DOW SUSTAINABILITY FELLOWS
UNIVERSITY OF MICHIGAN

Project Healthy Schools- Bangladesh: Examining the International and Cross-Cultural Adaptability of Successful Juvenile Obesity Prevention Programs

September 13, 2018

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Abrar Iqbal *Mechanical engineering (BS), College of Engineering*

Mafus Uddin *Bachelors of Business Administration (BBA), Ross School of Business*

Advisors

Dr. Kim Allen Eagle *Director of the Frankel Cardiovascular Center at the University of Michigan, Albion Walter Hewlett Professor of Internal Medicine, Professor of Health Management and Policy at the University of Michigan School of Public Health*

Eva Kline Rogers R.N. *Co-director of Michigan Clinical Outcomes Research and Reporting Program, University of Michigan Health Systems*

Executive Summary

Rapid globalization has transformed more than just the socioeconomic structures of developing nations. Industrialization has altered patterns of food productions and consumption in nations historically associated with food shortages and malnutrition. Data collected in the past two decades shows a drastic increase in the prevalence of obesity in developing countries due to broadened access to low-cost yet high energy foods, such as edible fats and refined sugars, coupled with reduced physical activity. The unique manifestation of obesity in developing countries presents unparalleled challenges absent in developed nations.

Our team believes that the cultural adaptation and implementation of successful health education programs in developed nations can be used as a template for the creation of successful global health programs awareness programs that address the global obesity epidemic, while empowering groups that have been disenfranchised from health literacy, such as women. Over the last two years, Project Healthy Schools-Bangladesh (PHS-BD) was developed using existing community education programs in the United States as a framework for developing a preventative health education program tailored to the needs of Bangladeshis. Much like its parent program, PHS-BD distinguishes itself from existing health education programs in its commitment to empowering students and communities as stakeholders in a broader public health movement.

The Project Healthy Schools-Bangladesh program we developed is framed to empower students and encourage children, young women in particular, to take charge of their health and the health of their communities. Rather than present Bangladeshi culture as incompatible with healthy habits, our lessons encourage students to find creative solutions to the physical and cultural limitations of their surroundings. Through health education we hope to encourage the next generation of Bangladeshis to create health opportunities for themselves where there are none and claim spaces in their homes, schools, and communities for their health.

We hope to validate our empowerment based approach to preventative health with empirical data collection and carefully designed studies of our implementation of PHS-BD. In the upcoming years, we would like to validate needs in and expand the implementation of PHS-BD to communities of varying geographic and socio-economic backgrounds. As we continue to expand PHS-BD across Bangladesh, we hope to use behavioral data from our international PHS sites to quantify sustainable improvements in health behaviors across the nation and the world.

Introduction of Project Healthy Schools-Bangladesh (PHS-BD)

In developing countries, such as Bangladesh, obesity research is often overshadowed by malnutrition research and relief efforts. Following this trend, there is a noticeable gap in the literature regarding child and adolescent obesity in Bangladesh, as it has been found that studies and data related to obesity and related conditions such as diabetes in children and adolescents in Bangladesh are relatively scarce (Rahman et al, 2014). However, from the few studies on the subject that have been conducted, a definite pattern of an increase in obesity among the child and adolescent population in Bangladesh has been found. For example, a study conducted amongst school children in Dhaka aged between 3 to 18 years of age, found 17.9% obese and 23.6% overweight children and adolescents (Mohsin et al, 2010).

We believe that the same principles that globalized obesogenic conditions has the potential to improve global health by promoting the exchange of interventional tools between nations with established preventative programs and nations in the earlier stages of preventative healthcare development. Successful health education programs such as Project Healthy Schools (PHS), along with a research program on juvenile diabetes and obesity in Bangladesh can act as resource to help meet the demand for preventative healthcare.

Project Healthy Schools uses health and wellness learning modules centered around the five PHS goals to promote healthy habits related to diet and exercise, and is structured with sustainability in mind. PHS trains high school students as health ambassadors for younger students. Each school has a group of health ambassadors organized under a wellness coordinator, usually a school administrator. Health ambassadors act as mentors for younger students and as health advocates in the community by teaching the lessons to students in grades 4-6 and organizing fun community health events. The implementation of Project Healthy Schools varies greatly based on the time constraints, budgeting, and priorities of each participating school. Other factors, such as the socioeconomics, race and gender demographics, and parental involvement, are taken into consideration to tailor the PHS experience. Through this community-based approach to health education, PHS has improved health outcomes and health literacy in urban areas with less access to healthy foods and limited opportunities for exercise. Since 2004, the implementation of Project Healthy Schools (PHS) in the United States has demonstrated sustainable improvements to health indicators, such as total cholesterol, low-density lipoprotein, triglycerides, systolic and diastolic blood pressure (Eagle 2014).

