that were in larger groups, it was much more challenging to have control over the process and the timeline of the project. However, with my dissertation of practice, the burden was on myself and my dissertation chair, whom I cannot
thank enough for guiding me the entire way. This dissertation of practice, especially looking at the literature surrounding programmatic evaluations for pipeline programs, has helped me identify future research topics surrounding my work. This evaluation has provided me a few ideas for future research. First, I want to take a deeper dive into the imposter phenomenon that a lot of pharmacy students and applicants to pharmacy school experience. Additionally, I want to look more closely at the impacts that PRP participation has on a nationwide scale of PharmD applicants. At this time, I was not able to get national data, but I hope to work with the American Association of Colleges of Pharmacy (AACP) in the future to get more data to determine if PRP participants who did not apply to the College of Pharmacy at the regional satellite campus applied elsewhere.

Final Thoughts

The process of working towards a doctoral degree has been anything but a straight pathway for me. Thanks to the love of education that was instilled in me early on from my parents, I have always aspired to continue learning. Interacting with professionals in the realm of higher education further inspired me to continue my studies in the realm of higher education, with the ultimate goal of becoming a part of the administrative team of a college or university. Somewhere along the way, my passion for helping students realize their potential to achieve success further developed. Then, when the timing was anything but ideal, I decided to dive head-first into the world of a doctoral degree.

As I worked my way through each class, with tinges of the same imposter syndrome my interview participants felt, I started to wonder if I would be able to make it fully through the coursework, let alone write a dissertation of practice. When I thought it couldn’t get any more
challenging, a global pandemic rocked the landscape of higher education. I was forced as both a practitioner and a scholar to adapt everything I knew to a new environment. At the same time, my personal world was changing. Through it all, the process of taking courses, and writing this dissertation, taught me the importance of two things: adaptability and perseverance. This degree has been therapeutic for me in many ways; I was able to find myself again. I was able to prove to myself that I am capable of big things. Most importantly, I was able to show myself, through this dissertation of practice, that the work I do matters, and has meaning in the lives of the participants I have had the absolute joy to interact with. Moving forward from this dissertation of practice, it is my lifelong goal to continue to work in higher education with the goal of learning the lived stories of the students I interact with, seeking ways to provide them the support systems they need to thrive, and helping them realize the potential that someone saw in me.
REFERENCES


Pharmacy Readiness Program
Day 1: Community/Retail Pharmacy
Monday, June 3, 2019

Schedule
8:30am – 9:00am       Check-in/Breakfast
9:00am – 9:15am       Welcome
9:15am – 9:30am       What is Pharmacy?
9:30am – 10:30am      What Does it Mean to Be a “Community/Retail Pharmacist”? 
10:45am – 11:45am     Tour of Walgreens Pharmacy
Noon – 1:00pm         Lunch
1:00pm – 4:00pm       Compounding Lab/Dispensing Activities
4:00pm                Wrap Up/Evaluation
**Pharmacy Readiness Program**

**Day 2: Hospital Pharmacy: Intravenous Medications and Infectious Diseases**

Tuesday, June 4, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
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<tbody>
<tr>
<td>8:30am – 9:00am</td>
<td>Check-in/Breakfast</td>
</tr>
<tr>
<td>9:00am – 9:40am</td>
<td>Pharmacy math and basic pharmacokinetics/ADME Medication management in hospitals/Opportunities in pharmacy</td>
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<tr>
<td>9:45am – 11:00am</td>
<td>Making IVs</td>
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<tr>
<td>11:00am – 11:30am</td>
<td>Guest Speaker</td>
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<tr>
<td>11:30am – Noon</td>
<td>Guest Speaker</td>
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<tr>
<td>Noon – 1:00pm</td>
<td>Lunch</td>
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<tr>
<td>1:00pm – 1:25pm</td>
<td>Advanced kinetics of antibiotics</td>
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<tr>
<td>1:25pm – 1:45pm</td>
<td>Case study and calculations</td>
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<tr>
<td>1:45pm – 2:15pm</td>
<td>Q&amp;A with Pharmacists and P4 students</td>
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<tr>
<td>2:15pm – 2:45pm</td>
<td>Break and travel to Hospital-</td>
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<tr>
<td>2:45pm – 3:00pm</td>
<td>Talk on inpatient hospital management topics</td>
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<tr>
<td>3:00pm – 3:15pm</td>
<td>Tour of Hospital pharmacy and IV room</td>
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<tr>
<td>3:15pm – 3:30pm</td>
<td>Wrap up and questions</td>
</tr>
<tr>
<td>4:00pm</td>
<td>Wrap Up/Evaluation</td>
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Pharmacy Readiness Program
Day 3: Ambulatory Care
Wednesday, June 5, 2019

