International Journal of Health Sciences Education
Manuscript 1124

Development and Evaluation of an Interprofessional Education Course on Integrated Health Care for Nutrition, Public Health, School Counseling, and Social Work Graduate Students

Nadine Bean

Patricia Davidson

Cheryl Neale-McFall

Introduction

Interprofessional education (IPE) is essential for enhancing students' critical thinking skills and ability to integrate other professionals' knowledge to ensure mutual respect and shared values for patient-centered care (Addy et al., 2015; Funderburk, & Shepardson, 2017; Glueck, 2015; Hall, et al., 2015; McGough et al., 2016; Stanhope, 2018; Sullivan, 2018). The authors share techniques and exercises in developing, teaching, and evaluating a graduate IPE course at a mid-Atlantic, public university for students in social work, school counseling, public health, nutrition, and nursing that emphasizes social justice (including food security and access to care issues) and public policy implications. The authors also share findings from the course pre- and posttest data analysis and themes from the end of course, open-ended questions for six offerings of the course over the period, 2018 to 2021.

Background

There has been a paradigm shift in health sciences education toward IPE over the last several years. Since 2015, nearly all health sciences disciplines' accreditation standards include the requirement of IPE experiences in the classroom and/or field (Council on Social Work Education, 2015; Council for Accreditation of Counseling and Related Educational Programs, 2016; Accreditation Council for Education in Nutrition and Dietetics, 2017). The World Health Organization (WHO, 2010) and the World Health Professions Alliance (2019) call for IPE to lay the groundwork for interprofessional collaborative practice (IPCP or IPP). IPCP in turn can lead to increased access to care, more equitable care, and improved health outcomes, particularly for medically underserved populations. Interprofessional collaborative practice is defined as, "When multiple health workers from different professional backgrounds work together with patients, families, [careers], and communities to deliver the highest quality of care." (WHO, 2010). Integrated care has numerous definitions across health sciences. The most common definition is the integration of primary care and behavioral health services (Stanhope, 2018). It is more broadly defined as, "beyond the borders of the health and social care systems to think more strategically about how to embrace the social determinants of ill-health through bringing together the wider range of community assets to promote public health, prevent ill-health, and secure wellbeing to populations" (Goodwin, et al., 2017, p. 5).

The case for increasing access to integrated care, which falls under the umbrella of interprofessional collaborative practice (Getch & Lute, 2019) to improve health outcomes, particularly in medically underserved populations, is compelling (Foronda, et al., 2016; Funderburk, & Shepardson, 2017; National Alliance on Mental Illness, 2017; Stanhope, 2018; Sullivan, 2018). Interprofessional education is the means to increase workforce capacity to provide evidence-based, integrated care (Glueck, 2015; Hall, et al., 2015; McGough et al., 2016 ; Possemato et al., 2018).

The events of the past year and a half with the global pandemic and the concomitant revealing of existing racism and structural oppression in the health care system illustrate the need to shift to interprofessional education and integrated care.

In 2017, the University's Master of Social Work (MSW) and Master of Education (MEd), School Counseling Programs were awarded a $1.66 million, four-year (2017-2021) Health Resources and Services Administration (HRSA) Behavioral Health Workforce and Education Training (BHWET) grant. In 2018, the Programs were awarded a supplemental BHWET grant of $300,000 to address the opioid use disorder crisis. The overall goal of the project was to expand the number of social work and school counseling professionals of diverse backgrounds working with people across the lifespan in vulnerable and medically underserved populations (MUPs) to provide evidence-based behavioral health services in southeastern Pennsylvania, southern New Jersey, and northern Delaware. This grant provided select students in their final year of field work in an integrated care setting a $10,000 stipend to further their studies and develop a career trajectory involving medically underserved communities. The field sites included clinics, hospitals, outpatient and inpatient treatment programs, services to children and families, services to older adults, and Title I schools.

The existing capacity to meet the behavioral health services needs of the region has been inadequate due to low numbers of graduate students in these disciplines being educated in interprofessional collaboration, more specifically integrated care. Therefore, the region has and will continue to benefit from the funds by providing resources to attract high quality, culturally diverse, and/or bilingual students into the programs and thus increase the quality and access of services provided to underserved populations and communities.
If selected as a stipend recipient, MSW and MEd students signed commitment letters to continue to provide behavioral health services to MUPs after graduation, thereby increasing workforce capacity in the region. The stipend-students also agreed to complete four, two-hour interprofessional education trainings. They are required to take this graduate, three credit-hour IPE course.

