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# Outcomes of implementing the chronic disease self-management program (CDSMP) in the Kurdish community

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Outcomes of Implementing the Chronic Disease Self-Management Program (CDSMP) in  
the Kurdish Community

Chinor Fattahi

A clinical research project submitted to the Graduate Faculty of

JAMES MADISON UNIVERSITY

In

Partial Fulfillment of the Requirements

for the degree of

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## **Dedication**

This work is dedicated to my parents for all their love and support.

## **Acknowledgments**

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## Abstract

**Background:** The incidence of chronic diseases signifies a need to redesign the U.S. healthcare system to better support minority individuals. This project examined the impact of the chronic disease self-management program (CDSMP) workshop in the Kurdish community. The literature shows many positive outcomes of CDSMP workshops, including improvements in physical health, self-efficacy, depression, communication with providers, as well as reduced emergency department visits and hospitalizations. This results in healthcare cost savings for our local communities and our nation. The literature is limited on managing chronic diseases in the Kurdish population, a growing refugee population in the United States and central Virginia region. Furthermore, after speaking with the CDSMP coordinator and reviewing the literature, the CDSMP workshop has not been implemented or evaluated with a Kurdish population. A Logic Model and the PRECEDE-PROCEED model framework were used to implement the CDSMP workshop in the Kurdish community. During the PRECEDE section of this paper, there was a discussion of the social, environmental, epidemiological, administrative, and policy assessment before implementing the CDSMP workshop in the Kurdish population. During the PROCEED section, there was a discussion of the implementation and evaluation of the CDSMP workshop.

**Methods:** A CDSMP workshop was implemented in the Kurdish dialect to a group of female participants living in a Mid-Atlantic state (N=11). Outcome measures included general health, health distress symptoms, physical activities, self-efficacy, social/role activity limitations, and communication with providers.

**Results:** At 6-weeks post-intervention, there was improvement in all outcome measures with significant improvement in self-reported health and health distress symptoms. At 12-weeks post-baseline data collection, all outcome measures continued to show improvement except for self-efficacy and physical activity that demonstrated a fade out effect.

**Discussions:** CDSMP workshops can be modified and successfully implemented in diverse community settings while still maintaining the key components of the program.

**Keywords:** Chronic Disease Self-Management Program, Chronic Disease, Kurdish, Kurds, Kurd.

## **Introduction and Background**

Chronic diseases are the leading causes of death and disability worldwide (World Health Organization, 2017). The rising prevalence of chronic diseases poses a major threat to health globally, with 60% of deaths worldwide attributed to chronic diseases (World Health Organization, 2017). The rise in chronic diseases has led to an increase in U.S. healthcare costs, with chronic diseases accounting for two-thirds of all health care spending (Centers for Disease Control and Prevention, 2013). Improving some of the leading health indicators of Healthy People 2020, such as nutrition, physical activity, or obesity, can assist in decreasing chronic disease and healthcare costs (Healthy People, 2018).

Vulnerable populations, such as the elderly, ethnic minorities, those who live in rural or remote locations, and those with low literacy levels have a high prevalence of chronic diseases (Paige, Stellefson, & Singh, 2016). It is difficult for these vulnerable populations to manage their symptoms (Paige et al., 2016). The elder ethnic minorities have an even more difficult time managing their chronic diseases. As our older population is living longer, the prevalence of multiple chronic diseases is also increasing with age (Robert Wood Johnson, n.d). Some of the most common, costly, and preventable chronic diseases in the U.S. population include heart disease, stroke, cancer, type 2 diabetes, obesity, and arthritis (Centers for Disease Control and Prevention, 2017). Implementing the CDSMP workshop may help meet the health-related quality of life and well-being objective of Healthy People 2020.

*Disease* for this project is defined as an illness or sickness characterized by specific signs and symptoms (MedicineNet, 2017). *Chronic* is defined as something that

continues over an extended period of time and does not easily or quickly go away (U.S. National Library of Medicine, 2017).

The incidence and projected incidence of chronic diseases signifies a need to redesign the U.S. healthcare system to better support individuals with chronic diseases, especially those of minority groups (Stillwater & Farr, 2013). One way to support these individuals and reduce the increasing healthcare costs related to chronic diseases would be through implementation of low-cost evidence-based prevention efforts, like the chronic disease self-management program (CDSMP). *CDSMP* is defined as an evidence-based workshop with a group of 8 to 12 participants, who have chronic diseases of any type. CDSMP was first initiated at Stanford University, but has now moved to the Self-Management Resource Center. The CDSMP workshops are designed to promote mutual peer-support and help individuals build self-confidence in managing their chronic diseases (Verevkina, Shi, Fuentes-Caceres, & Scanlon, 2014). In addition, the self-management education workshops teach individuals problem-solving skills and give them the tools and empowerment that they need to actively manage their own chronic diseases (Stillwater & Farr, 2013; Paige et al., 2016). Each CDSMP session is approximately 2½ hours, once a week, for 6 consecutive weeks (Stillwater & Farr, 2013). The workshop is usually facilitated by trained lay persons, but trained healthcare professionals may also lead it. The CDSMP workshops address topics including healthy eating, relaxation techniques, sleep, communication, medications, understanding emotions, weight management, using the mind, problem-solving skills, working with health professionals, and creating and modifying an action plan (Stillwater & Farr, 2013). The Stanford University Patient Education Research Center has tested and evaluated self-

management programs for individuals with chronic diseases for the past 20 years (Stillwater & Farr, 2013). There is growing evidence that the CDSMP workshop can help improve unhealthy physical days, depression, self-efficacy, and reduce ER visits and hospitalizations, which results in healthcare cost savings (Ahn et al., 2013; Haslbeck et al., 2015; Ory et al., 2013; Smith et al., 2013).

