

## Impact of Educational Background as a Pre-Requirement for Entry into Pharmacy Schools on Success in a Professional Program

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**Citation:** Ferede KT, Hailemeskel B, Andrew A, Weekes H, Prince D, et al. (2020) Impact of Educational Background as a Pre-Requirement for Entry into Pharmacy Schools on Success in a Professional Program. Educ Res Appl 5: 172. DOI: 10.29011/2575-7032.100172

**Received Date:** 04 April, 2020; **Accepted Date:** 12 May, 2020; **Published Date:** 19 May, 2020

### Abstract

In a survey conducted to determine the effect of educational background of pharmacy students before entering a pharmacy program on their success as a first professional year student, a total of 6 questionnaires and questions related to demographics were administered. The survey was administered using an online instrument and Statistical Package for the Social Sciences (SPSS) was used to conduct the statistical analysis. Based on the results; the majority of students who completed the survey (77 students) agreed that their educational-background, the academic institution they have previously attended, and elapse of math courses played significant roles in their success [1]. Being a female gender and taking a break between undergraduate-program and entering pharmacy school are also identified as some of the factors that played a role in their success. Although the study population is small, it seems that taking time to get more education or have extra time before joining pharmacy school are some of the key factors identified in this study that contributed to a higher rate of success in a pharmacy program [2].

### Introduction

Most professional schools such as medical and dental schools require their upcoming new students to have sufficient hours of work or volunteer experience. The main purpose of the schools implementing the requirements is to make sure that each student has an understanding of the work setting before committing their life for the program [3]. Moreover, it is believed that these requirements may be used to understand if they contribute to the success of new students on their first matriculation year and having a better Grade Point Average (GPA) compared to those with no experience at all [4]. The purpose of this research is to determine if the educational background of professional students before entering a professional program has a similar effect on their success as first-year students [5].

### Methods

This study was done as a part of the Drug Information course, a mandatory 3 credit hour course for incoming first-year pharmacy students. The survey was distributed to all 82 first professional year students who enrolled in the course. There were 77 completed surveys (85.4%). There were 70.51% female and

29.49% male participants. There was a total of 6 questionnaires besides questions related to demographics administered. The survey was administered using an online instrument by Professional Self-identity Questionnaire (PSIQ) and SPSS was used to conduct the statistical analysis.

### Results

Out of the 82 students; 77 students completed the survey and when looking at previous education background and the correlation with performance in pharmacy school 42.86 % (33 students) of respondents were strongly agreeing with correlation of education background playing a major role in the performance during their professional school and 33.77% of the students somewhat agreed. Only 3.9% (3 students) of the total students responded strongly disagreeing with educational-background correlating the good performance during professional school (Figures 1-6). When looking at prerequisites 35.9% of the students responded strongly agreeing with their performance and 41% responded somewhat agree and only 3.9% of the students responded strongly disagreeing. When students were asked if higher education correlates with performance, their responses were more so distributed from

strongly agreeing to strongly disagree, but the highest response was already 25% of the students somewhat agree that higher education has an impact on performance during professional school. When looking at Academic institutions attended and undergraduate education, both show a similar response trend of more students somewhat agreeing with both having an impact on performance in professional school. Achi-square analysis was done between gender and educational background having an impact on performance and it was not statistically significant ( $P$  value = 0.87). Similarly, age vs educational background having an impact on performance was nonsignificant ( $P$ -value  $> 0.05$ ) (Tables 1-3).

Gender	
Males	22 (28.6%)
Females	55 (71.4%)
Age	
< 20	1 (1.3%)
21 – 25	48 (62.3%)
26 – 30	18 (23.4%)
31 – 35	5 (6.5%)
> 35	5 (6.5%)
Educational Background	
Pre-requisite courses only	7 (9.1%)
Associate Degree	14 (18.2%)
BA/BSc Degree	48 (62.3%)
MSc Degree	6 (7.8%)
Doctorate Degree	2 (2.6%)

**Table 1:** Age and gender distribution of study participants ( $N = 77$ ).

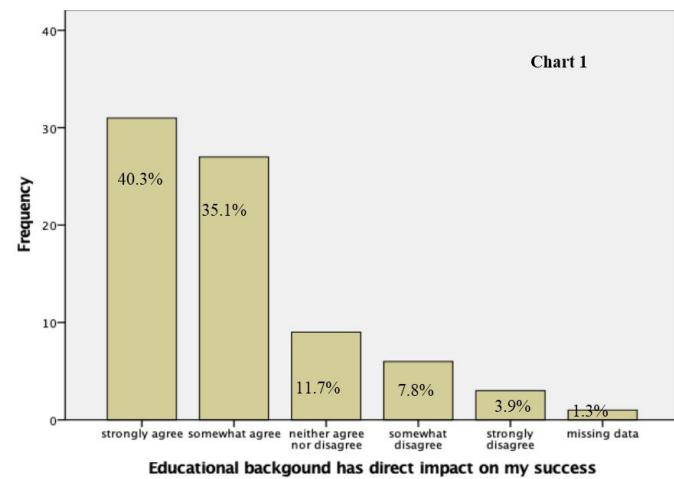
Worked prior to entering pharmacy program?	
Yes	74 (96.1%)
No	3 (3.9%)
Years of worked prior to pharmacy school	
< 1 year	3 (3.9%)
3 years	38 (49.4%)
4 – 5 years	12 (15.6%)

