



Empower Generations: Longitudinal Study for National Capacities in Life Sciences and Healthcare

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Background: The decrease in the number of adolescents showing genuine interest in the fields of healthcare has been one of the recent concerns worldwide. A plethora of studies have discussed the factors that influence career choices of high school students, including science educational pedagogies, gender, environment, the student's cognitive capabilities, and social perceptions of occupations being gender-based. As reported in 2012, a majority of the Qatari high-school students have shown a greater interest in business, technological, and administrative careers and a lower interest in healthcare. Comprehensive national and institutional strategies have since been utilized to direct the interest of Qatari generation toward healthcare careers.

Objective: The primary objective of this case-control study is to assess the effect of schooling type on the enrollment in the Empower Generations (EG) career training in healthcare at the Qatar University. The secondary objectives are: (1) to describe the effect of initial career interest on the EG and healthcare majors composite's enrollments and (2) assess the association between the history of enrollment in EG and university GPAs.

Method: This is a case-control study that utilized the Qatar University's enrollment databases for the health professions majors, that is, Health Sciences, Medicine, Pharmacy, and Dentistry. The datasets were collected from the registration records between 2013 and 2020. The statistical analysis was performed on the Statistical Package for the Social Sciences (SPSS) software version 26; the study used Chi-Square Test and Independence and logistic regression to assess the effect of schooling type and initial career interest on the enrollment in the EG training at the Qatar University. All statistics were tested for $p = 0.05$ and 95% CI.

Results: Total QU-Health records of admissions from 2013 to 2020 involve 562 eligible students. A total of 180 students (32%) attended EG training before they were admitted to QU-Health, whereas a total of 382 (68%) were enrolled to QU-Health without attending EG training. The study revealed significant findings regarding the association between EG training and international schools ($p < 0.001$). Among the group who attended EG training, there were 63 students (75%) who reported that they did not have an initial career interest before they joined the EG training compared to 21 students (25%) reported that they did not have an initial career interest but enrolled immediately to healthcare majors. The findings indicate insignificant association between the history of EG training and the high school percentage $p = 0.397$. However, the association between a history of EG training and the university's GPA is significant, with a $p < 0.001$, OR 5.016 (2.954–8.518).

Conclusion: The study has shown significant association between the EG training enrollment and the type of school and the initial career interest of high school students. The EG training is perceived to direct the interest of high school students toward the careers of healthcare and is thought to enhance the performance of college students through their university's GPAs.

Keywords: career interest, healthcare, life sciences, Empower Generations, adolescents, Qatar, national vision 2030

INTRODUCTION

The present generations across the world face several challenges in keeping pace with the scientific innovations, industrial growth, and technological advancements that have taken place over the recent century, due to which greater attention is being directed toward the career choices of adolescents and their impact on the future of the individuals as well as society as a whole (Keshavarzi et al., 2019). Choosing a career is one of the ultimate concerns for students, parents, educators, and employers of national and international industries (Padula et al., 2002; Bizri(ed.), 2018). Meeting the overall demand for certain occupations such as healthcare remains one of the utmost priorities of sustainable development goals due to the documented reduction in the human resources for these fields (Blas et al., 2016).

Efficient healthcare education not only focuses on the content but also utilizes a scholastic approach to ensure the learning strategy has maximum relevance to the field applications especially for high school students (Javadi et al., 2018). Interactive teaching strategies such as active engagement with counselors, meeting of role models, stimulation of science inquiries, and learning based on problems and real-life applications, among others, are utilized to influence and direct adolescents' interests toward healthcare and science-based careers in some regions of the world (Kozan et al., 2014). Apart from envisaging effective educational tactics to direct students' interests toward healthcare careers, it is also important to understand that healthcare careers require special personal traits and competencies, and schooling experience plays a major role in enhancing these competencies through effective education that introduce various means of science education. Holland's theory indicates that the success of a career is aligned with the intrinsic personal aptitude and extrinsic

social stimulants including schooling aptitude of the individual (Gorghiu and Santi, 2017).

