

Project Taking Charge: An Interprofessional Education Approach to Improve Health Outcomes

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Received: 20 Apr 2022; Accepted: 23 May 2022; Published: 28 May 2022

Citation: Howard J Eng, Theodore G Tong. Project Taking Charge: An Interprofessional Education Approach to Improve Health Outcomes. J Med - Clin Res & Rev. 2022; 6(5): 1-4.

ABSTRACT

Project Taking Charge (PTC) is an interprofessional community health education experience for medical, nursing, pharmacy, and public health students. PTC uses a patient/family center, inter-professional team-based approach to change project participants' lifestyle and health practices that will improve their health status. The PTC employs the KAP-O health promotion strategy that increase Knowledge resulting in positive Attitudes changes that lead to desirable Practice changes of project participants. Positive health behavioral (practice) changes result to health Outcome improvements. Participants who attended more than one health promotional session decreased their risk factors as indicated by the screening results.

Keywords

Interprofessional Education, Health Care Team, Health Promotion, Health Outcome, KAP-O.

Introduction

The aging of U.S. population and the growing number of chronic diseases have resulted in the increasing number of patients with complex needs, requiring comprehensive, continuous and coordinated care with a variety of healthcare professionals [1]. In response to this need, new models of healthcare have been developed that include collaborative interprofessional healthcare teams. The World Health Organization and Accreditation Council for Medical Continuing Education have defined an interprofessional team comprised of team members from two or more different professions who learn with, from, and about each other to enable effective collaboration and improve health outcomes [2,3].

There are several systematic review and meta-analysis study articles have been published on the interprofessional healthcare teams impact on patient health outcomes [1,4,5]. Majority of healthcare team studies in the articles have reported positive impacts on health outcomes. Collaborative interprofessional

health education is critical in preparing students for healthcare team practice.

In 2009, six associations of schools of health professions (medicine, osteopathic, nursing, pharmacy, public health, and dentistry) form the Interprofessional Education Collaborative (IPEC) [6,7]. The IPEC encourages and advances interprofessional learning experiences in the preparation and education of health-professional students for team-based care and improvements in population-based health outcomes [6]. There are many ways to teach interprofessional health education such as in large classrooms, small group tutorials, stimulations, and clinical settings [8].

Project Taking Charge (PTC) uses a patient/family center, inter-professional team-based approach to change lifestyle and health practices that will improve health status. Medical, nursing, pharmacy, and public health students work together in collaborative health teams. There are two PTC objectives:

- Provide health professional students the opportunity to improve the health of diverse and at-risk populations in community settings.
- Encourage underserved community members toward self-management (taking charge) of their health.

Method

The three-year project used the KAP-O health promotion strategy -- by increasing Knowledge that leads to positive changes in Attitudes (beliefs) that result in desirable Practice (behavioral) changes and to improve Outcomes (health and wellbeing) [9,10]. The students provided regular health screening and health education to individuals and families; taught exercise and cooking classes; and personalized attention to individuals and families to help bring about changes in knowledge, attitudes/beliefs, and health behaviors to improve health and wellbeing. Each household was assigned an interprofessional student team. The faculty provided mentorship, supervision, and back-up support to the student teams.

PTC encouraged individuals and families in the self-management (taking charge) of their health. The individuals and families who participated in the project learned to identify, prevent and reduce health risks that may lead to chronic conditions such as cardiovascular diseases, stroke, and diabetes by:

- Using test and screening results to help participants assess changes in modifiable health risk factors such as blood pressure, blood glucose, obesity, lack of exercise, eating unhealthy foods and stress.
- Increasing health literacy related to disease prevention and maintaining wellness.
- Providing opportunities for participants to receive feedback on how they are doing in improving their health and to discuss their health concerns.

The Project collaborated with diverse and underserved communities in Tucson, Arizona. The project leadership team (faculty and students) contacted potential community site partners and visited the site to make sure that it would be a good fit, and there was community support for the project. The PTC leadership worked closely with the site. The community partners provided logistical support to PTC as well as encouraged their membership to participate. There were three project sites.

1. The Tucson Parks and Recreation Fred Archer Neighborhood Center, which primarily serves Hispanic community members, was the first-year site. The PTC 1.0 sessions occurred at bi-monthly on Saturdays for seven and half months. Students and faculty members included medicine, pharmacy, and public health. After the project began, nursing students and faculty participated in a couple of PTC health promotion sessions.
2. Sharon Seventh-day Adventist Church, whose members are mostly African Americans, had an existing health promotion program. The PTC 2.0 sessions occurred once a month on Sunday for seven months. Medical, pharmacy, and public health students and faculty participated in the second year.
3. The Templo La Uncion serves primarily the Hispanic community was the third-year site. The PTC 3.0 sessions occurred on five Saturdays during a three-month period. The medical, nursing, pharmacy, and public health students had the opportunity to work with a bilingual immigrant population.