Methods

The present evaluative study utilized a pretest-posttest design based on learning objectives for the course. Course learning objectives were developed using the Interprofessional Education Collaborative (IPEC) Core Competencies for Interprofessional Collaborative Practice: 2016 Update (IPEC, 2016). The pretest was administered on the first morning of the class, before the first lecture began. The posttest was administered on the last day of the course, right after the last lecture concluded. There were also post course, open-ended questions to which students could respond.

The University's IRB approved the research protocol for the course and informed consent was obtained. The course was required for all students who received a stipend through the HRSA grant but was also open (space permitting) to graduate students in nursing, nutrition, and public health. Students were recruited from these disciplines.

Course Design and Components

The authors and professors for this course began developing it in 2016 utilizing a social justice framework with particular emphasis on the social determinants of health. The U.S Department of Health and Human Services, Office of Disease Prevention and Health Promotion in their *Healthy People 2030* guidelines released in 2021, define the social determinants of health (SDOH) as

"…the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (https://health.gov/healthypeople/objectives-and-data/social-determinants-health. Social justice is at the heart of recognizing the impact of the social determinants of health and has numerous definitions. The National Association of Social Workers (NASW) has defined social justice as "the view that everyone deserves equal economic, political and social rights, and opportunities" (2019).

The professors for the course each had nearly 30 years of clinical experience, one in community nutrition and one in social work and had seen, in their practices, research, and teaching the lack of interprofessional collaboration. Both also understood the inextricable link between food security issues and mental and physical health (Leung, et al., 2020; Leung, et al., 2015; Nagata, et al., 2019).

Food security is defined as, a person or household that has access to adequate and safe nutritious food to meet dietary needs for a healthy lifestyle. It is important to note that access encompasses physical, social, and economic means for obtaining healthy foods. In contrast food insecurity focuses more on the lack of economic means or other resources for accessing adequate amounts of food for the household and meeting a healthy lifestyle. Food insecurity can be chronic or ongoing, transitory, temporary situational, and/or seasonal. These definitions are based on the U.S. Department of Agriculture's definitions of food security (2019).

Thus, a partnership was formed to develop and teach the graduate course for students in social work, school counseling, public health, nutrition, and nursing. The course is continuously evolving and modified in response to trends and needs in health care and health policy. The course aims to address the current and future health care landscape and needs of populations from practice to policy.

The class is taught from a scaffolded case analysis approach, which has been used in medicine, nutrition sciences, and social work (Monk & Newton, 2018). These are composite cases based on the two professors' real-life, past cases. Three case studies are analyzed within the classroom in small, interprofessional groups. The groups are given the cases one segment at a time, in a "need to know" manner which fosters critical thinking, research skills, and applied analysis simulating the team approach in health care settings. An example of one of the cases is in Appendix 1. This case illustrates how the professors incorporated real-time social justice issues such as the COVID-19 pandemic, poverty, food security, racial and ethnic discrimination and oppression, immigrant and refugee issues, intimate partner violence, and the impact of trauma on child and family development.

There is a mid-term case analysis that is an individual assignment. Students are also required to complete an online training for health and behavioral health professionals on Screening, Brief Intervention, and Referral to Treatment or SBIRT (https://healtheknowledge.org/course/view.php?id=235), which is offered through healtheknowledge.org.

The final assignment is a group project to propose a new integrated health care/interprofessional collaborative care program that incorporates primary care services, nutrition services, and integrated behavioral health services. The group proposal must utilize a social determinants of health/social justice framework, as emphasized in the course description, learning objectives, and course lecture, discussion, and exercises and incorporate real time issues in the target population. This framework is outlined in the course description and reinforced in the learning objectives. From the course description: "This course is an interprofessional, graduate level elective for students in health and behavioral health sciences on the latest in integrated health care or interprofessional collaborative care (IPC) approaches to working with individuals, families, and communities around issues of behavior, food security, health, and recovery. Also addressed will be the interplay of health care needs, culture, values, and barriers to access – special attention will be paid to the COVID-19 pandemic and how this disproportionately affects people of color and those living in poverty and their access to care." One of the key learning objectives is: "Engage in practices that advance social and economic justice for individuals and families in IPC." The groups must propose not only the scope of services, but how they will evaluate the program, and possible funding sources (public or private foundations). Also, the students must do a community needs assessment for the program. Many utilize Global Information Systems (GIS) and similar approaches in their assessment of a community's/population's needs – overlying maps of socioeconomic status, ethnicity, and location of health care facilities. They must identify the target medically underserved populations and communities that their proposed program will address.