Our team would like to see these substantial results in schools across Bangladesh as well through our adaptation of the Project Healthy Schools curriculum and program for the students of Bangladesh. With diabetes and obesity on the rise in Bangladesh, preventative care is imperative. This project recognizes the gravity of health education and how it affects the future of the Bangladeshi youth. Our program, Project Healthy Schools-Bangladesh (PHS-BD) is specifically created to facilitate critical thinking among the students to analyze behavioral health within the context of their culture and individual lives to foster sustainable healthy habits that can remain constant and long-term.

Project History and Background

Initial Proposal and Program Design (2015 - 2016 Academic School Year)

Presented proposal for Project Healthy Schools Bangladesh to Project Healthy Schools and Michigan Clinical Outcomes Research and Reporting Program (MCORRP) at the University of Michigan. Created an international steering committee of faculty and researchers to identify needs and scope related to juvenile health in Bangladesh. Designed long run program to address juvenile obesity and diabetes.

Phase 1: Curriculum Modification (2016 - 2017 Academic School Year)

Consultation with steering committee of faculty members across University of Michigan Medical School and School of Kinesiology, Harvard University, and the Changing Diabetes in Children Programme at BIRDEM Teaching Hospital in Bangladesh. Modification of lessons to incorporate needs identified in previous phase. Curriculum designed with careful consideration to religious observance of fasting, social stigma surrounding women's health and exercise, lack of movement opportunities, and limited health literacy in Bangladesh. Health-positive elements of Bangladeshi culture, such as the wide variety of fruits and vegetables found in Bangladesh, are referred to throughout the curriculum to inspire students to take pride in their traditions.

Phase 2: Pilot Program of Project Healthy Schools (2017 - 2018 Academic School Year)

Outreach to schools in Bangladesh to participate in Pilot program. Travel to Bangladesh to work with schools to train student ambassadors and implement program. Successful trial of Project Healthy Schools Bangladesh, reaching taught health and nutrition to over 175 girls in grades 4-6 at Faizur Rahman and 95 co-ed students at the Akij Foundation School and College. Data not collected in trial, instead qualitative feedback used to identify strengths and weaknesses of program design and curriculum for further revision.

Current Phase 3: Revision and Expansion of Program (2018 - 2019 Academic School Year)

Based on the success of the pilot run, expansion of PHS-BD to more schools and organizations interested in the program following revision and translation of program to reach wider demographics of students. Design and implementation of a comparative study of program impact across geographic and socio-economic boundaries with non-invasive behavioral data collected through pre- and post- behavioral questionnaires and fitbit activity data.

The data collected from the international PHS sites will be compiled into a comprehensive database as a global extension of the current PHS database which will broaden research opportunities for comparative studies, longitudinal studies, and clinical investigations pertaining to the transnational development of obesity. The analysis of these findings can be utilized by researchers in the emerging field of preventive cardiology in developing countries.The success of PHS adaptation for Bangladesh will validate the adaptability of preventative programs on a global scale.

Methodology for Current Program Revision and Expansion

The possibility of national implementation of the program was discussed in meetings with the the Public Health Foundation of Bangladesh, officials in the Bangladeshi government, the World Health Organization, and other institutions committed to preventative healthcare promotion in Bangladesh. While the original PHS-BD program had been developed for students in traditional and formal forms of education, in order to benefit a broader demographic, it was understood that the program would need to be refined to be more reflective of the diversity of needs experienced by students across Bangladesh. Many communities opted to send their children to study in one of Bangladesh's many religious seminaries in deference to religious traditions. Working children from families facing extreme poverty often enrolled in short-term non-formal primary education/basic literacy programs that would not interfere with their economic need to work. With consideration to the range of skills and proficiencies across the formal and nonformal education sectors, the existing PHS-BD program and curriculum was re-evaluated and re-designed for scalability.

To begin with, the strengths and weaknesses of the existing Project Healthy Schools - Bangladesh (PHS-BD) curriculum were evaluated based on feedback received from the 2017-2018 small-scale pilot. Lessons learned from the pilot were instrumental in designing a more efficient, effective,and memorable PHS-BD program for students. Revision activities included - creating a more demonstrative training program that reduced the time to orient teachers, identifying and correcting areas of the curriculum that were comparatively dry or difficult to understand, and translating the curriculum to Bengali . Following the first draft of translations, translated scientific terminology was cross-referenced with school administrators to ensure ease of understanding for student populations with limited schooling and/or limited scientific proficiency.