When refugees come to the U.S., they are generally healthy on entering the United States (Hall & Caellar, 2016). However, social determinants, such as low socioeconomic status, social connectedness, cultural and language barriers, and health care access, can lead to the development of health disparities and contribute to deteriorating health and chronic disease development (Hall & Cuellar, 2016). In addition, among many immigrant groups, there is a positive association between the length of time in the United States and overweight status, which is a precursor for chronic diseases such as diabetes, hypertension, and atherosclerosis (Hall & Cuellar, 2016). For undocumented immigrants or those who have been in the U.S. for less than 5 years, an uncompensated health care visit is higher than for U.S. citizens, and the result is a greater cost to providers for the uncompensated care (Hall & Cuellar, 2016). In addition, immigrants and refugees are often faced with increased medical problems, but they underutilize health care services (Choi, Davis, Cummings, Regenmorte, & Barnett, 2015). There are specific barriers that immigrants and refugees experience that prevents them from using healthcare services (Choi et al., 2015). For example, specific barriers include limited awareness and understanding of services available to them, low literacy due to low levels of educational attainment, language barriers, cultural stigmas associated with mental

illnesses, lack of insurance, and lack of cultural competency and sensitivity by healthcare professionals (Choi et al., 2015).

A high percentage of refugees do not have health insurance, which limits their access to health care (PolicyLab, 2012). Immigrants may be unaware or lack knowledge of the long-term effects of chronic diseases and therefore do not seek treatment until the disease worsens, resulting in increased health care costs (Hall & Cuellar, 2016). Furthermore, social exclusion among immigrants and refugees contributes to the development of many chronic diseases and increases the rates of preventable death. The mid-Atlantic state that the project was conducted in has a large and growing immigrant population, with interpreter request increase in the past decade for Spanish (80%), Russian (10%), and Kurdish (10%) (Social Exclusion, n.d.). The CDSMP workshop can assist participants to engage in social interactions that can help them feel less isolated in their community and improve the self-management of their chronic diseases. By providing health care through preventive services, such as the CDSMP, chronic disease development is stalled and potentially reduces unnecessary health care spending (Hall & Cuellar, 2016). Therefore, it is critical to provide adequate support to minority individuals, especially the Kurdish refugee population, to improve their access to health care and reduce the cost of chronic diseases.

### **Problem Statement**

There is a growing number of Kurdish refugees with chronic diseases. The literature related to chronic diseases in the Kurdish population is very limited. Furthermore, the CDSMP workshop has never been implemented in such a minority population. Since the literature is limited on managing chronic diseases in the Kurdish

population, this population would greatly benefit from a CDSMP workshop.

Implementing the CDSMP workshop is projected to help Kurdish minorities manage their chronic conditions more effectively, subsequently slowing down disease progression and reducing complications (Ory et al., 2013). Ultimately, this will result in reduction of personal health care costs.

### **Purpose and Aims**

The purpose of this study was to plan, implement, and evaluate the CDSMP workshop for a group of non-English speaking Kurdish female individuals and evaluate the health behavioral outcomes it will have on the participants managing their chronic health problems. This project aimed to improve by 10% the participants' self-reported changes in general health, health distress symptoms, physical activities, self-efficacy, social/role activity limitations, and communication with providers after participating in the CDSMP workshop.

### **Review of Literature**

A systematic review of the literature on CDSMP was completed. JMU Library Quick Search, which searched all the databases to which JMU subscribes, and PubMed were searched using the following inclusion criteria: English language, full text articles, peer-reviewed, reviews/randomized control trials/clinical trials type articles, human species, publication dates from 2013 to 2018, and chronic disease self-management program. The JMU Library Quick Search yielded 977 articles, while PubMed yielded only 131 articles after inclusion criteria. Boolean terms were used for search on PubMed for "Chronic Disease Self-Management Program" AND "Kurds", but no articles were found. Then the terms "Chronic Disease", in quotation AND "Kurd", in quotation, were

searched. Only one article was found, which had some information on Kurdish individuals living in Finland, not related to the CDSMP. No articles were found on the Kurdish population and the chronic disease self-management program. Lastly, the terms “Kurdish refugees in the USA” was searched on Google Scholar, which resulted in one article on healthcare utilization in the Kurdish refugees and immigrants in the USA. Twelve articles were selected for full-text final review (See Appendix A).

Overall, the CDSMP has had notable outcomes on how participants manage their chronic conditions. The positive outcomes range from reduced emergency room and hospitalization visits, improved physical activity, depression, self-efficacy, self-rated health, blood pressure, Hemoglobin A1C, and improved weight loss (Ahn et al., 2013; Haslbeck et al., 2015; Ory et al., 2013; Smith et al., 2013; Stillwater & Farr, 2013; Swerissen et al., 2006; Tomioka et al., 2012). The CDSMP can be tailored towards the Kurdish population to achieve similar positive outcomes.

The CDSMP has been implemented and is effective in different cultures and settings. For example, the CDSMP can be effective when taught in other languages, as shown by a randomized control trial carried out by Lorig, Ritter, & González (2003), where the CDSMP workshop was implemented in Spanish. At 4 months post-intervention, the intervention groups compared to the control groups demonstrated improvement in health status, health behavior, and self-efficacy, as well as fewer emergency room visits ( $p < .05$ ) (Lorig, Ritter, & González, 2003). At 1-year post-intervention, the improvements in health status and health behavior were maintained (Lorig, Ritter, & González, 2003). In another study by Melchior et al. (2013), 8 agencies delivered 82 CDSMP workshops in Spanish throughout South Florida. A total of 682



Spanish-speaking participants attended the CDSMP workshops from October 2008 to December 2010 (Melchior et al., 2013). The study result showed significant improvement in self-efficacy to manage symptoms, perceived social and role activities limitations, time spent walking, and time spent performing other aerobic activities (Melchior et al., 2013).