PTC was a student-initiate project. The project student leadership determined the activities perform by each health discipline and assigns the student interprofessional team members. The student estimated time commitment was about 40-50 hours during the semester that included pre-preparation session time, the PTC site health promotional sessions, pre-set up and post-take down session time, student-faculty meetings, and health discipline/interprofessional team assignments.

The students gained practical experience working as collaborative teams. Table 1 summarizes the PTC 3.0 team activities. Each health discipline team developed and presented a health education session (e.g., nursing students – healthy food and balance/portion size and public health students – oral hygiene – as well as conducted health screening/assessments).

There were four project themes: working as a healthcare team, establishing a positive team culture, improving health outcomes, and developing healthcare leaders.

1. **Working as a Healthcare Team:** The project provides health professional students the opportunities to develop their interprofessional skills and gain practical experience working as collaborative health teams. Through this experience, the students are better equipped to engage in future interprofessional health team opportunities and more likely to embrace interprofessional care in practice.
2. **Establishing a Positive Team Culture:** Students develop mutual respect and trust from interacting with each other and gain invaluable knowledge about team-based, patient-centered care. They also gain a better understanding of the strengths of each profession, clarifying misconceptions and understanding how each provider can contribute to improving patient's health. The positive effects of their collaboration, increased communication and inter-professionalism on patient health can be seen in the development and implementation of team-based action plans.
3. **Improving Health Outcomes:** PTC focuses on achieving improved health and wellbeing outcomes for participants, improving health of communities, and decreasing overall health care costs using primary and secondary prevention strategies. The improvement of families' health status leads to healthier communities. Health improvement reduces the need for medical services (e.g., doctor office visits, emergency services, and hospital admissions) that result in decreasing overall health care cost.
4. **Developing Healthcare Leaders:** PTC fosters the creation of team leaders by establishing a collaborative professional environment that encourages health profession students to practice increased communication and share team decision making. Depending on the situation and participant, the health profession student who takes on the leadership role may change based on who has the needed attributes and expertise to lead.

Table 1: PTC 3.0 Health Screenings, Assessments, and Presentations Summary.

	Session 1	Session 2	Session 3	Session 4	Session 5
10:00 AM					
Medicine	Medical History	Physical Assessment Hypertension	Breathing Assessment	Hypertension	Depression/Mental Health screening- MIND Clinic
Nursing	Hypertension Depression Screening	GERD Screening	Hypertension	Diabetes (Fasting and A1C)	Hypertension
Pharmacy	Diabetes (A1C) Cholesterol Medication Adherence	Diabetes (Fasting only) Cholesterol (Pt 1st visit)	Diabetes (Fasting only) Medication Adherence	Cholesterol (Pt 1st visit)	Diabetes (A1C) Cholesterol Medication Adherence
Public Health	Ht/Wt Pt's Quotes Stroke Awareness Cardiovascular Risk Disease IQ	Ht/Wt Ca/Vit D screening and nutrient assessment	Ht/Wt Pt's Quotes	Ht/Wt Osteoporosis risk Scoring calculates Pt's Quotes	Ht/Wt Pt's Quotes
11:30am – Exercise Activities	Team 1	Team 2	Team 3	Team 4	Team 5
12:00 pm – Education (Word for the Day)	Healthy Food balance/ portion size (Nursing)	Oral Hygiene (Public Health)	Asthma/COPD (Medicine)	Rheumatoid Arthritis (Pharmacy)	Depression /Mental Health
12:30pm – Nutrition Demonstration	Team 1	Team 2	Team 3	Team 4	Team 5

Teams work closely with the participating individuals and families to develop action plans to improve health and wellbeing outcomes.

All participants completed and signed the *University of Arizona Consent to Participate in Research* forms. Participant confidentiality was emphasized throughout the project (e.g., participants were assigned ID numbers and these ID numbers were used on the PTC forms). The participation forms, health assessments, and presentations were provided/translated in the PTC participant preferred language (e.g., Spanish), as needed. All data collection forms were reviewed and approved by the University of Arizona Human Subjects Review Committee.

Results

There were 115 students and 27 faculty members who participated in PTC during the three years. The number in student participation had significantly increased in Year 3 as compared to Years 1 and 2 (See Table 2 for details).

Eighty-six adults (age of 18 years and older) participated in the three-year project. 31 adults participated at the Fred Archer Neighborhood Center. Ages ranged from 18 to 79 years, with average age for females (n = 18) at 56.4 years, and average age for males (n = 13) was 56.2 years. There were 40 adults participated at the Sharon Seventh-day Adventist Church. Ages ranged from 21

to 81 years with average age of females (n = 28) at 54.9 years and average age for males (n = 12) was 52.4 years. Fifteen adults (ages 31-60 years) participated at the Templo de Uncion. There were 13 females (average age of 47.9 years) and 2 males (average age of 45.0 years).