In summer 2020, due to the COVID-19 pandemic, the course needed to shift to a virtual format. The professors and guest speakers incorporated social justice issues laid bare and exacerbated by the pandemic – access to care, disproportionality of cases in black and brown people, an increase in food insecurity, and increase in mental health challenges (Substance Abuse and Mental Health Services Administration, 2020). The course learning objectives are based on the Interprofessional Education Collaborative (IPEC) Core Competencies for Interprofessional Collaborative Practice (2016) and incorporate a social and economic justice framework.
The learning objectives, in turn, served as the basis for the pre- and posttest questions developed for the course. The response choices utilized a Likert scale from 1 "strongly disagree" to 5 "strongly agree". The following are the questions on the pre and post-tests for the course:

Pre/Post Test Questionnaire

1. I know how to integrate interprofessional sources of knowledge in patient-centered problem solving.
2. I understand the ethical principles that guide interprofessional collaborative practice (also known as integrated care).
3. I know how to manage ethical dilemmas in interprofessional settings.
4. I understand how culture and beliefs are interwoven in a person's health and recovery.
5. I feel confident in engaging in practices that advance social and economic justice for individuals and families in interprofessional settings.

6. I understand the importance of shared accountability with professionals, patients, and communities for improved health outcomes.
7. I am able to assess both strengths and limitations of individuals and families who are seeking assistance in integrated care settings.
8. I understand how to utilize an interprofessional collaborative framework for assessment and planning that prioritizes recovery.
9. I am able to collaborate with interprofessional team members to monitor risk and protective factors for an individual or family.
10. I am able to effectively communicate information with team members that is understandable, avoiding discipline-specific jargon.
11. I understand the roles and responsibilities of various interprofessional team members.

The pre/post-test data were analyzed using Pearson Chi-Square for two-tailed significance differences from pre to post-test answers. There is also a post-course survey with open-ended questions for students. The answers to those questions were analyzed for common themes. The course has been taught a total of six times since the HRSA grant began, though it was piloted in summer 2016 and 2017.

The total number of students who have taken the course since summer 2018 (the beginning of the HRSA BHWET grant) is 119. The vast majority of the students were from the MEd or MSW Programs with stipend support. There were only three nutrition students and one public health student who have taken the course for credit, though some students from these disciplines have sat in on the course and participated in the case analyses to ensure an interprofessional collaboration. The stipulations of the university's HRSA BHWET grant proposal in 2017 were that of the students awarded stipends, at least 30% would be students of color and/or from medically underserved populations. Over the four years, approximately 45% of stipend recipients were students of color and/or from MUPs, far exceeding the original goal. Of the 119 students, 11 self-identified as male, and one responded "not applicable" to gender identity. The rest identified as female.

Results

Quantitative Data Findings

Pre/posttest data was collected based on course learning objectives, as listed above, and Chi Square analyses were computed. Data shows that there were significant differences (*$p<.05$) between pre and post scores on all questions, except for questions 4 and 6 in the Summer 2019 offering (.064 each), and questions 4, 5, and 6 (.051, 052, and .132, respectively) in the Summer 2020 offering. These exceptions closely approach .05 confidence levels, except for question 6 in Summer 2020. The slight decline in significance level in response to Question 6, "I understand the importance of shared accountability with professionals, patients, and communities for improved health outcomes", may reflect the fact that the MSW Program curriculum is

consciously shifting toward including interprofessional education and content on interprofessional collaborative practice per accreditation standards. Table 1 shows the p-values for all questions and all offerings of the course.