A number of studies have concluded that skilled and well-trained professionals are highly necessary for maintaining healthcare sustainability (Fonjongo et al., 2013; Mormina and Pinder, 2018). The disproportionate distribution of healthcare resources is a major worldwide concern. The market equity of healthcare professionals is a determinant of an efficient healthcare system and a society's well-being. International accreditations for academic and clinical healthcare institutes is a dimensional trait for healthcare standardization and efficacy (Bener and Al Mazroei, 2010). Therefore, a greater attention has been given to recognizing the factors that are associated with the adolescents' interest and final career choices in healthcare and life sciences (Liaw et al., 2016).

A report published by the World Health Organization (WHO) in 2013 states that there is a shortage of 7.2 million healthcare workers around the globe, and if this issue is disregarded, the shortage is expected to reach 12.9 million by 2035. This would negatively impact the overall deliverables of healthcare services in multiple regions of the world and adversely affect the society's well-being (WHO, 2013; Javadi et al., 2018). In Qatar, specifically, it has been reported that Qataris represent only 1% of the 28,673 healthcare professionals as of 2013; the majority comprises of expats (Supreme Council of Health, 2013). The Supreme Council of Health for the state of Qatar adopted a strategic plan to enhance the number of Qatari healthcare professionals over the next decades (Aziz, 2015). The Qatar Health Report of 2013 reported an average growth rate of 12.5% in the healthcare sector, the majority of which included the following occupations: 43.2% nurses, 14.9% physicians, 7.0% pharmacists and pharmacist assistants, 3.2% laboratory

technologists and technicians, and 4.4% dentists (Bener and Al Mazroei, 2010; Hillhouse et al., 2012; Supreme Council of Health, 2013; Charfeddine et al., 2018).

Qatar is a relatively small geographical region. The population of Qatar, according to the nationality report of 2017, does not exceed 2,700,000, and Qatari nationals represent only 313,000 of the total population. Thus, ensuring an equivalent level of resourcefulness among the Qatari workforce in various fields is one of the greatest challenges faced by this country (Shetty, 2011; Hillhouse et al., 2012; Khan, 2014). Despite this, Qatar has been classified as one of the fastest-growing countries in the recent decade (Berrebi et al., 2009). Qatar's average economic growth rate is 32.6%, and the country's labor market and business environment are considered to be among the most efficient in the world. The labor market of Qatar is ranked at number two out of 90 countries. The budgeting and macroeconomics sectors are ranked at number three, with Singapore followed by Sweden (Khan, 2014). During the recent decade, greater efforts have been dedicated to investing in the Qatari human capital and national resources (Hillhouse et al., 2012).

In 2008, the Qatar government launched a national development plan that defines its national vision for 2030. This developmental blueprint includes strategic goals to enhance the national human capacities in various scientific fields. Further, the Qatar National Vision places emphasis on improving the quality of healthcare services through a competent and skilled workforce (Abduljawad, 2015). Comprehensive frameworks have been successfully implemented to improve the national capacities by investing in various educational divisions (Khan, 2014). The Qatar Vision includes four developmental elements in its scope: human, social, economic, and environmental development (Charfeddine et al., 2018). The Qatar government proclaimed obligatory regulations and dedicated funding to enforce the collaboration between the educational institutes (schools and universities) and the industrial sector and, thereby, achieve the maximum level of reliance on human capital in the fields of research, science, and technology (Bizri(ed.), 2018).

In 2012, the Supreme Council of Health in Qatar introduced a collaborative model involving the healthcare and academic sectors, mandating shared strategic objectives to enhance the proficiency of healthcare and research through interprofessional partnerships (Hillhouse et al., 2012). Considering the capacity shortage for healthcare occupations in Qatar as well as several other regions around the world, various researchers have examined the effectiveness of early career-based science training frameworks that direct the interest of adolescents toward careers related to healthcare (Mei et al., 2008). However, most of the published studies do not include relevant data regarding the final career choices of the participants. One of the studies performed in Qatar focused on the effectiveness of interprofessional secondary education in influencing didactic healthcare enterprises, which specifically aligns education with healthcare and pharmacy standardization in Qatar. This study is an example of the efforts dedicated toward the human development aspect of the National Health Strategy and Qatar Vision 2030 (Kheir and Fahey, 2011).