Following the development of a more inclusive and comprehensive program, we partnered with the Centre for Woman and Child Health to design and implement a study to validate the scalability of the new Project Healthy Schools - Bangladesh (PHS-BD) program. This study will be conducted with the purpose of comparing and describing behavioral health trends between student populations in semi-urban Ashulia and urban Dhaka as well as evaluating the impact and efficacy of the Project Healthy Schools Bangladesh (PHS-BD) curriculum on both populations. The results of the study are expected to validate the hypothesis that the participation in the revised PHS-BD program will have a positive impact on health behaviors for diverse student populations despite differences in wealth, geographic location, and access to educational opportunities.

With the support of the CWCH, the Project Healthy Schools Bangladesh (PHS-BD) curriculum will be piloted in four to five schools across Dhaka and Ashulia with 600 students enrolled in each location with control groups for comparison. The CWCH will implement PHS-BD in the Ashulia region in addition to the sites added by our team in Dhaka. The student population in Ashulia will be comprised of semi-urban youth from lower socio-economic backgrounds, many being the children of garments workers from nearby factories, than the Dhaka cohort. The selection of schools in Ashulia and Dhaka will allow for a comparative understanding of health behaviors and program impact on health behaviors across the diverse demographics of students in both Ashulia and Dhaka.

All students enrolled in the program will be administered a self-reported Human Behavioral Questionnaire (HBQ) both before enrollment in and after completion of the 10 PHS-BD lessons to assess health behaviors prior to participation and following completion of the program. This questionnaire is an abbreviated version of the School Physical Activity and Nutrition (SPAN) survey, which is a validated tool for evaluating health behaviors (diet, physical activity, sedentary habits) in students of this age group. Twenty-four students, twelve from the Ashulia region and twelve from the Dhaka region, will be randomized to observe the impact of intervention on physical activity levels and BMI. These twenty-four students will be given a fitbit device for one week (1) prior to the program, (2) during the program, (3) immediately after the program, (4) one month after, and (5) one year after to monitor impact of program on minutes active per day. Students in the randomized trial will also be asked to provide height and weight information during these weeks of data collection in order to monitor the impact of the program on BMI.

The data collected from the international PHS sites will be compiled into the international Project Healthy Schools Database. Utilization of a database will broaden PHS research opportunities for comparative studies, longitudinal studies, and clinical investigations pertaining to the transnational development of obesity. The analysis of these findings can be utilized by researchers in the emerging field of preventive cardiology in Bangladesh and other developing countries facing similar public health challenges.

Results and Accomplishments

Several preparations were made in anticipation of the expansion of Project Healthy Schools-Bangladesh (PHS-BD). Revisions to the curriculum were made under the guidance of the Project Healthy Schools curriculum development team as well as stakeholders in Bangladesh, including school teachers, researchers, and clinicians.

The translated materials were then printed and organized into 25 reusable classroom sets in Bangla. Each set contained activities and worksheets for each of the 10 lessons as well as three copies of the PHS-BD lesson plan/curriculum. Each set was designed to accommodate up to 50 students per session, allowing for an impact potential of 500 - 1,250 students.

Upon the commencement of the school year in August, we worked closely with school administrators, teachers, and students to expand the program within Dhaka. Several training sessions were held with the student teachers in each school, who would be teaching the 10 PHS-BD lessons to the younger students. Training entailed an orientation to the program, followed by a teaching demonstration to prospective student teachers. A follow-up training session was arranged in which student teachers demonstrated their understanding of the program by practicing their teaching skills in groups. 28 student teachers and 6 teachers were trained to teach the PHS-BD lessons to the 600 students in Dhaka. Laptops were given to two of the Dhaka schools to give PHS-BD student teachers access to the Project Healthy Schools site and resources.

The 600 students in Ashulia will be added and managed by the research team at the Centre for

Woman and Child Health (CWCH) in Ashulia. The program was introduced to the CWCH and the logistics of the study were organized under the guidance of Dr. Khurshid Talukder at the CWCH. With the assistance of the CWCH, the data from all sites in Dhaka and Ashulia will be added to the PHS database and analyzed. We are currently working with the CWCH to select schools in Ashulia and begin the training process. PHS-BD will begin its trial concurrently in both Ashulia and Dhaka from January 2019, the beginning of the next academic school year in Bangladesh. Once the baseline data is collected and inputted in January, we will have a substantial amount of data to describe and compare the behaviors of the student populations in Ashulia and Dhaka. The post-program data from the 2018-209 trial of Project Health Schools-Bangladesh will be prepared for analysis by the time the schools take their summer vacation in June 2019.