Table 1: Pearson Chi-Square Values and Significance (2-sided) for IPE Course Pre/Post Questions

Summer 2018(N=13)	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q10**	**Q11**
Value	23.00	10.11	8.95	9.58	7.56	5.85	9.91	15.82	13.97	10.67	12.92
Significance	.000*	.018*	.030*	.002*	.023*	.016*	.007*	.003*	.003*	.005*	.005*
Winter 2019(N=21)											
Value	32.57	24.07	17.16	14.57	17.51	19.36	21.35	35.46	28.04	19.41	25.34
Significance	.000*	.000*	.002*	.006*	.001*	.000*	.000*	.000*	.000*	.000*	.000*
Summer 2019(N=18)											
Value	32.33	15.42	11.29	5.49	14.60	7.27	15.60	21.67	10.07	8.20	15.73
Significance	.000*	.004*	.023*	.064	.002*	.064	.002*	.000*	.039*	.017*	.003*
Winter 2020(N=21)											
Value	30.27	22.00	17.36	12.95	13.82	19.31	23.56	20.57	22.90	16.13	21.71
Significance	.000*	.000*	.002*	.002*	.008*	.000*	.000*	.000*	.000*	.003*	.000*
Summer 2020(N=15)											
Value	20.53	9.65	17.05	3.77	5.97	4.05	11.76	16.12	14.16	11.05	13.28
Significance	.000*	.022*	.000*	.052	.051	.132	.003*	.000*	.001*	.004*	.001*
Winter 2021(N=18)											
Value	19.19	12.69	16.60	19.13	22.50	21.09	22.15	21.07	15.79	14.40	18.59
Significance	.000*	.002*	.000*	.0008	.000*	.000*	.000*	.000*	.000*	.001*	.000*

Qualitative Data Findings

After completion of the course, seven open-ended questions were administered to the students to gain additional feedback about the course.

1. What did you know about interprofessional (education or work setting) before taking the course?
2. What would you say are the most important things you learned from the course (knowledge, values, skills, cognition, or ways of thinking)?
3. Is there additional content that you would like to have seen in the course?
4. What would you change about the course? (methods of delivery, guest speakers, field visits, assignments)
5. What are your career aspirations?
6. Do you think that this course will be valuable in your career? Why or why not?

7. Are there any other, closing thoughts you have about the course, interprofessional education, and/or integrated health services?

Answers to these questions were analyzed for common themes. The following themes were found across offerings of the course:

1. Most students had no or very little knowledge on interprofessional education or interprofessional collaborative practice/integrated care before taking the course.
2. The most important things students learned from the course were three-fold:
    a. the impact of nutrition on mental health
    b. the importance of interprofessional collaboration
    c. learning about various assessment tools
    d. disparities in health care access and how to address these
3. Additional content the students requested were more interactive activities (in addition to the scaffolded case analyses), more concrete examples of ethical challenges, more detailed direction on using the screening tools, and role plays.
4. The students were also asked what they would change about the course. The most common answers included more guest speakers from other disciplines, more students from other professions, and more time for assignments.
5. Students were also asked about their career aspirations and gave varying responses with most students wanting to be licensed clinical social workers, licensed professional counselors, and certified school counselors working with medically underserved populations.
6. When asked if the students believed this course to be valuable to their career, *all* students across the six offerings of the course responded "yes". Some examples of responses to this question follow. "All students should be required to take this course." "Loved learning from other professionals." "Will use this knowledge in my practice." "Can't imagine not practicing in an integrated care setting."
7. Finally, students were asked to provide any additional thoughts. Most students stated that they believe this class should be incorporated in the school counseling and social work curricula – that all students should be required to take it.

Discussion

As demonstrated through the findings, the course has been well received by students and will continue after the 2017 HRSA BHWET grant funding is completed in summer 2021. Faculty from the MSW, MEd in School Counseling, and Psychology Doctorate (PsyD) Programs at the university have collaborated and recently been awarded a new, four-year HRSA BHWET grant, and the course will remain a requirement for stipend recipients. To date, approximately 130 students have taken the course (including the pilot offerings in summer 2016 and 2017). Students have reported an appreciation for learning from and with others from various professions in real time. The students also, up until summer 2020, visited premier integrated care programs in the area – two federally, qualified health centers (FQHC) and saw, firsthand, how what they were learning in the classroom was being applied in real time. Students embraced these visits, many commenting that they were the highlight of the course. Those visits moved to virtual visits in summer 2020 due to the pandemic.