Toward building national capacities in the careers of healthcare in the state of Qatar, the Empower Generations

(EG) healthcare training framework has been launched by the Qatar University to direct the interest of Qatari high school students toward healthcare and enhance the enrollments in the QU-Health majors composite. The EG offers high school students a structured training framework in various healthcare professions through real life applications. The outcomes of this study would be also useful to conclude the efficacy of the EG educational frameworks in enhancing Qatari enrollments in health majors. Hence, such studies are important to initiate national strategic educational plans that bridge the gaps between school education, university specializations, and career expectations.

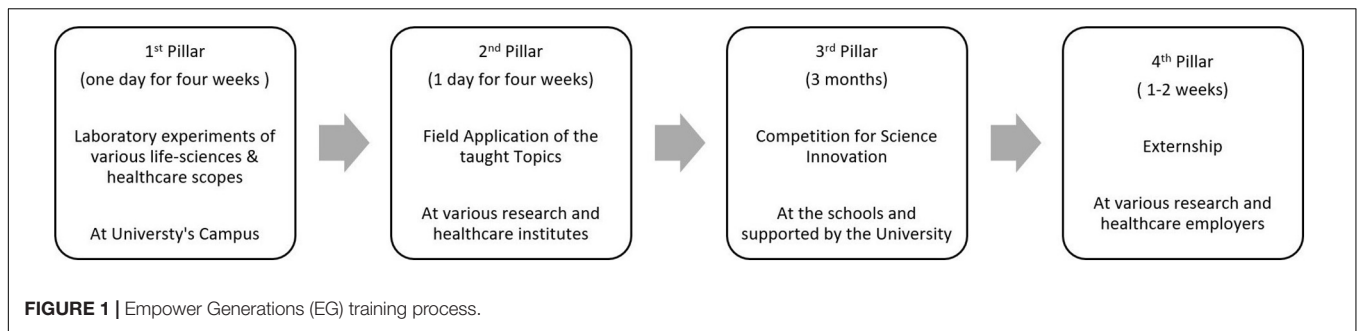
Background About the EG

Empower Generations is an annual educational framework in the form of hands-on training that has been operated in Qatar since 2013 to direct the interest of high-school students toward the fields of healthcare. This educational framework is composed of four pillars; each pillar comprises of a contextual training approach. The first pillar consists of scientific laboratory experiments at a university. The second pillar includes field applications for the principles taught in the first stage, carried out at various healthcare and research centers including the Ministry of Public Health (MoPH), Hamad Medical Corporation (HMC), Al-Gannas Qatari Society, Sidra Medicine, Equine Veterinary Medical Center (EVMC), Qatar Biobank, and Qatar Genome. The purpose of the second pillar is to facilitate a deeper understanding of the outcomes and expectations of each career. The third pillar includes science innovation competitions, through which students can creatively apply their learned knowledge and skills to create a model, documentary report, poster, or research article. The fourth pillar includes a 1- or 2-week externship at one of the abovementioned research and healthcare institutes (see **Figure 1**).

The main objective of the aforementioned pillars is to provide high-school students with a deeper understanding of the careers related to healthcare. The educational scheme has been carefully designed to enhance the cognitive and intellectual competencies, interpersonal skills and critical thinking, problem-solving skills, and commitment and determination of the students.

The methodology for recruiting the high-school student involves coordinated announcements by the Ministry of Education and Higher Education to the government, and independent and international high-schools across Qatar. Registration forms and contact information are distributed during the announcements. The target group for the EG educational framework comprises of Qatari high-school students from grades 10, 11, and 12 who are academically competent. All Qatari high school students are given equal annual opportunities to voluntarily enroll in the EG training. The accepted students are notified through emails, and their guardian/parent's signature is collected through the recruitment forms. Apart from implementing the educational pillars, the students are requested to complete one pre-training survey where they are asked to indicate their initial career interest (healthcare or not healthcare).

One year after the training's completion, the participants' final career choices get screened by a group of trainers and



administrators. The screening method involves a careful cross-check of the Qatar University's admission lists (provided by the admission and registration department of the university) and the previous years' participant lists. Those who are not found on the admission's lists are contacted through follow-up emails and phone calls to find out whether they successfully gained admittance into healthcare related programs in other national or international universities.