Anticipated Impact

Project Healthy Schools-Bangladesh has aimed to create a community-based movement for public health and prevention. Through the engagement of stakeholders across multiple disciplines, both in Bangladesh and across the world, we have anticipate the creation of a global research community dedicated to the advancement of public health education in face of the global obesity epidemic. The dedication of the students, schools, and research institutions is expected to resound the geographic boundaries of the trial with the potential for impact across Bangladesh.

Beyond the implementation of PHS-BD between 2017 and 2018, the program has come to embody our original vision of creating a program that would be a shareable resource to further the understanding of obesity prevention in developing countries. Everything from the methods used to adapt the program to the finalized curriculum has the potential to impact the design of future programs within the discipline of public health education. We are proud to share that our program has captured the interests of researchers in nutritional health education across multiple interventional programs, including an education program for pregnant mothers with gestational diabetes in Bangladesh and the government officials in Pakistan. Through expansion and further adaptations, we hope to significantly impacting the health of generations in Bangladesh and around the world.

Recommendations and Next Steps

Meetings with government officials, leading healthcare providers, and international organizations such as the WHO signaled the viability of a nation wide expansion of PHS-BD as well as avenues for possible collaboration in the near-future. In order to validate the need for public health education in other non-formal education settings, team members Abrar Iqbal and Faatimah Raisa went on several field visits to non-traditional/non-formal educational institutions across Bangladesh including non-formal primary education program in Rayer Bazaar slum as well as religious boarding schools for orphans, such as the Bondhu Kutir orphanage in Laksham village.

Based on feedback from stakeholder and observations during these field visits, a thorough needs assessment of health education programs across Bangladesh's formal and nonformal education platforms must be conducted to expand PHS-BD beyond its current implementation in urban and semi-urban formal schools. While PHS-BD has added socio-economic variability with the addition of sites in Ashulia, it would be prudent to explore broader socio-economic and geographic variability with the needs assessment. The findings of the needs assessment will allow for the development of several versions of PHS-BD, each program adapted to each of the many educational models in Bangladesh. Expansion will entail greater in country support, including a dedicated full time PHS-BD employee, to manage the growing number of schools enrolled in PHS-BD.

Project Healthy Schools-Bangladesh is requesting additional funding to conduct a needs assessment of health education and education platforms followed by the development of additional versions of PHS-BD for each educational platform for a nation-wide expansion. Based on these goals, we hope to prepare and a conduct a needs assessment during summer 2019 and the development of two more versions of the PHS-BD program, one for religious seminaries and one for non-formal primary/basic education platforms for working children.

In order to achieve these revised milestones, we will delegate sub-teams to the adaptation of each additional versions of PHS-BD. We hope to recruit students from the University of Michigan's School of Education in order to develop our understanding of curriculum development for non-traditional education platforms. Each subteam will work with a relevant non-traditional education program to design and implement the adapted PHS-BD programs during the 2019-2020 school year. The Centre for Woman and Child Health (CWCH) will remain our core research affiliate in Bangladesh, with whom we will design and implement further studies to analyze the efficacy of further program adaptations.

Projected Timeline and Milestones

Fall 2018: September - December 2018

- Preparation and organization of program in schools from Ashulia in collaboration with the Centre for Woman and Child Health (CWCH).
- Development of training video and remote training model for future PHS-BD training sessions.
- Implementation, collection, and input of baseline data prior to program trial.
- Contextual research and stakeholder mapping of school based health education programs in preparation of Needs Assessment.

Winter 2019: January 2019 - May 2019

- Implementation and commencement of PHS-BD program with 600 students from Ashulia and 600 students from Dhaka.
- Monitoring of program and data collection from program trial. Develop comparative and individual descriptions of populations in Dhaka and Ashulia using baseline surveys. Analysis will

aid the determination of needs amongst youth populations.

- Development of needs assessment of school based health interventions in Bangladesh:
    - Outreach to institutions involved in research.
    - Development of itinerary of meetings and field-visits to each program.
    - Refinement of interview protocols and methodology to capture interactions and observations in Needs Assessment.

Summer 2019: June 2019 - August 2019

- Analysis of data collected prior to and after completion of PHS-BD program in order to evaluate efficacy of program and validate national scalability.
- Needs assessment of school-based health programs in Bangladesh.
    - Meetings with stakeholders including government officials, healthcare providers, non-governmental organizations, parents, and students.
    - Field visits to programs across Bangladesh including comparative evaluation of program strengths and weaknesses.
    - Identify and understand needs of student populations in nontraditional education platforms in order to create adaptations of PHS-BD for each platform.
- Dissemination seminar to potential stakeholders and partners, including WHO and Bangladesh Government.
- Selection of non-formal education partners for implementation of adapted versions of PHS-BD program during the 2019-2020 academic school year.