The CDSMP workshop has also been delivered in Chinese, Italian, Greek, Vietnamese, and German in European countries (Haslbeck et al., 2015; Swerissen et al., 2006). In Swerissen et al.'s (2006) study, which was a randomized control trial, the CDSMP Leader's Manual was translated into Italian, Greek, Vietnamese, and Chinese. A total of 474 participants completed the study (320 intervention participants and 154 control participants) (Swerissen et al., 2006). Of the 474 participants, 107 were Greek speaking, 105 Italian speaking, 160 Vietnamese speaking, and 102 Chinese speaking (Swerissen et al., 2006). At 6 months post-intervention, the intervention group had significantly higher levels of energy ( $p < .000$ ), exercised more frequently ( $p = .005$ ), used significantly more cognitive symptom management techniques ( $p < .000$ ), reported greater levels of self-efficacy ( $p < .000$ ), and reported higher levels of self-rated health ( $p < .000$ ) than the control group (Swerissen et al., 2006). However, the  $p$  value  $< .000$  is a rare and uncommon value and could be an error in the Swerissen et al. (2006) study. In Haslbeck et al.'s (2015) study, 278 individuals attended 35 CDSMP workshops that were delivered in German and French. The majority of the workshops were delivered in the German-speaking parts of Switzerland ( $n = 19$ ) and Austria ( $n = 12$ ), with four workshops delivered in the French-speaking region of Switzerland (Haslbeck et al., 2015). In Haslbeck et al.'s (2015) study, participants reported fewer difficulties with concentration, less limited mobility, less fatigue, less fear, and less lack of motivation at

the end of the workshop. After the workshop, participants also showed improvements in perceived self-efficacy, reported stronger feelings of not being overwhelmed by difficult emotions triggered by their disease, felt able to handle problems arising from their condition, felt they were generally coping well, and were more capable of handling feeling depressed at times (Haslbeck et al., 2015). In summary, the systematic review of the literature suggests that CDSMP can significantly improve health outcomes for individuals with chronic conditions.

### **Theoretical Model**

The framework identified to implement this project is the PRECEDE/PROCEED model (see Appendix B). This is a model that helps develop a coherent plan to address a problem instead of grasping at straws (“Community Tool Box”, 2017). PRECEDE stands for Predisposing, Reinforcing, and Enabling Constructs in Educational/Environmental Diagnosis and Evaluation (“Community Tool Box”, 2017). PROCEED stands for Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development (“Community Tool Box”, 2017). PRECEDE represents the process that precedes, or leads up to, the intervention, while PROCEED describes how to proceed with the intervention itself. A Logic Model was also used to assist in carrying out the workshop (See Appendix C). A logic model is like a road map or blueprint and presents a picture of how a program initiative is supposed to work (“Community Tool Box”, 2018). The Logic Model was used as a visual checklist to make sure that each activity or step of the project was carried out during the right time.

### **PRECEDE/PROCEED model**

#### **Phase 1: Social Assessment**

To gain more knowledge about the Kurdish population, three in-person key informant interviews were conducted before the CDSMP workshop was implemented. The interviews were conducted with a family nurse practitioner at a free clinic that sees Kurdish patients, a refugee office coordinator who has worked closely with the Kurdish population, and a Kurdish organization board member. According to the Kurdish organization board member, there are a total of about 1400 Kurds in the city that the workshop was implemented. There are different dialects spoken among the Kurds, with the majority of the Kurds speaking the Sorani dialect. The interviews were conducted using a list of developed key informant questions (See Appendix D).

### **Phase 2: Epidemiological Assessment**

There was a lack of information on chronic diseases in the Kurdish population from the literature review and from the Kurdish community organization. The only information that was gathered from the local Kurdish community organization was the number of Kurds and the different dialects. Epidemiological information was difficult to obtain due to lack of resources about the Kurdish population. The project facilitator looked at other minority population epidemiology on chronic diseases and applied that knowledge to the Kurdish population.

### **Phase 3: Educational and Ecological Assessment**

This assessment was completed through key informant interviews with three individuals who worked most closely with the Kurdish population. The interview questions were pre-written based on some standard informant interview questions.

### **Phase 4: Administrative and Policy Assessment/Intervention Alignment**

The CDSMP workshop had the capability and resources to make the program a reality, with the help of the refugee resettlement office. The workshop had been implemented in other cultures demonstrating positive outcomes, but it had never been implemented in the Kurdish population. This was a barrier to carrying out the workshop. However, there were resources to help carry out the workshop, such as assistance from the refugee resettlement office, a Kurdish translator, transportation assistance, and childcare assistance if needed. Before the workshop was implemented, the barriers of transportation and childcare need were resolved.

### **Phase 5: Implementation**

This project was conducted as a descriptive program evaluation designed to evaluate the effectiveness of the CDSMP workshop on self-management of chronic diseases in the Kurdish population. Program implementation was started once approval was gained from the James Madison University institutional review board (IRB) committee and consent forms were signed by all participants. During this phase, the project facilitator, Kurdish translator, refugee resettlement office coordinator, and the CDSMP coordinator gathered to discuss implementing the workshop. The workshop flyer, consent form, and the CDSMP charts were translated into Kurdish before the program was implemented.

Before the workshop was implemented, pre-evaluation data was collected by visiting each participant's house and assisting them to fill out the CDSMP Questionnaire and consent form. In addition, flyers, consent forms, CDSMP charts, and CDSMP Questionnaires were prepared during this phase of the process.

**Phase 6: Process Evaluation**

**Plan:** workshop implemented successfully.

**Measures:** sign in sheets and field notes from each session.

**Data Collection:** Collected sign-in sheet to keep track of the number of participants that attended each session. Project facilitator spoke with the Kurdish translator and took notes on what went well during each session and how to improve or adjust each session.

**Phase 7: Impact Evaluation**

**Plan:** Identified factors that encouraged or discouraged participants from attending the workshop. This included family problems, other responsibilities, or retaliation risks of participating in the workshop.

**Measures:** Field notes and key informant interviews

**Data Collection:** At the end of the workshop, the project facilitator asked participants to state the factors that prevented them from attending the workshop. These factors were categorized according to predisposing, reinforcing, and enabling factors for the Kurdish population.