Schedule
8:30am – 9:00am    Check-in/Breakfast
9:00am - 9:10am    Ambulatory Care Video
9:10am – 9:55am    Intro to Ambulatory Care Pharmacy
9:55am - 10:25am   Recent Advances in HIV, Now a Chronic Disease
10:25am - 10:35am  Break
10:35am – 11:20am  Active Learning
11:20am – 12:00pm  ER Overview,
Noon – 1:00pm      Lunch
1:00pm – 2:00pm    Management of a Patient with Diabetes
2:00pm - 2:30pm    Active Learning
2:30pm - 3:30pm    Anticoagulation/Hypertension
3:30pm -4:00pm    Active Learning
4:00pm             Wrap Up/Evaluation
Pharmacy Readiness Program
Day 4: Research
Thursday, June 6, 2019

Schedule
7:30am – 8:00am    Check-in/Breakfast
8:00am – 8:30am    Depart for Industry Tour
8:30am – 10:00am   Industry tour
10:00am -10:30am   Return to campus
10:30am –11:00am   Introduction to Research in Pharmacy
11:00am – 12pm     Compounding lab I – lip balm
12pm –1:00pm       Lunch
1:00pm -1:30pm     Pharmacy and Drug Delivery Research – A Student’s Perspective
1:30pm – 2:30pm    Compounding lab II – chocolate troches
2:30pm - 3:30pm    Drug Discovery and Development
3:30pm – 4:00pm    Compounding labs I and II – completion
4:00pm             Wrap Up/Evaluation
Pharmacy Readiness Program
Day 5: Experiential Education & Admission Requirements
Friday, June 7, 2019

Schedule
8:30am – 9:00am  Check-in/Breakfast
9:00am – 9:30am  Experiential Education Presentation
9:30am – 10:30am How to Be Successful in Pharmacy School
10:30am – 11:30am Admissions Presentation
11:30am – Noon  Wrap Up/Evaluation
Noon – 1:00pm  Closing Luncheon
APPENDIX B

INTERVIEW INVITATION EMAIL
Participant Interview Request – Current PharmD Students

Greetings!

I am reaching out to you specifically as I am officially working on my dissertation for my Ed.D. with hopes of graduating in Summer 2022 (yay!!!) My dissertation focuses on the Pharmacy Readiness Program and the impacts it has had on you as a past participant. As past participants, I am wondering if you would be willing to participate in a 45-60 minute interview with me to gain further insight into your perspective on and experiences with the PRP. These interviews will either take place in person or virtually. Participation in this interview is completely voluntary and information you share will be kept confidential. Your assistance would be greatly appreciated!

If this is something you are willing to participate in, please let me know, and we can schedule a time to meet. The timeline for completing these interviews is early to mid-April. Please let me know if you have any questions. If there are any other current students or individuals that participated in PRP who you know that participated, please let me know. Attached to this email you will find a copy of your consent to participate form (that you previously signed), which we will review at the beginning of our interview.

Thank you so much!

Cindi
Participant Interview Request – Past PRP Participants Who Are Not Current PharmD Students

Greetings!