Fall 2019 - Winter 2019: September 2019 - May 2020

- Development and implementation of adapted versions of PHS-BD for various nontraditional education platforms including religious seminaries and nonformal education programs for working children.
- Collection and analysis of data from implementation of PHS-BD in both formal and nonformal education platforms.

Proposed Budget

EXPENSE	BASIS FOR CALCULATION	COST
Location: Dhaka, Bangladesh (June 22 -August 31, 2018)		
Transportation		
Airfare	DTW-DAC (roundtrip) $1,500/person x 3 team members	4,500
Local transportation	$1,000/month x 2 months	2,000
Living Costs		
Housing	$250/month/person x 3 people x 2 month	1,500
Food	$500/month x 2 months	1,000
Materials, Equipment, etc.		
Teaching Materials (50 additional classrooms, traditional and nontraditional)		
Print copies of lesson plans	100 lesson plans for teachers, ($10/set x 100 sets)	1,000
Print copies of student worksheets	10 pages per student ($0.5/laminated page x 7,500 pages)	3,750
Re-usable props/education models	50 sets of props ($50/set x 50 sets)	2,500
Disposable props (paper plates, notecards)	$20/class x 50 classroom sets	1,000
Lesson 2 - laminated poster activity	$15/poster x 50 posters	750
Lesson 4 - dry erase poster	$10/poster x 50 posters	500
Organizational materials (bins, ziploc bags)	$15/poster x 50 posters	750
Research Materials		
Additional fitbits for expanded study	$60/fitbit x 50 fitbits	3,000
Pre-and post surveys for new students	2 surveys/student x 2,400 students x $0.50/survey	2,400
Pre-and post surveys for control group	2 surveys/student x 2,400 students x $0.50/survey	2,400
Labor Costs		
Full time staff to manage sites Translation of additional materials	$600/month x 12 months	7,200
		Total Cost
	Total Additional Funding Requested	29,750

Alternate Budget: The size of expansion will be determined by the availability of funds. With partial funding we will adjust the distribution of funds more towards program development and reduce the number of schools and geographic reach in future trials of PHS-BD. Prioritizing development of the curriculum and activities will optimize funds by creating concrete deliverables that can be distributed through other funding mechanisms.

Teaching demonstration of Project Healthy Schools - Lesson 2: Maache Bhaate Bangali in a 6th grade classroom during PHS-BD student teacher training (above). Students work in team to complete Agricultural Map Activity to see the correlation between Bangladesh's geography and food culture (below).

Orphanage director Omar Rahman and the boys of Bondhu Kutir orphanage in Laksham, Comilla take a quick photo-break while giving a tour of the Bondhu Kutir lodgings and school house.

Orientation to Project Healthy Schools - Bangladesh for student teachers with Principal Imdadur Rahman at the FRII - Banasree campus in Banasree, Dhaka.

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Awards
Davis Projects for Peace Award Recipient
University of Michigan International Institute Fellow
DOW Distinguished Award Fellowship - Graham Sustainability Institute
Walter and Esther Hewlett Named Intern - Frankel Cardiovascular Center

Education
University of Michigan College of Literature, Science, and Arts - Class of 2019
Major in International and Comparative Studies in Political Economy and Development

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Experience

Project Healthy Schools Bangladesh June 2016 - Present
Proposed and designed juvenile obesity research collaboration between the University of Michigan, Harvard University, and nonprofit health organizations in Bangladesh. Developed preventative health curriculum and global database to assess effects of education on health outcomes. Traveled to Bangladesh to set up and pilot program of curriculum with over 170 enrolled students. Successfully completed pilot as of January 2018. Received 2018 Davis Projects for Peace Award and DOW Award to expand program on a national scale in Bangladesh. Traveled to Bangladesh with grant funding for program expansion. Discussed the possibility of countrywide implementation of project World Health Organization and the Bangladesh Ministry of Health and Family Welfare in expansion.

BLUElab Bangladesh September 2017 - Present
Co-founder and Finance Lead
Co-founded BLUElab Bangladesh engineering project team at the University of Michigan. Organized travel to conduct partnership evaluation and needs assessment in Bangladesh during summer 2018. Traveled to communities across Bangladesh to understand needs related to climate change, urban poverty, and natural disaster relief. Applied for and received institutional for project team and travel. Established partnership to explore scope of engineering solutions for residents of urban slums with partner organization Spreeha.