**Phase 8: Outcome Evaluation**

**Plan:** Identified outcome measures through paper/pencil pre-intervention and post-evaluation questionnaires.

**Measures:** The CDSMP Questionnaire measured:

- ▶ Age, gender, race, education level, marital status, type of chronic disease

- ▶ Self-rated general health
- ▶ Health distress symptoms
- ▶ Physical activity
- ▶ Self-efficacy
- ▶ Social/role activity limitations: how their health has interfered with daily activities
- ▶ Communication with their provider
- ▶ Healthcare utilization

**Data Collection:** Data was collected from each participant before the start of the intervention, at the end of the six-week intervention, and at the twelfth week from the start of the workshop. The consent form (Appendix E) gave the information to the participants about the project before they participated. The CDSMP Questionnaire (Appendix F) was collected at the beginning, after the six-week workshop, and at twelfth week from the start of the CDSMP workshop. This is a paper/pencil questionnaire that was developed by Stanford University in 2007. The questionnaire obtains the participant's demographic information, general health, health distress symptoms, physical activity, confidence, communication with their providers, and healthcare utilization. The questionnaire was not translated into Kurdish because some of the participants were not literate in Kurdish and they may have not understood the questions on the questionnaire. The project facilitator and the Kurdish translator went to each participant's house before the start of the workshop, at the end of the six-week workshop, and then again at twelfth weeks post workshop to verbally translate the questions into Kurdish to make sure the

participants understood the questions on the CDSMP Questionnaire. The project facilitator and the Kurdish translator also verbally translated a CDSMP Satisfaction Survey Questionnaire into Kurdish for each participant to complete at the end of the six-week workshop. The surveys were linked to a confidential identifier number (See Appendix G).

## **Methods**

### **Setting and Resources**

The refugee resettlement office coordinator assisted recruiting participants, finding a Kurdish translator, and transportation. The workshop was held at a local church.

### **Study Population and Participant Recruitment**

The population of interest were non-English speaking female Kurdish individuals living in a small community in a Mid-Atlantic state. To protect participant privacy, the exact location of the research is not identified. They were eligible for inclusion in the study if they were female adults over the age of 18 with a chronic disease and Kurdish ethnicity. Individuals were excluded if they were under 18 years of age, were not Kurdish, or were cognitively impaired. Men were not included in the workshop because the workshop was designed for women so that they could be truthful in their feelings. Including men might have prevented them from sharing openly about certain issues. Participants were recruited via community outreach through a refugee resettlement office, social services for aging, a mosque, and a Kurdish community organization. The coordinator of a non-profit organization who worked closely with the Kurdish

community assisted in organizing the CDSMP workshop by providing transportation and finding the Kurdish translator. A sign in sheet was completed to keep track of the number of participants that attended each session. Field notes were obtained from the sessions on how to improve and adjust the workshop.

### **Ethics and Human Subjects Protection**

The project facilitator did not perceive more than minimal risks from involvement in this study (that is, no risks beyond the risks associated with everyday life). Potential benefits from participating in this study included:

- Increased knowledge of how to self-manage chronic diseases
- Improved quality of life
- Increased confidence
- Improved communication with their provider
- Decreased hospitalization
- Reduced avoidable emergency department visits
- Reduced healthcare costs in the long-term

After consent, the participants were assisted to complete the Questionnaire during the first workshop session. A confidential identifier was assigned to each participant. All collected data was confidential and accessible only by the researchers. The participants had the choice not to answer the questions and could stop the questionnaire at any time. Participation in this study had minimal risk. The participant's response to any of the questions was completely voluntary, and there were no consequences for skipping or refusing to answer any question or declining to participate in the project study. The



participants who did not wish to participate in completing the questionnaire returned the blank questionnaire. Paperwork was shredded at the completion of the project.

### **Program Description**

The CDSMP workshop was taught by the project facilitator and the Kurdish translator. The project facilitator used the CDSMP Leader's Manual, which includes six sessions of education and information for individuals with chronic diseases. The CDSMP workshop is scripted in that the Leader's Manual tells the facilitator exactly what to say and what exercises to do for each session. The Kurdish translator was not certified as a CDSMP leader, but verbal permission was obtained from the CDSMP coordinator that the translator can assist with implementing the CDSMP workshop. The translator's job was to assist the project facilitator by pointing to the charts, that are translated into Kurdish, during exercises. The translator also wrote responses in Kurdish during the CDSMP activities. The project facilitator went through each activity during each session and verbally translated what was in the Leader's Manual into Kurdish. If assistance was needed in translating certain words or phrases during each session, then the translator assisted with Kurdish translation. Each workshop session took approximately 2 ½ hours.

### **Modifications for the Kurdish Population**

During some sessions, certain exercises were modified for the Kurdish participants. Since some of the individuals had no education, the project facilitator had to explain certain exercises more than once. For example, the project facilitator had to explain the concept of "brainstorming", "decision-making steps", or how to perform the

“relaxation body scan” to make sure the participants understood the exercises. For the “relaxation body scan” exercise, there was no Compact Disk (CD) to read out the script in Kurdish. Therefore, the project facilitator had to translate the script and read it. During the “Healthy Eating” activity three of session four in the Leader’s Manual, an actual plastic plate was created to demonstrate “The Plate Method”. The “Making Healthy Food Choices” activity two of session five was modified when discussing food labels. For example, instead of asking the participants to open their *Living a Healthy Life textbook*, since they were not given a textbook, participants were handed a food label printout and the project facilitator reviewed the total number of carbohydrates, cholesterol, different types of fat, calories, and serving size. The project facilitator then showed the participants some actual food labels.

### **Measures**

The CDSMP questionnaire has been tested for reliability and validity (Lorig et al., 1996). Outcome measures were chosen from the CDSMP Questionnaire and included demographic information (age, gender, ethnicity, education level, marital status, and type of chronic disease), general health, health distress symptoms, physical activities, self-efficacy, social/role activities limitations (health interference with daily activities), and communication with their provider. General health was measured through a 5- likert scale, with 1 being excellent and 5 being poor. Health distress symptoms measured through a 5- likert scale indicated how much the participants’ health has caused them certain symptoms of distress, with 0 being none and 5 being most of the time. The physical activities scale measured the total minutes per week the participants spent doing stretching, walking, swimming, bicycling, and aerobic exercises. Self-efficacy was

measured through six questions on a 10-likert scale on how confident the participants were in keeping their disease from interfering with what they want to do, with 0 being not at all confident and 10 being totally confident. Social/role activities limitations was measured by a 4-likert scale asking participants four questions on how their health has interfered with their activities for the past two weeks, with 0 being not at all and 4 being almost totally. Medical care measured 3-likert scale questions on communications with the patients' provider and four write-in questions about their healthcare utilization for the past six months. The outcome measures in the CDSMP Questionnaire were self-reported by the participants.