Strengths

The students made significant gains in knowledge from pre- to post-test as indicated above. The MSW and MEd, School Counseling Programs have made curricular changes (per their latest accreditation standards) to include more interprofessional education on interprofessional collaboration/integrated health care.

The course co-professors have made a concerted effort to respond to issues brought up in the student answers to the qualitative questions. Thus, in earlier offerings of the course, students mentioned wanting more professionals from other disciplines as guest speakers and more were brought in. The co-professors have invited registered nutritionists/dietitians, nutrition students, Doctor of Nursing Practice (DNP) students, medical students, and public health professionals to be guest speakers and to participate in the small, interprofessional groups of students when doing the scaffolded case analyses.

The students also mentioned early on that they wanted more time for their assignments. When the course was taught face to face in a one-week intensive format (the first four offerings of the course), some students complained that the one-week format was too rushed. With the onset of the pandemic, the course format had to change to all virtual (with mixed synchronous learning via Zoom and asynchronous learning exercises) and was changed to a two-week format.

Limitations

The recruiting of students from disciplines outside social work and school counseling has been challenging. One barrier has been the intensive, one week, face to face format. The graduate programs in public health, nutrition, and nursing are all taught in a 100% online format. Thus, students from these other disciplines were not willing to take on the added expense and time for a one-week, face to face course. When the format was changed to all virtual due to the pandemic, students from these other disciplines took notice. Two graduate nutrition students enrolled in the winter 2021 offering.

Comparison of Present Study's Findings to Other Studies on IPE in Integrated Health Care

Findings from studies similar to the present study have been reported regarding the benefits of utilizing case-based learning and/or clinical simulation to enhance interprofessional collaboration (Costello, et al., 2017; Eliot, L'Horset, Gibson, & Petrosky, 2021, Monk & Newton, 2018). This study demonstrated that IPE is an effective method for enhancing Core Competencies for Interprofessional Collaborative Practice (IPEC, 2016) as other studies have found (Eliot, L'Horset, Gibson, & Petrosky, 2021, Costello, et al., 2017, de Saxe Zerden, Lombardi, Fraser, Jones, & Garcia Rico, 2018).

Conclusions

The course has evolved with emerging health care and public policy issues such as the COVID-19 pandemic and concomitant recognition of the social injustices and oppression that exist in care systems. Interprofessional education is now codified in accreditation standards of almost all health and behavioral health disciplines. Integrated care/interprofessional collaborative practice

is the wave of the future. The authors are willing to collaborate with others in helping to develop similar courses.

References

Addy, C. L., Browne, T., Blake, E. W., & Bailey, J. (2015). Enhancing interprofessional education: Integrating public health and social work perspectives. *American Journal of Public Health, 105*, S106-S108.

Accreditation Council for Education in Nutrition and Dietetics. (2017). *Accreditation Standards*. https://www.eatrightpro.org/acend/accreditation-standards-fees-and-policies/acend-policy-and-procedures

Costello, M., Huddleston, J., Atinaja-Faller, J., Prelack, K., Wood, A., Barden, J., & Adly, S. (2017). Simulation as an effective strategy for interprofessional education. *Clinical Simulation in Nursing, 13*(12), 624-627. http://dx.doi.org/10.2016/j.ecns.2017.07.008

Council on Social Work Education. (2015). *Educational Policies and Standards*. https://www.cswe.org/getattachment/Accreditation/Accreditation-Process/2015EPAS_Web_FINAL-(1).pdf.aspx

Council for Accreditation of Counseling and Related Educational Programs. (2016). https://www.cacrep.org/

de Saxe Zerden, L., Lombardi, B.M., Fraser, M.W., Jones, A., Garcia Rico, Y. (2018). Social work: Integral to interprofessional education and integrated practice. *Journal of Interprofessional Education & Practice, 10*, 67-75. https://doi.org/10.1016/j.xjep.2017.12.011

Foronda, C., MacWilliams, B., & McArthurs, E., (2016). Interprofessional communication in healthcare: An integrative review. *Nurse Education in Practice, 19*, 36-40.