I am reaching out to you specifically as I am officially working on my dissertation for my Ed.D., with hopes of graduating in Summer 2022. My dissertation focuses on the Pharmacy Readiness Program and the impacts it has had on you as a past participant. As past participants, I am wondering if you would be willing to participate in a 45-60 minute interview with me to gain further insight into your perspective on and experiences with the PRP. These interviews will either take place in person or virtually. Participation in this interview is completely voluntary and information you share will be kept confidential. Your assistance would be greatly appreciated!

If this is something you are willing to participate in, please let me know, and we can schedule a time to meet. The timeline for completing these interviews is early to mid-April. Please let me know if you have any questions. If there are any other current students or individuals that participated in PRP who you know that participated, please let me know. Attached to this email you will find a copy of your consent to participate form (that you previously signed), which we will review at the beginning of our interview.

Thank you so much!

Cindi
APPENDIX C

INTERVIEW PROCEDURE
Interview Protocol

Interview Procedure
Thank you for participating in this program evaluation. The purpose of these interviews is to learn about your experiences as a participant in the Pharmacy Readiness Program and how your participant may shape your interest in pursuing a career in pharmacy.

You have already signed our consent form but I would like to go over some important aspects of the consent process and answer any questions you have. First, you have the right to withdraw participation at any point in time. Your contributions to this study will be confidential. We will assign each individual a pseudonym to use in reports or publications. Do you have any questions about the consent process or your rights as a participant?
Are you still comfortable with me audio recording our conversation?
Do you have any questions before we start the interview?

Background
1. Can you tell me a little bit about how you became interested in the field of pharmacy?
2. Prior to your participation in the Pharmacy Readiness Program, what were your thoughts surrounding applying to a professional PharmD program?
3. What, if anything, gave you hesitation in regards to pursuing a career in Pharmacy before your participation in PRP?

Pharmacy Experiences & PRP
1. What other types of pharmacy experiences have you participated in besides PRP? (volunteering, employment, camps, etc)
2. How did you get interested in participating in PRP?
3. What year did you participate in PRP?
4. Talk about your experience as a PRP participant.
   a. What were some of your favorite parts of SPI?
   b. What are some things you learned as a result of participating?
   c. What stands out about those experiences (positive or negative)?
5. How do you think your social identities shaped your experiences in PRP?
   a. How do your social identities influence your interest in the field of pharmacy?
   b. How do you think PRP could better support students with your background?
   c. What additional programs or information would be helpful for students with your background?
6. After your participation in the Pharmacy Readiness Program, what were your thoughts surrounding applying to a professional PharmD program?
   a. What parts of PRP contributed to those thoughts?
   b. How, if at all, has PRP influenced your level of interest in applying?
   c. If so, what specific parts of PRP helped you become more interested?
   d. If you are hesitant about applying, what makes you hesitant?
7. What did you learn about career opportunities in the greater suburban region as a result of your participation in PRP?
   a. What specific parts of PRP helped you learn about these opportunities?
   b. How did learning about these opportunities help influence your decision to pursue (or not pursue) a career in pharmacy? How?
8. What did you learn about the field of pharmacy as a result of your participation in PRP?
   a. What specific parts of PRP helped you learn about the field of pharmacy?
   b. How, if at all, did learning more about the field of pharmacy help influence your decision to pursue (or not pursue) a career in pharmacy? How?
9. What aspects of the program increased your interest in pursuing a degree in pharmacy?
   a. What, if any, decreased your interest?
10. Was there anything that you think would have made PRP a better experience?

Pharmacy Trajectory
1. Since your participation in PRP, how has your educational journey continued?
2. Have you applied to a College of Pharmacy or started a PharmD program? If so, where are you at in your pharmacy education career?
3. What are your current career plans moving forward after completing your education?
4. What do you think made the biggest impact for you in your decision to pursue (or not) pursue a career in pharmacy?