### **Timeline**

January 17, 2018	Project Proposal Submitted to JMU IRB Committee
February 21, 2018	IRB Approval Received
March 23, 2018	Started CDSMP Workshop
April 27, 2018	Finished CDSMP Workshop
April 27-May 1, 2018	First data collection
June 8-12, 2018	Second data collection

### **Results**

Eleven individuals agreed to participate in the program and completed a baseline CDSMP Questionnaire and consent form. On average, eight participants came to the workshop. At six-weeks post-intervention, the CDSMP Questionnaire and Satisfaction Questionnaire was completed by 8 participants (72%). At 12-weeks post-intervention, the

CDSMP Questionnaire was completed by 7 participants (63%). The participants' demographics appear in Table 2. All the participants spoke Kurdish and were female. The mean age of the participants was 51 years. As for the type of chronic diseases, 4 (36%) had diabetes, 3 (27%) had lung disease including asthma, emphysema, and COPD, 1 (9%) had arthritis, and 7 (63%) had some other type of chronic disease.

[Insert Table 2. Baseline Demographic Variables] (See Appendix H).

[Insert Table 3. Pre-Test, Post-Test Data of Outcome Measures Using Paired T-Tests] (See Appendix I).

Results were compared at baseline, at six-weeks post-intervention, and at 12-weeks post-baseline data for differences in general health, health distress symptoms, physical activities, self-efficacy, social/role activities limitations, and communication with their provider.

### **Comparison at six-weeks post-intervention**

Table 3 shows the comparison between the baseline data, six-weeks after the start of the workshop, and 12-weeks from baseline. Overall, there were improvements in general health, health distress symptoms, mild improvement in physical activity, confidence level, social/role activity limitations, as well as communication with providers. At six-weeks post-intervention, there was improvement in all outcome measures. However, there was statistically significant improvement in general health ( $p = .004$ ) and health distress symptoms ( $p = .001$ ). When looking at the health distress symptoms caused by their chronic disease, there was significant improvement in their symptoms at six-weeks (12.875,  $p = .001$ ) post-intervention compared to baseline mean (4.50). Although the mean physical activity improved from baseline to six-weeks post-

intervention (2.125 at baseline versus 2.265 at six-weeks,  $p=.430$ ), there was no statistically significant improvement. When comparing the baseline questionnaire to six-weeks post-intervention, the findings showed that the completers had higher mean self-efficacy after the six-week workshop (34.42 at baseline versus 40.42 at six-weeks). Although the mean self-efficacy increased in the desired direction and was clinically significant, it was not statistically significant ( $p=.228$ ). The participants' activities limitation mildly improved after six-weeks of the workshop compared to baseline (mean of 4.62 at six-weeks versus 6.50 at baseline). Although it was not a significant improvement, the participants also had mild improvement in communication with their providers (mean of 12.0 at six-weeks versus 10.12 at baseline).

### **Retention of Benefits at 12 weeks post-intervention**

To determine the long-term retention of the effects found at 12 weeks from the start of the workshop, the outcomes were examined at 12-weeks post-baseline data (Table 3). The analysis used paired t-tests to determine the probability that the 12-week change scores were significantly different from baseline. Except for self-efficacy and physical activity, the rest of the health outcome measures showed continued improvement, as compared with baseline. The mean physical activity decreased to 2.42 at 12-weeks post-intervention, as compared to baseline mean of 2.125 and six-week post-intervention mean of 2.62. Although the participants' mean self-efficacy decreased from 40.42 at six-week post-intervention to 38.28 ( $p=.124$ ) at 12-week post-intervention, it still was an improvement from the mean baseline self-efficacy of 34.42.

## Discussion

The healthcare utilization, including the number of visits to physicians' office, visits to the emergency room, and hospitalization, were not included in the data analysis since this project was completed in such a short time. Longer duration is needed to follow up on the participants to see if the workshop had a true impact on the use of healthcare utilization. The objective of this study was to determine if the CDSMP workshop could be implemented by verbally translating the CDSMP Leader's Manual into Kurdish. Not only was the workshop implemented successfully, but it also had positive outcomes. After completing the workshop, there were consistent positive results in health behaviors and health status both at both six-weeks and 12-weeks post-intervention. In addition, the participants' self-efficacy in managing their conditions was enhanced. The female participants enjoyed the workshop and wanted it repeated. Very few self-management interventions are available for Kurdish-speaking populations with chronic conditions. This study is possibly the first to provide an intervention for Kurdish individuals with chronic conditions.

The results of this study had similarities and differences compared to the studies examined during the review of the literature. It seems that this study had similar improvement in physical activities as seen in other studies with minority groups (Ory et al., 2013; Tomioka et al., 2012; Smith et al., 2013). This study had similar improvement in self-efficacy and self-rated general health as seen in other studies (Swerissen et al., 2006). Some of the studies reviewed in the literature showed significant improvement in communication with providers (Ory et al., 2013; Tomioka et al., 2013). Although the communication improvement with providers was not significant in this study, the

participants did have some improvement at six-weeks post-intervention and at 12-weeks post-baseline data. However, most of the studies reviewed in the literature had longer follow-ups, which can affect the outcome measures.

When looking at the attrition rate of this study, one of the participants could not attend every session because she had to cook for her husband before he went to work, and the timing did not work well. Another participant stated her job prevented her from coming. For the Kurdish population, transportation was a definite barrier to coming to the workshops. A single driver was provided to pick up all the participants that did not have rides. Lastly, there was only one participant who dropped out of the workshop due to loss of interest.

### **Limitations**

This study had several limitations. The first limitation was the small sample size. The second limitation was the recruitment methodology. Because participants were recruited from the community and mosque centers and were only female, the sample may not represent the general Kurdish population and cannot be generalized to males or other diverse groups in more metropolitan areas. Because there was no randomization and some participants were self-selected, bias may have been introduced to both the sample and the results, based on the participants' ability and eagerness to learn. Participants could have introduced bias into the CDSMP Questionnaire and Satisfaction Survey to have the workshop repeated, since the data was all self-reported. Since the CDSMP Questionnaire was verbally translated by the researcher, the participants could have been influenced to answer the questions differently. With the CDSMP Questionnaire, there could have also been recall biases, especially with healthcare utilization.