Political Science 389: Social Movements January 2018 - April 2018

Enrolled and completed Political Science 389 - Social Movements class at the University of Michigan. Researched and applied understand of political science theories to interactions between state actors and civil society movements. Developed and completed 30-page thesis on "Child Labor Regulation through Representation in Bangladesh" describing union representation as a means of regulating work conditions for child laborers in Bangladesh. Submitted summarized presentation of thesis to the International Labor Organization (ILO). Interviewed garments owners and workers in Bangladesh to develop practical understanding of labor rights in Bangladesh.

University of Michigan Journal of Bioethics December 2017 - Present

Editor

Helped establish the University of Michigan's first peer-reviewed and student led Journal of Bioethics. Organized and published first issue in Summer 2018 with publications from institutions across the country.

Bangladesh Student Association at the University of Michigan September 2017 - Present

Executive Board Member

Organized activities and programs to raise awareness for several important issues in Bangladesh including the Rohingya crisis, human rights violations in the labor industry, and genocide recognition. Shared Bangladeshi culture and solidarity across campus through Bangladeshi New Years celebrations and annual picnics.

Freelance Graphic Design Work June 2015 - Present

Applied freelance design proficiency to assist in logo design, website development, and product design. Notable work includes logo for University of Michigan Pulmonary Hypertension database, University of Michigan Cardiac Rehab database, BLUElab Bangladesh logo, and FCAB website.

Michigan Clinical Outcomes Research and Reporting Program June 2016 - August 2017

Student Researcher and MAQI2 Team Lead

Assisted clinical outcomes research through data abstraction on warfarin usage and INR scores as a part of the Frankel Cardiovascular Center. Guided student team on data management of the Michigan Anticoagulation Quality Improvement Initiative (MAQI2) Database. Worked with Project My Heart Your Heart to screen pacemakers for re-use and reprogramming in developing countries.

Foundation for Charitable Activities in Bangladesh (FCAB) May 2016 - April 2017

Student Leader

Collaborated with FCAB student team on larger FCAB initiatives, including an annual eye clinic and village mentorship program for younger girls. Organized meetings and seminars with faculty, ambassadors, and government officials in Bangladesh and the United States. Prepared briefs for U.S. Ambassador Marcia

Afra Kamal

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Education:

University of Michigan, Ann Arbor, MI; LSA Honors College;
Intended Major: Public Health; Expected Graduation: May 2021

Carman-Ainsworth High School, Flint, MI
Graduation: May 2017; GPA: 3.9/4.0

Volunteer and Work Experience:

June 2018-Aug 2018 Lab Assistant, Chemistry Dept, Mott Community College, Flint, MI

- Prepared all chemistry experiments by making required chemical solutions and setting up equipment and supplies
- Assisted in break-down of lab experiments by cleaning and putting away used equipment and organizing chemistry prep/storage room

Oct 2017-April 2018 Research Assistant, ICPSR, University of Michigan, Ann Arbor, MI

- Digitized 1950's-era research documents using Google Forms and Excel

Feb-March 2018 Financial Literacy Ed. Volunteer, Junior Achievement, Louisville KY

- Planned and participated in weeklong financial literacy education program by teaching elementary school students using JA financial lesson plans

Feb 2016-Aug 2017 Founder/Creative Director, Kindessa Co.

- Started e-commerce fashion company with 150% return on investment
- Designed brand website and managed social media and email advertisements
- Communicated directly with customers and manufacturers

Awards and Honors:

National Merit Commended Scholar
AP Scholar
National Honor Society Inductee
Jean Fairfax Scholarship Recipient (full tuition award, University of Michigan)

Student Organizations:

Project Healthy Schools Bangladesh- Program Logistics Chair
Muslim Students Association- Social Chair

Skills: Microsoft Office; Google G Suite; general computer proficiency
Data entry
Student event coordination and planning/logistics

Certifications: American Red Cross CPR/AED Professional Rescuer
American Red Cross First Aid certified

Khadeejah M. Khan

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Present Phone: 734-219-8542
Email: khankm@umich.edu

EDUCATION

University of Michigan Ann Arbor, MI (September 2017 - April 2019)
School of Public Health - Bachelor of Sciences in Public Health Sciences
Stephen M. Ross School of Business - Minor in Business Administration

WORK EXPERIENCE

Access Behavioral Care (2015 - present)
Worked in an office administration with strong organizational skills and promptness. Observed of administration of mental health care by attending physician and psychological therapist.

ADDITIONAL EXPERIENCE

Project Healthy Bangladesh (2018 - present)
Working on recruitment and curriculum revision and of health-related lessons to be administered in Bangladeshi public schools as a part of health awareness movement. Health program developed by Ann Arbor, MI to promote healthy eating habits and encourage physical activity amongst school-going youth.

Infinity Sehat (2018 - present)
Create and develop content for for Sindh government funded public health startup which aims to make health education accessible for the common man in Pakistan. Currently working on developing a mental health workshop for students in low-income areas.