MATERIALS AND METHODS

Study and Control Groups

This study follows a case-control observational design in order to assess the effect of schooling type on the enrollment in the EG health career training at the Qatar University, which is one of the main strategies followed to enhance the enrollments in healthcare careers. Both groups – the study and control – have been classified according to their history of enrollment in EG. The study group includes those university students in QU-Health composite majors who attended EG training during their high school years, whereas the control group includes those university students in QU-Health composite majors who did not attend EG training during their high school years. The types of high school attended by both the groups were retrieved from the databases provided by the registration department. The initial career interest data was obtained from the retrieved EG records for the study group and through a survey sent through emails for the control group.

The data in this study was collected from the enrollment and registration records of students in the years between 2013 and 2020 from QU-Health admission records at the Qatar University. The datasets were retrieved electronically and extracted in the form of excel sheets. The raw data was processed and cross-checked with the students who have a history of enrollment on EG training. Those students who have been exposed to EG frameworks were considered as the study group, whereas the students who were not exposed to EG frameworks were assigned as the control group. Grade 12 students who joined EG in 2013 are expected to enroll in 2014; grade 11 students will enroll in 2015; and grade 10 students will enroll in 2016 and so on. Thus, the study allows for 1–3 years of temporality in reference to the natural educational sequence (see **Figure 2**).

Ethical Approval

The research has obtained expedited approval number QU-IRB 1177-ES/19 by the Institutional Review Board QU-IRB. All the electronic records of the university were treated anonymously to maintain the students' confidentiality.

Subject Inclusion and Exclusion Criteria

For the study group, the inclusion criteria are the Qatar University students who are actively enrolled in Healthcare majors composites (Health Sciences, Medicine, Pharmacy, Dental Medicine). All the included students were females and Qatari nationals, who graduated from Qatari high schools. Graduate students of M.Sc. and Ph.D., non-Qatari, inactive students, and males were excluded from the study. Male students were excluded since EG training enrollment was initially restricted to females as the Qatar University health majors were only offered for females.

Sample Size

The study is population-based; it included all the 2,151 students on record. A total of 1,589 students were excluded (1,271 were not Qatari, 120 were graduate students enrolled in M.Sc., and Ph.D. programs, 47 were inactive, 13 attended schools outside Qatar, 44 students were males, and 94 students did not respond to the initial career interest survey). The number of eligible students was 562. Students who never attended EG training were assigned to the control group, whereas students who attended EG training comprised the study group.

Standardization and Validation

Data management protocols are implemented at the Qatar University-admission and registration department. The retrieved records of both the study and control groups were obtained from the same source and treated with unified data management guidelines. The code for the school types, student classifications, gender, and nationality were standardized according to the *Cognos* database management system. The data pertaining to initial career interest was collected based on a survey question sent to the control group through their email: "what was your initial career interest before you joined QU-Health." The data was judged in terms of whether it was healthcare or not. Thus, the baseline of this study is the healthcare major. The career interest survey question was face checked by experts and focus groups to ensure its validity and relevance. The data related to initial career interest of the students who attended the EG training were