### **Implications**

This project had several implications. The first implication is that further research needs to be conducted with a larger sample size and longer follow up to see the long-term benefits of the program. The healthcare utilization, including the number of visits to physicians' office, visits to the emergency room, and hospitalization, were not included in the data analysis since this project was completed in such a short time. Longer duration is needed to follow up on the participants to see if the workshop had a true impact on the use of healthcare utilization.

The second implication is to align the curriculum in healthcare professions to improve cultural competency and sensitivity by healthcare providers. When providers are not trained to be culturally competent, they may fail to demonstrate understanding and awareness of cultural values of their patients and therefore offend them (Choi et al., 2015). Adequate cross-cultural communication is needed to provide high quality health care to immigrant populations (Choi et al., 2015). It is critical to understand the unique Kurdish culture, history of trauma and refugee experiences, and how cultural and migration experience form the help seeking strategies of older Kurds (Choi et al., 2015). Cultural competency is a key factor to improving service access and utilization among refugees and immigrants (Choi et al., 2015). Training healthcare professionals on cultural competency will ensure that they are properly trained to provide the foundation for empathy and a critical awareness of the different cultural perceptions of health and wellbeing of refugees and migrants (Laverack, 2018). In addition, the healthcare profession curriculum needs to stress the importance of providing translators to the Kurdish population in order to provide culturally sensitive high-quality patient care. The



role of a culturally and linguistically competent interpreter is crucial when providing care to the Kurdish population (Choi et al., 2015). Four out of the 11 female participants had no education in this study. Language barrier due to low literacy level needs to always be taken into consideration when providing this population education. When providing a translator, in the dialect that that patient speaks, the patient is more likely to understand the nurses and providers. Additionally, nurses and providers need to understand the importance of involving family when treating Kurdish female patients with chronic diseases. Kurdish female individuals tend to put their family's needs before their own as they do the majority of household chores. Therefore, the participants' families need to be considered when planning any type of education for this population.

Lastly is the need for policy implication. Healthcare professionals need to be aware on the implications of Kurdish females who are uninsured and lack transportation and refer them to resources in the community, such as free clinics. There needs to be more policy on how free clinics can reach out to the Kurdish population to help them with their chronic diseases.

### **Conclusion**

Reaching minority individuals who can benefit from evidence-based self-management programs that focus on prevention can impact healthcare cost savings in the United States. The Kurdish population are in need of more resources and programs, like the CDSMP workshop, to help them manage their chronic diseases. This study showed that CDSMP workshops can be modified and successfully implemented in diverse community settings, like the Kurdish community, while still maintaining the key components of the program.

### **Conflict of Interests**

The authors declare that there is no conflict of interest.

**Appendix A.**

**Table 1.** Summary of systematic review articles.

Author, Yr.	Research Design	Level of Evidence	Sample and Sample Size	Intervention	Instruments	Results/Stats Evidence	Summary/Conclusion
Ory et al. (2013)	Quasi-experimental pre-post longitudinal design	IV: there was no control group or randomization.	<p>Convenience sample with participant recruitment from aging network organization, health care facilities, social service organization, self-referrals, and flyers/brochures.</p> <p>-1,170 adults were enrolled in the national study of CDSMP workshop in 2010-2012</p> <p>-Six-month assessments were available for 903</p>	Individuals participating in the Chronic Disease Self-Management Program (CDSMP).	<p><b>Primary outcomes:</b></p> <p>-<i>Social/Role Activities Limitation:</i> participants were asked how much their health has interfered with their social/role activities.</p> <p>-<i>Depression:</i> Personal Health Questionnaire Depression Scale (PHQ8) used.</p> <p>- <i>Communication with Physicians:</i> was measured using a three-item scale with average value.</p> <p><b>Secondary outcomes:</b></p> <p>-<i>Health status:</i> measured by the CDC Healthy Days</p>	<p>-The mean age was 65.4 years.</p> <p>-Social/role activities (<math>p &lt; .001</math>), depression (<math>p &lt; .001</math>), and communication with physicians (<math>p &lt; .001</math>) improved significantly from baseline to 6-month follow-up.</p> <p>-Participants also reported significant improvements in more physical activity (odds ratio [OR] = 1.75, <math>p &lt; .001</math>) and less emergency room (ER) visits (OR = 0.68, <math>p = .007</math>) and hospitalization (OR = 0.72, <math>p = .03</math>) at 6 months assessment than at baseline.</p>	<p><b>Conclusion:</b> The CDSMP demonstrated a number of benefits in the current study with significant improvements in primary health indicators. The study stressed the importance of encouraging patient referrals to CDSMP workshops, and the need for support to ensure the availability of such programs for the population of seniors with multiple chronic conditions.</p> <p><b>Limitations:</b></p> <p>-Population was mostly women, which restricts generalizability</p>

			participants		self-assessed scale. - <i>Health-related behaviors</i> : participants were asked a series of questions to document prescription medication adherence. The Behavioral Risk Factor Surveillance Survey (BRFSS) items was used to measure engagement in moderate-intensity physical activity. Self-reported healthcare utilization was measured.	-The adjusted analyses also revealed significant changes for most of the secondary outcomes, with the exception of stress symptomatology, medication adherence, and number of doctor visits in the past 6 months.	y to primarily females. -All outcome variables were self-reported, which may have led to under- or overestimation of participant responses. -No control or randomization
Stillwater & Farr (2013)	Quasi-experimental: Pre-posttest design	III: there was a control group, but no randomization.	Convenience sample: workshop attendees were self-selected and control group were selected from a local federally qualified health center	Individuals participating in two types of self-management workshop: the chronic disease self-management program (CDSMP) and the diabetes self-management	-Biometric measures were obtained prior to classes for baseline and then follow-up measures at 3, 6, and 12 months were extracted from	-The self-management group mean age was 57 and 60% female. - The control group mean age was 60 and 62% female.  -The analysis of baseline to 12-month	<b>Conclusion:</b> This analysis suggests taking self-management classes may improve BMI, BP, and A1C measures.  <b>Limitations:</b> -The results may be biased by the fact