Sindh Civil Hospital Internship (2018)
Shadowed surgical specialist in public government hospital of Karachi which caters to low-income populations of Karachi. Observed day-to-day issues that arise in health management and patient care.

Henry Ford Wyandotte Hospital Career Internship (2015)
Shadowed Internal Medicine specialist at Hospital. Became familiar with hospital setting, learned about process of dictation, how medical records are kept, significant amount of interaction with patients.

ADDITIONAL SKILLS

-Passion and strong interest in promoting healthy living, disease prevention, and management of communicable and non-communicable diseases in the developing world.
-Data entry and analysis experience and familiarity with R programming from
-Quantitative Model & Analysis class and Data Driven Solutions in Public Health class
-Strong organizational skills
-Strong written communication and verbal skills from Introduction to Public Health
-Policy class and Community, Culture, & Social Justice in PH Class
-Strong attention to detail and particularities
-Large amount of experience in working independently and in collaborative environments.
-Knowledge and Class Experience in working with Microsoft Office (including Excel) &
-Google Suite as well as basic computer skills
-Experience with Epic electronic health record system
-Comfortable with learning and performing newly learned skills

KHADIZA BEGUM

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Objective

Ambitious student who wishes to broaden her spectrum of knowledge in the workforce as well as gain skills and experience for future professional careers.

Education

Fitzgerald Senior High School – Warren, MI
Graduated June 2016 – *summa cum laude*

University of Michigan – Ann Arbor, MI
College of Literature, Science, & Arts – Junior
B.S. in Sociology of Health & Medicine with a minor in Islamic Studies
Expected graduation: May 2020

Extracurricular Activities

MCWT Web Design for Girls
University of Toledo Pharmacy Camp
Summer Bridge Scholars Program
Comprehensive Studies Program
ARISE Mentorship Program (SAAN)
Barger Leadership Institute
Zeta Omega Eta Rush/Recruitment Committee, Health & Wellness chair
Bangladeshi Student Association Marketing Chair, Secretary
PAANI - non-profit organization
Project Healthy Schools - Bangladesh Program Logistics Team

Summary of Skills

- ❏ Quick learner
- ❏ Attention to detail
- ❏ Cooperative team member
- ❏ Exceptional multi-tasker
- ❏ Computer proficient: Microsoft Office, Google Drive
- ❏ Marketing skills e.g. graphic design, social media
- ❏ Customer service experience in multiple settings
- ❏ **Languages** - English, Bangla, Urdu, Hindi

Work Experience

Victors Market & Café
Deli and Pizza / March 2017 - May 2017
200 Observatory St., Ann Arbor, MI 48109
Gerald Heiden - (734) 764-2118

Center for Campus Involvement
Entrance Monitor / Sept. 2017 - April 2018
530 S State St. | 2205 Michigan Union
Ann Arbor, MI 48109
Nicholas Smith - (734) 763-5900

Comprehensive Studies Program
Peer Advisor / June - Aug. 2018
435 S State St. | 1139 Angell Hall
Ann Arbor, MI 48109-1003
Makeda Turner - (734) 764-9128

Office of Undergraduate Admissions
Intern / June - Aug. 2018
515 E. Jefferson | 1220 Student Activities Building
Ann Arbor, MI 48109-1316
Alison Wang - (734) 647-7850

Address: 600 East Madison St, Ann Arbor, MI-48109
Mobile: +1 (734) 358 0771
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LinkedIn: https://www.linkedin.com/in/abrariqbal/

ABRAR IQBAL

CAREER OBJECTIVE

I want to build my career in Mechanical/Robotics Engineering while working with a senior employer.

SKILLS & ABILITIES

IT Skills

I am **proficient** in the following **software**:
- Microsoft Office
- Adobe Dreamweaver
- Adobe Photoshop Lightroom LLC
- Adobe Muse

I am **proficient** in the following **programming languages**:
-HTML
-JavaScript
-CSS
-C++

Miscellaneous Skills

I **co-founded** and directed a **start-up T-shirt business** called "Tenacity" self-funded by school colleagues.
I developed my **practical science skills** while working as lab assistant in the Physics Lab of my school.
I **volunteered** in a charity organization called Spreeha which educated and supplied to the medical needs of the slums of Dhaka, Bangladesh free of cost. I **taught underprivileged children** Science and Mathematics in after school teaching programs free of cost. Catered to their medical needs as an assistant at the walk-in clinic for the underprivileged.
I am an **experienced leader**. I have **captained** my High School Soccer Team to multiple championship trophies, have been **president** of my high school **business club** for 3 years and I have led a 7-man team in the creation and operation of a t-shirt business. I was secretary of the high school Science Club.