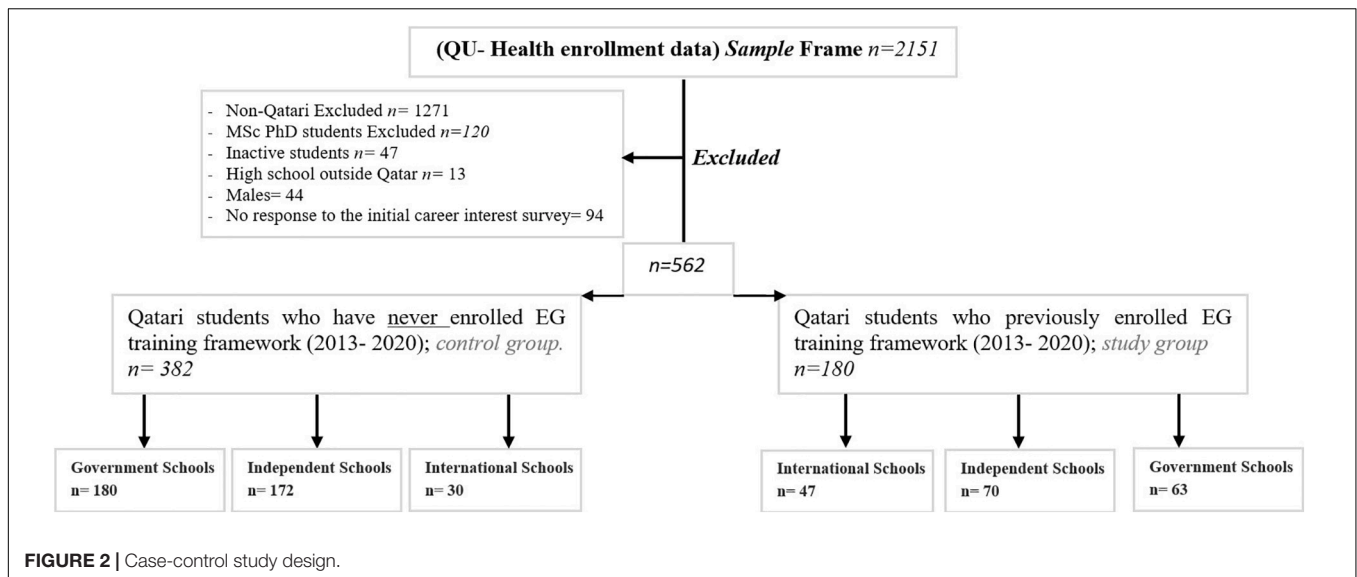


FIGURE 2 | Case-control study design.

retrieved from the databases following the same classification: healthcare or other than healthcare.

The sample was not selected by the researcher, rather it involved all the QU-Health students in the records. Thus “n” is a population-based, the fact that reduced the sample size and selection bias. This study reflects a natural environment without interference from the researcher, and this enhances the external validity.

RESULTS

The primary outcome variable of this study is the enrollment in EG training. This is analyzed in association with the type of school, high school percentage, and career interest. The secondary outcome variable is the university’s GPA analyzed in association to the attendance history of EG healthcare career training. All the subjects of this study were the Qatar University students of healthcare majors. All were Qatari female students who finished their high school in Qatar (see Table 1).

Empower Generations Training and Type of School

Total QU-Health records of admissions between 2013 and 2020 involve 656 eligible students; 94 students (14.3%) did not respond to the initial career interest survey and were excluded. Therefore, the final studied number is 562 students. A total of 180 students

(32%) attended EG training before they were admitted to QU health, whereas a total of 382 (68%) were enrolled to QU health without attending EG training (see Figure 3).

Attending the EG training has been analyzed in association with the history of high school types among both groups; the findings were analyzed through logistic regression in reference to the government school type as the baseline. Table 2 indicates the significance and the Odds Ratio (OR) along with the 95% CI for each school. P value and OR are not significant for the independent schools; however, they show significance for

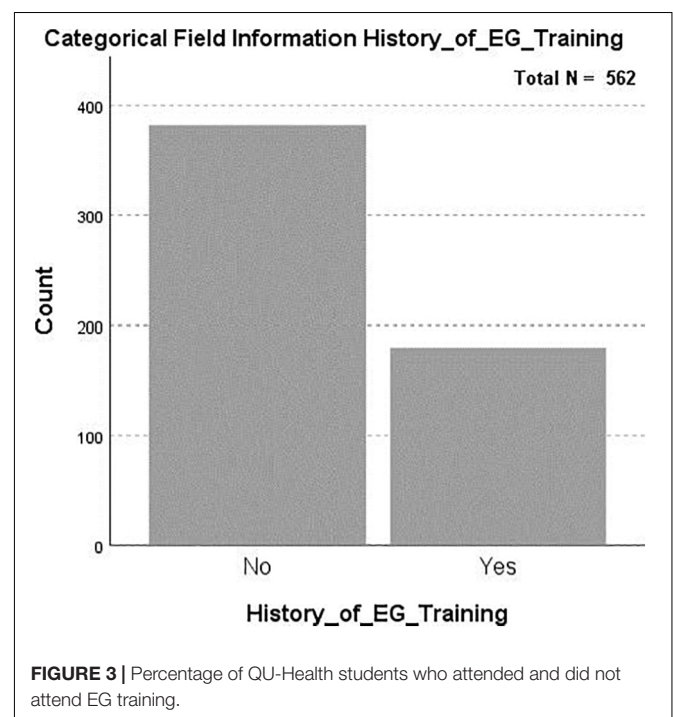


FIGURE 3 | Percentage of QU-Health students who attended and did not attend EG training.