Funderburk, J. S., & Shepardson, R. L. (2017). Real-world program evaluation of integrated behavioral health care: Improving scientific rigor. *Families, Systems & Health: The Journal of Collaborative Family HealthCare, 35*(2), 114–124.

Getch, S.E., & Lute, R. M. (2019). Advancing integrated healthcare: A step by step guide for primary care physicians and behavioral health clinicians. Missouri Medicine, 116(5): 384-388.

Glueck, B. (2015). Roles, attitudes, and training needs of behavioral health clinicians in integrated primary care. *Journal of Mental Health Counseling, 37*(2), 175-188. doi:10.17744/mehc.37.2.p84818638n0744

Goodwin, N., Stein, V., & Amelung, V. (2017). What is integrated care? In *Handbook Integrated Care.* V. Amelung, V. Stein, N. Goodwin, R. Balicer, E. Nolte, & E. Suter, (Eds.), *Handbook Integrated Care*, (pp. 3-23.) Cham, Switzerland: Springer International Publishing AG. ISBN: 978-3-319-56103-5.

Hall, J., Chapman, M.V., Lee, K.M., Merino, Y.M., Thomas, T.W., Payne, B.K., Eng, E., Day, S.H., & Coyne-Beasley, T. (2015). Preparing the workforce for behavioral health and primary care integration. *Journal of American Board of Family Medicine, 28*, S41-S51. doi: 10.3122/jabfm.2015.S1.150054.

Interprofessional Education Collaborative. (2016). *Core competencies for interprofessional collaborative practice: 2016 update*. https://ipec.memberclicks.net/assets/2016-Update.pdf

Leung, C.W., Kullgren, J.T., Malani, P.N., Singer, D.C., Kirch, M., Solway, E., & Wolfson, J.A. (2020). Food insecurity is associated with multiple chronic conditions and physical health status among older U.S. adults. *Preventive Medicine Reports, 20. https://doi.org/10.1016/j.pmedr.2020.101211*.

Leung, C.W., Epel, E.S., Willett, W.C., Brim, E.B., & Laraia, B.A., (2015).Household food insecurity is positively associated with depression among low-income supplemental nutrition assistance program participants. *Journal of Nutrition, 145*: 622e7. doi:10.3945/jn.114.199414

McGough, P.M., Bauer, A.M., Collins, L., & Dugdale, D.C. (2016). Integrating behavioral health into primary care. *Population Health Management, 19* (2), 81-87. DOI: 10.1089/pop.2015.0039

Monk, J.M., & Newton, G. (2018). Use of a scaffolded case study assignment to enhance students' scientific literacy skills in undergraduate nutritional science education: Comparison between traditional lecture and distance education formats. *International Journal of Higher Education, 7*(2), 96-106.

Nagata., J.M., Palar., K., Gooding, H.C., Garber, A.K. Whittle, H.J., Bibbins-Domingo, K., & Weiser, S.D. (2019). Food insecurity is associated with poorer mental health and sleep outcomes in young adults. *Journal of Adolescent Health. 65*(6), 805-811. https://doi.org/10.1016/j.jadohealth.2019.08.010

National Alliance on Mental Illness. (2017). *Access to treatment*. NAMI: https://www.nami.org/Learn-More/Mental-Health-Public-Policy/Access-to-Treatment

Possemato, K., Johnson, E.M., Beehler, G.P., Shepardson, R.L., King, P., Funderbunk, J.S., Maisto, S.A., & Wray, L.O. (2018). Patient outcomes associated with primary care behavioral health services: A systematic review. *General Hospital Psychiatry, 53*, 1-11.

Substance Abuse and Mental Health Services Administration (2020). *Double jeopardy: COVID-19 and behavioral health disparities for Black and Latino communities in the U.S.* https://www.samhsa.gov/sites/default/files/covid19-behavioral-health-disparities-black-latino-communities.pdf

Stanhope, V. (2018). The need for integrated health care in the United States. In V. Stanhope & S.L.A. Straussner, (Eds.), *Social work and integrated health care: From policy to practice and back, (pp. 3-20).* Oxford University Press.

Sullivan, W.P. (2018). Integrated health care models and frameworks. In V. Stanhope & S.L.A. Straussner, (Eds.), *Social work and integrated health care: From policy to practice and back, (pp. 21-32).* Oxford University Press.