> 5 years	24 (31.2%)
<b>Kind of work</b>	
Health related	49 (63.6%)
Non-Health related	22 (28.6%)
Not applicable	6 (7.8%)

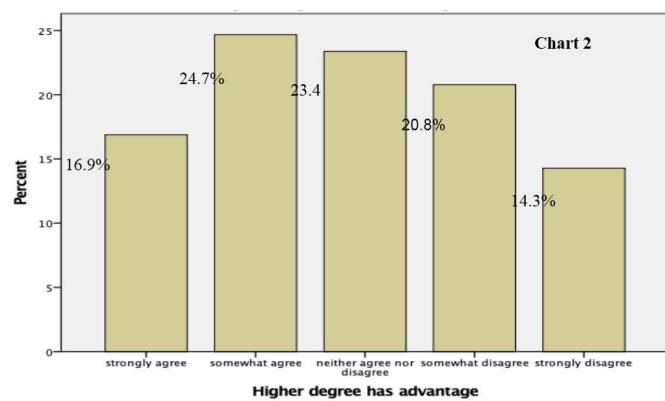
**Table 2:** Participants work related experiences.

State lived before coming to pharmacy school	
Washington, DC	6 (7.8%)
Maryland	30 (39%)
Virginia	7 (9.1%)
Other States	34 (44.2%)
Annual Income from previous job	
< \$1,000	7 (9.1%)
\$1,001 - \$15,000	27 (35.1%)
\$15,001 - \$30,000	23 (29.9%)
\$30,001 - \$45,000	10 (13%)
> \$45,000	9 (11.7%)

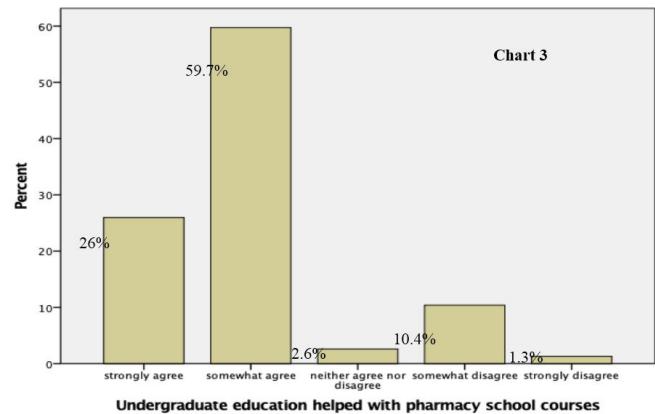
**Table 3:** State where participants lived before entering pharmacy school and their corresponding annual income.



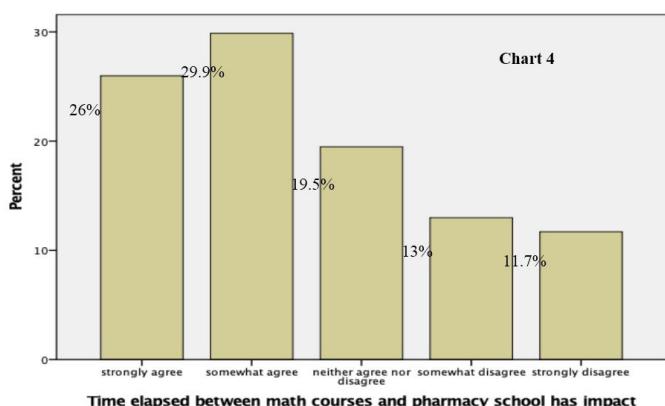
**Figure 1:** Participants response if their educational background has any impact on their success as first year pharmacy student.



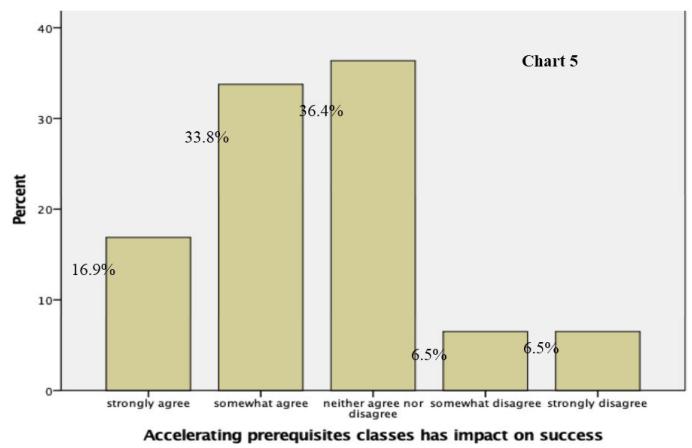
**Figure 2:** Participants response if having a higher degree has an advantage in success as a first-year pharmacy student.