TABLE 1 | Demographic characteristics.

Criteria	QU-Health attended EG training, n = 180	QU-Health who did not attend EG, n = 382
Gender (females)	180 students (100%)	382 (100%)
Nationality (Qatari)	180 students (100%)	382 (100%)
Age	20.505, IQR = 2.5	20.270, IQR = 2.8

the international school type with $p < 0.001$ and OR of 3.406 (1.744–6.651) (see **Figure 2**).

Empower Generations Training and Initial Career Interest

Among the group who attended EG training, there were 117 students (30.5%) who reported healthcare as their initial career interest, whereas 63 students (75.0%) reported that they did not have an initial career interest of Healthcare before they joined the EG training. In comparison, among the group who did not attend EG training and were enrolled to QU-Health immediately, 267 students (69.5%) reported an initial career interest in healthcare, whereas 21 students (25%) reported that they had no career interest in healthcare. The p -value shows significance <0.001 , and the OR was highly significant between both groups, that is, 12.655 (6.579–24.346) (see **Table 3**).

The health majors composite includes 562 female students: 15 from Dental Medicine, 302 from the College of Health Sciences, 177 from the college of medicine, and 68 from the College of Pharmacy. The analysis was performed as a composite for the QU-Health colleges to reduce the effect modification of capacity enrollment and years of operations per healthcare major. The number of students at QU-Health with no history of EG training are as follows: 13 (86.7%) from Dental Medicine College, 201 (66.6%) from the College Of Health Sciences, 110 (62.1%) from the College Of Medicine, and 58 (85.3%) from the College Of Pharmacy. QU-Health students with a history of EG training include two (13.3%) from the Dental College, 101 (33.4%) from the College Of Health Sciences, 67 (37.9%) from the College Of Medicine, and 10 (14.7%) from the College Of Pharmacy. The logistic regression was adjusted based on the type of college.

The high school percentage and GPA were not normally distributed, thus the median and IQR were reported. We

performed a non-parametric test for significance using an Independent-Samples Mann-Whitney U Test. The findings indicate an insignificant association between the history of EG training and the high school percentage ($p = 0.397$). However, the association between the history of EG training and the GPA is significant, with a $p < 0.00$ and OR 5.016 (2.954–8.518) (see **Table 4**).

Multiple Logistic Regression of EG Training, School Type, Initial Career Interest, and University GPA

Logistic regression was performed at 0.05 cut value, adjusted for the college. The college covariate remained insignificant after adjustment whereas the school type and initial career interest remained significant.

$$Y_{EGtraining} = -6.815 + 2.538 (\text{healthcare}) + 1.23 (\text{international}) + 1.61 (\text{Cumulative GPA}).$$

The model will help predict whether a certain student has gone through EG training provided that we know the initial interest, school type, and the Cumulative GPA.

DISCUSSION

The results indicate that the EG educational framework effectively directs adolescents' interests toward the fields of healthcare. The findings indicate that 75% of these students who attended EG training did not have an initial career interest in healthcare, in fact, successfully enrolled in QU-Health majors composite. On the other side, the findings indicate that only 21% of the students who are successfully enrolled in QU-Health majors did not have an initial interest in the careers of healthcare. The OR shows that students who did not have an initial career interest in

TABLE 2 | Logistic regression and OR for the school type.

Categories	Attended EG training, $n = 180$	did not attend EG training, $n = 382$	p -value	Odds (95% CI)
Government	63 (25.9%)	180 (74.1%)	–	Reference
Independent	70 (28.9%)	172 (71.1%)	0.948	0.984 (0.612–1.583)
International	47 (61.0%)	30 (39.0%)	<0.001	3.406 (1.744–6.651)

TABLE 3 | Empower Generations training attendance and the initial career interest in both groups.