			<p>(FQHC) registry.</p> <p>DSME/CD SMP: The self-management group was comprised of 131 individuals.</p> <p><u>Control:</u> consisted of 100 individuals</p>	<p>education (DSME) workshop.</p>	<p>patients' medical records.</p> <p>-BMI: based on the height and weight. A conservative threshold of a 10% weight loss was used according to recommendation from the National Institutes of Health (NIH).</p> <p>-BP: was measured via a manual cuff and recorded by a nurse.</p> <p>-LDL: was indirectly calculated via the Friedewald equation.</p> <p>- Glycosylated hemoglobin (A1C) was measured by a certified lab.</p>	<p>found that the attendees of the self-management group were more likely to lose 10% of their weight, have decreased BP below 130/80, &amp; have better A1C.</p> <p><u>BMI:</u></p> <p>-Between baseline and 12-month follow-up, mean BMI did not change significantly within either group.</p> <p><i>-BMI changes at 12 months relative to a 10% loss of body weight:</i> Within the self-management group, the difference between the group's weight change category (lost 10%, stayed the same, gained 10%) was significant (<math>X_{22} = 6.55</math>; <math>p=.04</math>).</p>	<p>that the analyses were only possible for those persons with follow-up data.</p> <p>-The sample size was small</p> <p>- Randomized control trial studies would need to be conducted to eliminate the alternative explanation of self-selection.</p>
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						<p><u>Blood Pressure:</u>  <i>-BP changes at 12 months relative to 130/80: 33 patients from the self-management group changed from a high BP at baseline to low BP at 12 months, while 19 of the control group changed from high to low BP, with a significant difference between the two groups (<math>X_{21} = 5.64</math>; <math>P = .02</math>).</i></p> <p><u>A1C:</u>  <i>-A1C changes at 3, 6, and 12 months: Patients in both the self-management and control group experienced marginally significant changes in A1C at 12 months (self-management: <math>t_{25} = -2.03</math>, <math>P = .05</math>;</i></p>
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						<p>control: <math>t_{99} = -1.87, P = .06</math>).</p> <p><u>LDL:</u></p> <p>-LDL increase or decrease at 12 months relative to 100:</p> <p>Individuals in neither group experienced significant change in LDL levels from baseline to 12 months (<math>X_{21} = 0.50; P = .48</math>).</p>	
Ahn et al. (2013)	National study with a pre-post design: quasi-experimental.	III: there was no control group or information on randomization, but the article mentioned that they controlled for age, sex, race/ethnicity, education, and number of chronic conditions.	Convenience sample of 1,170 community-dwelling CDSMP participants were surveyed at baseline, 6 months, and 12 months from 22 organizations in 17 states.	CDSMP workshop	<p>- Self-reported data using validated questionnaires were collected about health conditions, health behaviors, and healthcare utilization at baseline, 6 months, and 12 months.</p> <p>- Calculating age-adjusted average costs for persons using the 2010 Medical Expenditure</p>	<p>- Findings from the analyses showed significant reductions in ER visits (5%) at both the 6 and 12-month assessments, and reduction in hospitalizations (3%) at 6 months among CDSMP participants.</p> <p>- The odds of ER visits in the past 6 months among CDSMP participants was</p>	<p><b>Conclusion:</b> Findings emphasize the value tertiary prevention interventions and the need for policies to support widespread adoption of CDSMPs.</p> <p><b>Limitations:</b> - Healthcare utilization was self-reported resulting in the possibility of recall bias. - The study concluded that the current 12-month study</p>

					<p>Panel Survey.</p> <ul style="list-style-type: none"> <li>-Computing potential cost savings by deducting program costs from estimated healthcare savings</li> <li>- Extrapolating savings to national populations using Census data combined with national health statistics.</li> </ul>	<p>significantly reduced from baseline to 6-month (Odds Ratio [OR] = 0.68, <math>p = 0.007</math>) and 12-month (OR = 0.68, <math>p = 0.009</math>).</p> <ul style="list-style-type: none"> <li>-The adjusted odds of hospitalizations was significantly reduced from baseline to 6-month follow up (OR = 0.70, <math>p = 0.025</math>).</li> <li>-The result equates to potential net savings of \$364 per participant and a national savings of \$3.3 billion if 5% of adults with one or more chronic conditions were reached.</li> </ul>	<p>may require a longer study duration to conclude definitively the healthcare cost-saving effects of CDSMP.</p> <ul style="list-style-type: none"> <li>-No control group or randomization</li> </ul>
<p>Tomioka, Braun, Compton, &amp; Tanoue (2012)</p>	<p>Quasi-experimental: pre-post design</p>	<p>IV: there was no control group or randomization.</p>	<p>-Purposive sampling of Hawaii's multicultural population</p> <ul style="list-style-type: none"> <li>-Between July 2007 and</li> </ul>	<p>CDSMP workshop</p>	<ul style="list-style-type: none"> <li>- They used the Track Change Tool adapted by the National Council on Aging to deconstruct CDSMP into its components,</li> </ul>	<ul style="list-style-type: none"> <li>-All three groups realized significant decreases in social and role activity limitations (Caucasians <math>t = 2.44, p = .018</math>; Asians <math>t</math></li> </ul>	<p><b>Conclusion:</b></p> <ul style="list-style-type: none"> <li>-This study suggests that CDSMP can be modified for increased cultural appropriateness for Asian and Pacific Islander (API)</li> </ul>