US Department of Agriculture. (2019). *Definitions of food security.* https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security-aspx.

World Health Organization. (2010). *World health statistics.* WHO Publications.

World Health Professions Alliance. (2019). *Statement on interprofessional collaborative practice*. https://www.whpa.org/news-resources/statements/whpa-statement-interprofessional-collaborative-practice.

Appendix 1

SWG/NTD 592: Advanced Clinical Practice in Integrated Health Care
The Case of TC
Segment 1

Height: 64", Weight: 248 lbs., BMI: 43, Blood Pressure: 147/100 mm/hg

Key labs: TC – 207 mg/dl, TG – 250 mg/dl, HDL – 34 mg/dl, LDL – 159 mg/dl, FBS – 150 mg/dl

Tara C., age 25, comes to the appointment at Community Volunteers in Medicine in West Chester, Pennsylvania with two of her children and the others need to be picked up by 3pm. She took three buses to get to the appointment. It is 1pm now. She is here because her "doctora" told her to come see the two of you - a behavioral health consultant who is bi-lingual (Spanish and English) and a registered dietician. "I am not sure why I am here; I don't have time." She has a thick Spanish accent. She looks distracted, nervous, and downtrodden. She has a very flat affect. She doesn't make eye contact much. Her eyes dart around nervously, especially toward the door of the examining room. She seems to jump whenever she hears footsteps in the hall.

The nutritionist asks a few questions, as does the behavioral health consultant. She stated that she loves eggs (especially huevos rancheros), fried plantains, fried beans, and high fat meats such as chorizo, bologna, etc. She has eaten this way all her life.

She is recently divorced and has four young, school aged children (the twin boys, age 4, are in publicly subsidized pre-school and two, a girl, age 6, and a boy, age 7 are in elementary school). She works for minimum wage at a fast-food restaurant. Since the divorce she has difficulty finding the time (and money) to go to the grocery store to buy "healthy foods". The grocery store is also two bus rides from her home. She works long hours, has limited time to prepare meals, eats mostly fast food and does a limited amount of exercise. "My kids love McDonalds, and it is within walking distance of the house."

For *each* segment of this case, consider the following:

1. **How can you build relationship with Tara?**
2. **What are the facts you can glean thus far?**
3. **What information do you need to gather? What research do you need to do?**
4. **What are your next steps?**
5. **With whom do you need to collaborate? Are there other professionals you need to bring into consult, collaborate with?**
6. **What may be the larger, public health issues at play?**

Consider:

- **Cultural background**

- **Social determinants of health – SES, food access, medical care access, oppression/discrimination issues, etc. – and how these issues loom especially large during the COVID-19 pandemic for black and brown people.**
- **Assessments you might want to do – please choose from among the assessment tools you studied about in Module 4 (which was asynchronous)**

The Case of TC, Segment 2

TC has a very hard time looking at you, always diverting her gaze. She calls both of you "doctora", yet you each have a master's degree. You try to explain that you are not a doctor, but that you do collaborate with doctors, nurse practitioners, and other health care providers at the clinic.

You are tempted to call in the nurse practitioner who is bilingual and is her primary care provider, but also are aware that too many health care providers in one room may be overwhelming. She has been coming to CVIM for many years for her care and for her children's care. She has been receiving care from the same nurse practitioner for seven years. This nurse practitioner has requested a consult with the two of you and introduces you to Tara through a "warm handoff".

The PCP has also recommended that Tara see an exercise physiologist. Tara was an athlete in middle and high school before she dropped out of high school to marry. She was regularly seen by an athletic trainer during that time. She was a cross-country runner and a basketball player. Even at that young age and despite being an athlete, her blood pressure tended to be higher than normal, and she had high normal non-fasting blood glucose levels. She also suffered a few injuries – shin splints and one stress fracture in her foot. She states that she would like to get back into exercise, but how and when?

The nutritionist has seen Tara once before, at the request of the nurse practitioner and spoken to her about her dietary habits. The nutritionist suspects food security issues and depression. She does explain this to the behavioral health consultant before Tara enters the room. The behavioral health consultant speaks to Tara in Spanish and does some translating between the nutritionist and her. The behavioral health consultant asks, "Why do you think you might be here?"