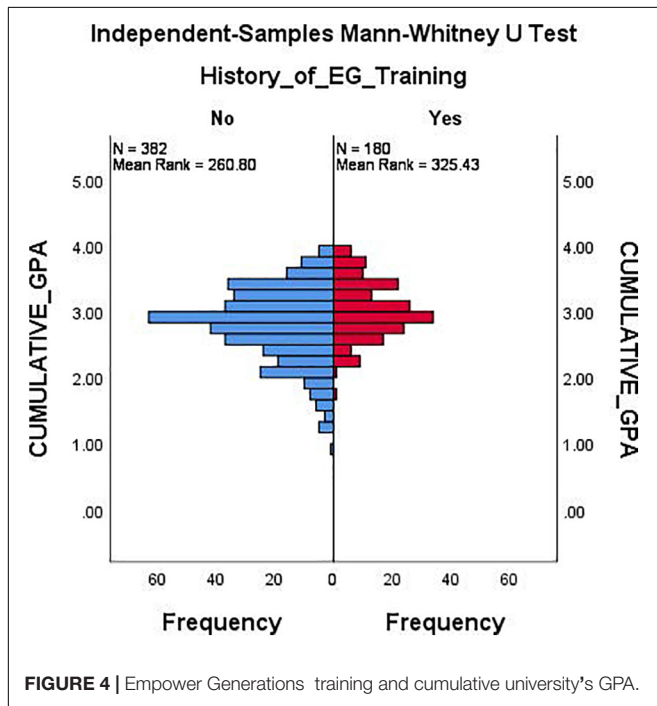
Categories	Attended EG training		did not attend EG training		p -value	OR (95% CI)
	Healthcare initial career interest	No healthcare initial career interest	Healthcare initial career interest	No healthcare initial career interest		
Health majors composite	117 (30.5%)	63 (75.0%)	267 (69.5%)	21 (25.0%)	<0.001	12.655 (6.579–24.346)

TABLE 4 | Empower Generations training and university's cumulative GPA of health majors composite.

Criteria	QU-Health attended EG training	QU-Health who did not attend EG	P value	OR
	Median, IQR	Median, IQR		
Cumulative GPA	3.0000, IQR = 0.62	2.8800, IQR = 0.73	<0.001	5.016 (2.954–8.518)

TABLE 5 | Logistic regression and OR for school type and initial career interest.

Exposure variables	Odds (95% CI)	P value	Coefficient
School type		0.001	
Government	Reference		–
Independent	0.984 (0.612–1.583)	0.948	–0.016
International	3.406 (1.744–6.651)	0.000	1.225
Initial career interest	12.655 (6.579–24.346)	0.000	2.538
Cumulative GPA	5.01 (2.954–8.518)	< 0.01	1.61
Constant			–6.815



healthcare but were successfully admitted to QU-Health majors are approximately 12.7 folds more likely to have attended EG training.

Regarding the school type, the results indicate that QU-Health enrollments through EG training involve international schools more significantly compared to enrollments without EG training. The international schools' enrollments through EG training are approximately 3.4 folds than enrollment without EG training (see **Table 5**). This indicates enhanced potential of the EG training to attract students from international schools. Despite the EG training being similarly offered for all the school types, the international school students seem to meet the admission language requirements to health majors more frequently compared to those from the independent and government schools.

Regarding the GPA, the findings showed that students who attend EG training have a five-fold higher chance to have a higher GPA at the university level (see **Figure 4**). The study has revealed a significant association between the EG training and university GPA. However, the study has shown no significant association between the high school percentage, individual colleges, or age.

The core contextual model of the EG training framework involves providing practical training, real-life experiences, and career education to enforce commitment and enhance the academic success in healthcare majors. A number of studies have focused on examining the effectiveness of various structured extracurricular educational projects by considering several variables that influence the career choices of adolescents and direct them toward healthcare careers. The results from these studies support the findings presented in this paper (Fouad and Smith, 1997; Turner et al., 2010; Orthner et al., 2013; Puertas et al., 2013; Day, 2017).