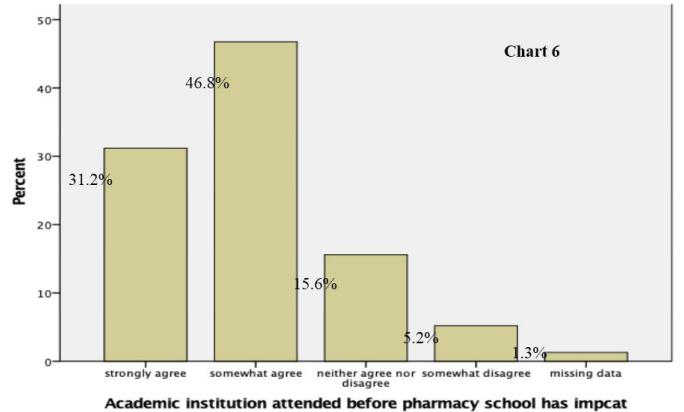
**Figure 3:** Participants response if undergraduate education helped them in handling first year pharmacy courses.



**Figure 4:** Time elapsed between math courses before entering pharmacy school and success as a first-year pharmacy student.



**Figure 5:** Participants opinion on the impact of accelerated pre-requisite classes on success as a first-year pharmacy student.



**Figure 6:** Participants response if their prior academic institution has an impact on their success as a first-year pharmacy student.

## Discussion

The study was determined to review if educational background prior to entering pharmacy school has an impact in success as a first-year student. Most participants were between 21-25 years of age (58.4%) as shown. About 62% of the students already had a Bachelor of Arts or Bachelor of Science (BA/BS) degrees coming into pharmacy school. Among the total of 77 students who completed the survey, about half of the participants (45.45%) somewhat agree that the level of their education and the academic institution they attended before entering the pharmacy program played an effective role in their success in pharmacy school. Moreover. About forty percent of the participants (41.03%) somewhat agreed that there is a correlation between taking prerequisites courses and success at the pharmacy program. About

one-third (33.33%) of the participants somewhat agree that taking accelerating prerequisites pharmacy classes in college also played a role in their success in pharmacy school. One of the limitations of the study was that we did not collect a GPA of each student from their first semester which would have shown the correlation very well.

It was surprising to see 26% strongly and 29.9% somewhat agreeing to the elapse of math courses has an impact in their first year of pharmacy school. We believe that this correlation would be more so to pharmaceutics classes given in their first semester and would need the exact later grade achieved for that course to study further relationships. Furthermore, the level of education and the academic institution attended before pharmacy school might play a major role in the success of students and the majority of first-year students has agreed or somewhat agreed with this factor.

## Conclusion

The study conducted showed that the participants believed that the level of the educational background and the institution they attended before entering a pharmacy program correlated with their success as a first professional year student. The majority of the students who completed the survey also agreed the positive impact of their educational background including the elapsed time of mathematical course played significant roles in their success. One of the limitation of the study is that almost half of the students came to pharmacy school with a BS/BC (48%) and this might have played a major role in their response introducing a bias, but

this result is similar to different studies done in other institutions. Moreover, the study sample might be small and there should be more studies done with larger sample sizes and need to include different institutions to reduce bias. Finally; based on the study done, the main factors that need to be looked at very carefully are educational background before entering pharmacy school, if there was a gap between pharmacy school, work experience developed before pharmacy school, previous institution attended, and elapse of math courses. To understand the correlations of the factors mentioned above; we also need to look at the GPA of each student and if possible, later grade revised in a particular class related to factors.

## References

1. Andrew A, Weekes H, Prince D, Dairo O, Brown E, et al. (2019) Impact of Prior Educational Background on Success in Professional (Pharmacy) Program (2019).
2. McCall KL, Allen DD, Fike DS (2020) School of Pharmacy, Texas Tech University Health Sciences Center. Accessed March 25, 2020
3. Mar E, Barnett MJ, Tang TTL, Sasaki-Hill D, Kuperberg JR, et al. (2010) Impact of previous pharmacy work experience on pharmacy school academic performance. *Am J Pharm Educ* 74: 42.
4. McCall KL, Allen DD, Fike DS (2006) Predictors of academic success in a doctor of pharmacy program. *Am J Pharm Educ* 70: 106.
5. Sonnedecker G (2020) The development of education. In: Kremers and Urdang's History of Pharmacy, 4<sup>th</sup> Edition Madison, WI: AIHP Publications.