Table 3 compares the five-adult health-screening baselines for Fred Archer Neighborhood Center, Sharon Seventh-day Adventist Church, and Templo La Uncion.

Table 3: Project Taking Charge Adult Health Screenings Baseline Summary.

Health Screening	Fred Archer	Sharon Church	Templo de Uncion
Weight (pounds)	179.7	183.9	171.1
Blood Glucose (mg/dl)	104.3	99.6	99.7
Total Cholesterol (mg/dl)	172.3	183.4	193.6
Blood Pressure Diastolic	78.8	82.9	80.7
Blood Pressure Systolic	124.7	127.4	120.8
Female and Male Average Age	F 56.4 / M 56.2	F 54.9 / M 52.4	F 47.9 / M 45.0

The project participant activities (health screenings, health education instructions, and hands on activities, exercise demonstrations, and diet and nutrition presentations) are described below in Table 4.

Table 2: Project Taking Charge Student and Faculty Participation Summary.

Health Profession	Yr. 1 S	Yr. 1 F	Yr. 2 S	Yr. 2 F	Yr. 3 S	Yr. 3 F	Total S	Total F
Medicine	7	5	7	1	23	4	37	10
Nursing	0	0	0	0	12	3	12	3
Pharmacy	15	3	18	3	17	3	50	9
Public Health	5	2	3	2	8	1	16	5
Total	27	10	28	6	60	11	115	27

S = Students F = Faculty

Table 4: Project Taking Charge Activities.

Activity	Examples
Health Screenings	Weight, height, blood pressure, blood glucose, cholesterol levels
Health Education Instructions	Stroke symptoms; sun safety and skin cancer; nutrition and healthy balanced meals; germ awareness and proper hand washing; oral hygiene; smoking cessation; safe use of medicines
Hands-on activities	Make your own hand sanitizer, toothpaste, lip balm, and simple science experiments
Exercise	Trail walking, chair yoga, chair aerobics, salsa dancing, Tai Chi, weight training, exercise bands, Chi Gong and stretching
Diet and Nutrition presentations	Black bean spaghetti squash, pico de gallo, Greek yogurt ranch dip, quinoa avocado dip, Mediterranean salad, healthy chocolate chip cookies, angel cake, oatmeal recipes, vegan chili, roast carrot hummus, and Asian tofu lettuce wrap

Those participants who attended more than one health promotional session improved their self-management of health and saw health outcome improvements - reduction in 3 out of 5 health risk factors (Table 5).

Table 5: Project Taking Charge 1.0 and 2.0 Adult Health Screenings Summary.

Health Screening	Baseline Avg.	Follow-up Avg.	Amt. Chg.
Weight (pounds)	179.87	178.24	-1.63
Blood Glucose (mg/dl)	103.83	105.33	+1.50
Total Cholesterol (mg/dl)	183.25	169.56	-13.69
Blood Pressure Diastolic	80.40	81.54	+1.14
Blood Pressure Systolic	127.50	126.44	-1.06

Discussion

The students gained practical experience by working on different activities. The project fostered collaboration, inter-professionalism, trust, improved communication and mutual respect; this will lead to embracing patient-centered care and improving health outcomes and patient satisfaction.

PTC engaged individuals and families in the self-management (taking charge) of their health through screenings, education, instruction, exercise and physical activities. Participants appreciated the personalized attention and were able to track their health outcomes over a period of several months. Participants who attended more than one health promotional session decreased their risk factors as indicated by the screening results.

There were many challenges in providing a new meaningful interprofessional community health education experience. Every year, there was a new community site, and new students and faculty. Each site had its own unique characteristics and challenges (e.g., community member participation rates and participants' interest levels in improving their health status). The student participation rates varied by health discipline. In the beginning, it took time for student and faculty learn to work together in collaborative teams and to develop a relationship with community members. It required flexibility and adjustments.

Conclusion

The two project objectives had been successfully accomplished. The COVID-19 pandemic uncovered the dire need to access to health services by minority, underserved, at-risk populations whom PTC serves. Both the students and community members benefitted from the project. Additionally, the community partners were pleased to have been selected to be a part of the project and they encouraged their membership to participate.

Overall, the project had provided both students and faculty with invaluable experience. It showed students from different health profession disciplines that working together can affect positive changes in health behaviors among community members and health outcomes. It was critical that faculty from different disciplines worked together to provide the framework and foundation for a successful student interprofessional experience.

Acknowledgement

The authors would like to thank the students and faculty members from the Colleges of Medicine, Nursing, Pharmacy, and Public Health, Fred Archer Neighborhood Center, Sharon Seventh-day Adventist Church, Templo La Uncion, and community members participation in providing this interprofessional community health education experience.

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