The obtained results were found to be consistent with a study performed through the Southern Ontario Mentorship Program, which included practical sessions for career orientation. Around 71% of the participants considered healthcare-related careers after joining the program, whereas 58% of the participants had considered this field before joining the program (Robinson et al., 2017). Many other studies have reported that educational frameworks effectively direct the career interests of high-school students. Radcliffe and Bos conducted a 7-year study that focused on building college and career readiness among adolescents, but there was no data available on the students' college acceptances. The study relied on data that was related to the participants' high-school years. The project provided the participants with a training framework for college-related knowledge, academic behaviors, and content knowledge. The study reported improved academic perception and career readiness, as well as academic performance among high-school students. This cited study focused on the Conley 2010 theory of enhancing high-school students' awareness of the college system (Radcliffe and Bos, 2013). Farland-Smith (2009) studied the effect of an inquiry-focused interactive approach on female middle-school students and concluded that exposing students to real-life college experiences and stimulating genuine interactions with scientists, even over a few days, greatly reinforces their positive perceptions of science and healthcare careers.

Future work will consider multi-gender cohorts, the second phase of EG training will include males since the Qatar University started recruiting both genders in the health majors.

LIMITATIONS

The limitations of this research are due in part to issues inherent in the case-control design. Because the study cohorts are a reconstitution of university records, any biases introduced into the classification or coding remain possible. Some high school students might have also switched their school type after they joined the EG training and before they are admitted to QU-Health, a fact that leads to misclassification bias. In addition, the study included a female-only cohort due to the limitations in male admission to the Qatar University's health majors.

The study includes various confounders such as the social, environmental, and intrinsic factors that influence the enrollment into the EG training, career interest, high school percentages, and GPAs. Another limitation is that the EG training is only offered to

Qatari students within the Qatar University; this limits the study's generalizability in other settings.

The case-control study has a retrospective nature, thus the respondents to the survey might have recall bias when asked about their initial career interest. The question about career interest that was sent through the email involved only two options: healthcare or not healthcare. Thus, students who were initially interested in natural or life science were not counted.

The study did not involve all the EG students, as some of them are still in high school and others have chosen other careers. It is also possible that members switched categories or transferred to other majors by the end of the study and the beginning of the next academic term.

Another potential limitation is that some of the high school students who joined EG training have chosen other healthcare careers in different national and international universities, these are not included in the study.

CONCLUSION

The study has shown a significant association between the EG training enrollment and the type of school and the initial career interest of high school students. The EG training is perceived to direct the interest of high school students toward careers in healthcare and enhance the performance of college students and their university GPAs. Thus, EG training is a useful bridge between high school and university healthcare enrollments.

Dubetz and Wilson (2013) revealed in their study that hands-on training experiences during the high school phase and meeting role models have a great impact on the career choices of high-school students in healthcare and US capacity building.

DATA AVAILABILITY STATEMENT

All datasets generated for this study are included in the manuscript/**Supplementary Material**.

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ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Ethical approval for this human subject study was obtained from QU-IRB is registered with MOPH under the following name and numbers: Name of the IRB: Qatar University Institutional Review Board (QU-IRB) Registration No.: MOPH-QU-010 Assurance No.: QU-IRB 1177-EA/19 (Expiration date: 13-NOV-2020) Tel.:+974- 4403-5307 Email: QU-IRB@qu.edu.qa. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

AUTHOR CONTRIBUTIONS

AA and RA planned, designed, drafted, and implemented the study. RK completed the data and statistical analyses. NA, FA, ME, MA, AE, OM, JP, ML, TH, TA, ZJ, SA, NM, SBo, SS, RS, HA, SBu, MRA, AI, MKA, SKA, and AB contributed to the conception or design of the work, the acquisition, analysis, or interpretation of the data for the study, or drafting and revising the intellectual content. All authors declare their approval for the final version to be published and agree to be accountable for all aspects of the work to ensure that any questions related to the accuracy or integrity of the work are appropriately investigated and resolved.

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The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/feduc.2021.521428/full#supplementary-material>

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