EDUCATION & TRAINING

Education

2017 - Present	**Bachelor of Engineering** **UNIVERSITY OF MICHIGAN (College of Engineering)**
2017	Advanced Level Certificate (Mathematics, Physics, Economics) Cambridge International Examinations OXFORD INTERNATIONAL SCHOOL

Academic Achievements

2016	Received National Daily Star Award for outstanding results in Ordinary Levels
2016-2017	President – Oxford International School Business Society

WORK EXPERIENCE

2015-2017	Co-Founder/Director TENACITY SHIRTS **Core Skills:** Innovation in design, sales and marketing, quick response to change in demand, teamwork
2014-2017	Private Tutor Dhaka Tutors LTD. **Core Skills:** Detail-Oriented, Responsible, Assessment, Tutoring Strategies

INTERESTS

Soccer: former captain of the Oxford International School Soccer Team for 3 years.
Music: Currently hold a diploma for a 10 year course on Classical Bengali Music(Vocal). Performed in 8 classical concerts and as a paid vocalist in pubs.
Debate: Attended multiple Model United Nations and national level Debate Tournaments in high school.
Web Design: Have created websites as a freelancer on ODesk and UpWork for individual consumers and businesses. Am a certified website designer from New Horizons LLC.

REFEREES

Safaat Ullah

School Counselor, Oxford International School
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MAHFUS UDDIN

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EDUCATION

UNIVERSITY OF MICHIGAN — **Ann Arbor, MI**

Stephen M. Ross School of Business

Bachelor of Business Administration, May 2019

- GPA: 3.6/4.0
- Minor in Computer Science
- Jean Fairfax and Raj Reddy Scholar
- Emphases in Finance and Corporate Strategy
- Analyst, Michigan Investment Group
- Participant, Comprehensive Studies Program

EXPERIENCE

CREDIT SUISSE SECURITIES (USA), LLC — **New York, NY**

2018 — **Investment Banking Summer Analyst - M&A**

- Analyzed and assisted deal team execute mergers, acquisitions, divestitures, and leveraged buyouts for strategic and financial buyers across all industry groups
- Built financial models to perform discounted cash flow (DCF), accretion / dilution, leveraged buyout (LBO) analyses as well as comparable companies, precedent transactions analyses
- Created mock pitch to advise a large consumer retail company on strategic alternatives, particularly M&A, expanding my knowledge base and presentation skills

2017 — **FREUDENBERG-NOK** — **Plymouth, MI**

Finance/Accounting Intern

- Managed 6 accounts for the North American corporate headquarters and manufacturing plants in the USA, Mexico, Canada and Brazil for monthly, quarterly and yearly reportings
- Analyzed expenses and revenue at each plant often uncovering operational inefficiencies for controllers at plants leading to $70,000+ potential savings in equipment purchases
- Conducted verification of miscellaneous expenses at plants through past twelve months prior to consolidation for legal entity, assisting management to view finances at high level

2015-2018 — **ECONOMIC GROWTH INSTITUTE** — **Ann Arbor, MI**

Research Associate

- Expanded EGI team by coordinating meetings with project managers from three universities to extend reach to distressed Wisconsin companies and communities, increasing potential of partnership opportunities throughout the Midwest by over 50%
- Coordinated communication with companies and communities affected by Department of Defense contract withdrawals, engaging 3 companies for EGI team to partner
- Led entry level analysts training on how to conduct market research and to navigate through 10,000+ defense contracts, resulting in 25% increase of contracts recorded in 2016
- Compiled quantitative data from multiple databases in Excel to identify significantly distressed companies, presenting 3 key target partners to senior management
- Developed adjustment plan for local supply-chain management logistics firm, Patriot Solutions, providing management team with insight into new markets with complex logistics
- Developed adjustment plans for regional firms significantly hurt by defense drawdowns, to diversify into various industry, strengthening firm's liquidity and financials

2016 — **CART** — **Detroit, MI**

Analyst

- Approached local media outlets in the Detroit area to increase exposure of CartRides to residents of inner-city of Detroit, successfully pushing out 4 articles on CartRides
- Built financial models with CartRides' finance team to project gross margin in both base and downside scenarios, increasing partnership length with Meijers by 33%
- Assisted in developing and controlling inflow of consumer usage data to company database, substantiating future growth projections of CartRides usage with major clients

ADDITIONAL

- Experienced in C++ & Python, Java, HTML and Javascript
- Participant: Silver Lake LBO competition
- Fluent in Bengali
- Studied abroad in Morocco and Spain
- Former cook at a 5-star Brazillian churrascaria (steakhouse)