Closing
Is there anything else surrounding PRP and your decisions to pursue or not pursue a PharmD degree that you think would be important for me to know?
Thank you for participating in this interview. I appreciate you taking the time to speak with me about your experience in the Pharmacy Readiness Program. I may contact you in the future for the purpose of follow-up interviews or member checking. If you have any questions or additional ideas that you want me to know about, please feel free to contact me at the phone number or email address that I provided to you.
Appendix D

Survey Frequency Table

As a result of attending PRP, I have a better understanding of the pharmacy profession. N = 144

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As a result of attending PRP, my interest in the field of pharmacy has strengthened. n = 144

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Appendix D (continued)

As a result of attending PRP, I am more likely to consider applying to a College of Pharmacy. N = 106

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As a result of attending PRP, I am more likely to consider applying to the PharmD program at the regional satellite campus. N = 106

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Appendix D (continued)

Please rate your overall satisfaction with PRP. N = 102

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As a result of participating in PRP, I am more confident in my ability to be accepted to a college of pharmacy. N= 42

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Study Title: **Impacts of a Summer Pipeline on Recruitment**

Investigators

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<th>Name</th>
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<tr>
<td>Cynthia Schaefer</td>
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<tr>
<td>Gudrun Nyunt</td>
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**Key Information**

- This is a voluntary research study on the impacts of PRP on PharmD Recruitment.
- This year-long study involves surveying past participants of the college of pharmacy PRP to learn more about their views of Pharmacy as a career and their likelihood to enroll in a college of harmcy in the future. Participation in this study includes completing a 10-15 minute survey before and after participation in PRP. Participants may be asked to participate in a voluntary 60-minute interview after participation in PRP.
- The benefits include a greater awareness of the impact of pipeline programs on graduate recruitment in health sciences programs. There are no reasonably foreseeable risks for participants in this study.

**Description of the Study**

The purpose of the study is to determine the impacts that participation in the College of Pharmacy PRP have on PharmD student recruitment. If you agree to be in this study, you will be asked to do the following things:

- complete an anonymous survey at the beginning and end of your PRP experience surrounding your attitudes and intentions about applying to PharmD program
- you may be asked to complete an interview of no more than 60 minutes to get some more in-depth information about what parts of the program you felt helped you explore the field of pharmacy the most and what had the biggest impact on your decision to apply (or not apply) to a college of pharmacy

**Risks and Benefits**

There are no reasonably foreseeable (or expected) risks to your participation in this study.

There are no direct benefits of participation to you as a participant. There are potential benefits for future SPI attendees based upon the information we garner from your surveys and/or interview.
Confidentiality

The records of this study will be kept strictly confidential. Research records will be kept in a locked file, and all electronic information will be coded and secured using a password protected file. Only the principal investigator and dissertation committee chair will have access to audio recordings that are made. These files will be permanently deleted after the completion of the dissertation. We will not include any information in any report we may publish that would make it possible to identify you.

Your Rights

The decision to participate in this study is entirely up to you. You may refuse to take part in the study at any time. Your decision will not result in any loss of benefits to which you are otherwise entitled. You have the right to skip any question or research activity, as well as to withdraw completely from participation at any point during the process.

You have the right to ask questions about this research study and to have those questions answered before, during, or after the research. If you have any further questions about the study, at any time feel free to contact the researcher, Cynthia Schaefer at cschaef@uic.edu or by telephone at 815-742-6651, or by contacting Dr. Gudrun Nyunt at gnyunt@niu.edu or by telephone at: 815-753-9373. If you have any questions about your rights as a research participant that have not been answered by the investigators or if you have any problems or concerns that occur as a result of your participation, you may contact the Office of Research Compliance, Integrity, and Safety at (815)753-8588.

Future Use of the Research Data

After removing all identifying information from your data the information could be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you.

Your signature below indicates that you have decided to volunteer as a research participant for this study, and that you have read and understood the information provided above. You will be given a signed and dated copy of this form to keep, along with any other printed materials deemed necessary by the study investigators.

________________________________________________           _____________________
Participant’s Signature      Date
I give my consent to be audio recorded during the interviews that will take place post-participation in PRP.

_________________________________________   _____________________
Participant’s Signature                          Date