Tara immediately begins crying and saying she is frightened. She also seems to be sweating quite profusely. The twins begin whimpering and patting their mom on the back. They look very mistrustful of the two of you, even though you have some coloring books and crayons and a few other toys to offer them to play with. They won't play. They do love their mom.

Tara came to the US, specifically Chester County, Pennsylvania as a 5-year-old child. Her parents were un-documented Mexican immigrants and worked in the mushroom farms of southern Chester County. She was the youngest of four siblings. **Her parents are both struggling with some chronic health issues, *and* both have recently been tested for COVID-19**. They have chronic respiratory issues, anyway, as is the case for many mushroom farm workers. They have been coughing, short of breath, running low grade fevers, and very fatigued. Both have diabetes. Her father has also recently been diagnosed with lung cancer. They live together in a two-bedroom rental – Tara, her four children, her parents, and one sibling, Lupe', age 26. Her other adult siblings live near-by. All of them work in the mushroom farms, except Tara, who works in a fast-food restaurant.

Her ex-husband was also an un-documented immigrant from Honduras. He is Afro Latino. He came to this country as an unaccompanied, 16-year-old. He worked in the mushroom farms. They met when Tara was 16 and he was 19 through mutual friends at St. Rocco's Catholic

Church in Kennett Square. They married when she was 18. She had her first child within a few months. During her final pregnancy, with the twins, she had gestational diabetes. Her husband had a drinking problem and tended toward violent outbursts with Tara when he was drunk. He left the family in fall of 2016. They divorced in March 2017. He was arrested in an ICE raid on the mushroom farms in April 2017. He was deported that summer.

As Tara is clearly distraught and worried about being back to pick up her two children from elementary school, the two of you decide that you should schedule a second appointment with her for the following week, when she is scheduled to come in for some more blood work. You assure her that you will provide transportation via Rover.

The Case of TC, Segment 3

The two of you have a collaborative team meeting with Tara's nurse practitioner, before she comes in for her next appointment. There is much discussion about medical issues, including nutritional status and probable diabetes. Also – the need to get the entire family tested for COVID-19. Included in the interprofessional collaborative care meeting is an exercise physiologist, who volunteers at CVIM, a speech/language pathologist who also volunteers at CVIM and who has been in consultation with the twins' pre-school SLP, because the twins were premature and had issues with their suck/swallow reflexes and with delayed speech. All of Tara's children have speech delays.

Tara comes back for her next appointment without the youngest children, as the appointment was made for the morning when they are in pre-school. The pre-school has opened back up on a limited basis for children of essential workers. She only works part-time and differing shifts. This is a morning that she was not scheduled to work. She has had her blood drawn.

She seems a tad bit more at ease with the two of you, as she is without her children in tow and not worrying about rushing back to pick them up. However, she is still nervous and has a flat affect.
The two of you work on relationship and trust, reassuring her again that you have absolutely no plans to refer her to ICE. Both of you also assure her that you believe she is remarkably strong – a survivor and is trying to do the best she can do with her children.

You begin asking some questions about food traditions, culture, who cooks, who buys groceries - where and when, etc. You also begin asking about health conditions of her parents and her children. All children are behind, developmentally from where they should be for their age. The twins are still small in stature and seem immature. They have been tested throughout their lives and they are cognitively operating at a three-year-old level. The six and seven-year-old children are each one grade level below where they should be. They both struggle with learning to read and with simple math concepts.

Tara does divulge that her husband was verbally and physically abusive, especially when under the influence of alcohol. He suffered a back injury while working in the mushroom farms and "take a lot of pills" (opioids and benzodiazepines, all prescribed legally). He was most prone to violence when she was pregnant.

She said that she knows she tends to eat a lot of comfort foods when she is stressed and did so when her husband was being particularly abusive. She feels horribly guilty that she did call the police a couple of times when things got very bad. She feels that this is the reason her husband was taken into ICE custody and then deported. She says that she eats even more since her husband's deportation.
She begins crying again. "You think I am a bad mother? A bad wife?"

Do answer the same questions as you did for Segments 1 and 2.

In addition, answer the following:
How can you best help Tara to improve her health outcomes in collaboration with the integrated care team?