			<p>February 2010, 741 individuals enrolled in CDSMP. -675 (91%) participants were included in the analysis. -But, only 584 (87%; including 84% of Caucasians, 91% of Asians, and 86% of NHPIs) completed the workshop. - The 6-month follow-up questionnaire was completed by 422 participants (72%; including 44% of Caucasians, 65% of Asians, and 69% of NHPIs).</p>		<p>such as marketing, recruitment, staffing, training, scheduling, and evaluation. - They used the “adaptation traffic light” to identify allowable modification to the original program. -They monitored local leaders’ fidelity of delivery of CDSMP using a 10-item Likert scale assessment developed by the Stanford Patient Education Research Center. -Program satisfaction was assessed immediately upon completion of the CDSMP 6-week workshop and at 6 months, using a 15-</p>	<p>= 6.63, <math>p &lt; .001</math>; and NHPIs <math>t = 2.14</math>, <math>p = .034</math>) and significant increases in communication with physicians (Caucasians <math>t = -2.73</math>, <math>p = .009</math>; Asians <math>t = -5.18</math>, <math>p &lt; .001</math>; and NHPIs <math>t = -2.14</math>, <math>p = .017</math>). -Asians and Pacific Islanders also realized significant increases in self-rated health (Asians <math>t = 7.67</math>, <math>p &lt; .001</math> and NHPIs <math>t = 3.48</math>, <math>p &lt; .001</math>) and time spent engaging in stretching/strengthening exercise (Asians <math>t = -5.70</math>, <math>p &lt; .001</math> and NHPIs <math>t = -2.78</math>, <math>p = .006</math>). -Caucasians and Asians showed significant</p>	<p>communities while maintaining the key components responsible for behavior change.</p> <p><b>Limitations:</b>                  -Data is mostly generalized to the Asian and Pacific Islanders (API) population.                  - Participant data were self-reported and may have been compromised by inability to remember the past correctly (especially the exact timing of a physician or ER visit) and desire to please program providers.                  -The majority of the participants were females                  -There was no control group or randomization</p>
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					<p>item satisfaction survey that was adapted from an instrument developed for CDSMP. - The self-administered Health Outcome Survey, previously validated by Stanford Patient Education Research Center, was used to collect baseline and six-month follow-up data. This questionnaire assessed health status, health behaviors, self-efficacy, communication with physician, and health care utilization.</p>	<p>reduction of physical limitations (Caucasians <math>t = 2.63, p = .011</math> and Asians <math>t = 4.05, p &lt; .001</math>), whereas NHPIs did not. -Asians reported significant reductions in health distress (<math>t = 9.15, p &lt; .001</math>), fatigue (<math>t = 6.01, p &lt; .001</math>), shortness of breath (<math>t = 6.61, p &lt; .001</math>), pain (<math>t = 7.18, p &lt; .001</math>), and self-reported physician visits (<math>t = 4.52, p = .001</math>). -Asians showed significant increases in time spent in aerobic exercise (<math>t = -7.01, p &lt; .001</math>), ability to cope with symptoms (<math>t = -8.80, p &lt; .001</math>), and self-efficacy</p>	
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						( $t = -5.82, p < .001$ ).	
Haslbeck et al. (2015)	Non-experimental: longitudinal design	IV: there was no control group or randomization.	<p>Convenience sample of 278 participants in 35 CDSMP workshops between January 2012 and May 2014, in Switzerland and Austria.</p> <p>No workshops were conducted in Germany due to recruitment challenges. Thus, no data from Germany are reported.</p>	CDSMP workshop.	<p>-Self-report questionnaire was used for socio-demographic characteristics, participants' perceptions of the workshop experience and organization, course materials (a reference book), as well as perceived changes in health status, health behavior and patient-provider-interactions.</p> <p>-Perceived self-efficacy was measured using the validated German version of the Self-Efficacy for Managing Chronic Disease 6-Item Scale, SES6G.</p> <p>-Quantitative data were</p>	<p>-There were improvements in perceived self-efficacy immediately after the workshop. But, there was a slight decrease in self-efficacy at 4-6 months follow-up.</p> <p>-After the workshop, participants reported stronger feelings of not being overwhelmed by difficult emotions triggered by their disease, they felt able to handle problems arising from their condition, and generally coping well. They felt more capable of handling feeling down/depressed at times as well.</p> <p>-At follow-up (4–6 months), there was a</p>	<p><b>Conclusion:</b> The findings suggest that the process for cross-border adaptation was effective, and that the CDSMP can be successfully implemented in diverse healthcare and community settings.</p> <p><b>Limitations:</b> -Relied heavily on self-reported outcome measures. -There was no control group or randomization -The follow-up period was relatively short and they had attrition during the four to six months period. Thus, it remains an open question how certain outcomes, like self-efficacy, might have been affected</p>

					<p>reported using descriptive statistics (SPSS Version 21).                  -Qualitative data underwent analysis based on the principles of Grounded Theory.</p>	<p>slightly diminished capacity to avoid becoming overwhelmed and the confidence in being able to handle problems.                  -Participants reported fewer difficulties with concentration, less limited mobility, less fatigue, less fear, and less lack of motivation at the end of the workshop.                  -Participants took more prescription medication at the end of the workshop compared to the beginning.                  -The number of medical consultations increased, as did nights spend in the hospital. In contrast, self-medication decreased.                  -As for diet and exercise, at workshop</p>	<p>if more participants completed the final survey.                  -Small sample size and over 90% were females.                  -The study was carried out outside the U.S. and might limit generalizability to Switzerland and Austria.</p>
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						completion, participants reported sticking to well-known rules for healthy eating more strictly than before.	
Horrell et al. (2017)	Analysis of cross-sectional data (non-experimental).	VI: there was no control group or randomization. The study was more qualitative data.	Convenience sample collected from participants enrolled in the nationwide delivery of CDSME programs as part of the American Recovery and Reinvestment Act of 2009 (i.e., Recovery Act) <i>Communities Putting Prevention to Work: Chronic Disease Self-Management Program</i> initiative. -Entire sample was	CDSMP workshop	-Data were collected at the CDSME delivery site and later entered into an online national database for tracking and analysis. - Analyses were performed using SPSS (Version 22) - The dependent variable for this study was the proportion of households in the participants' county of residence that lived below 125% of the poverty line, defined by the U.S. Department of Health and	- The participants were aged 50 to 64 years. -Of the entire sample included in this analysis, 55 people lived in the most impoverished counties. While these 55 participants represented just 0.3% of the total study sample, researchers found that this group completed courses more frequently than participants from less impoverished counties once enrolled (p<0.001). - Those living in areas with higher percentages of	<b>Conclusion:</b> -The results signal a need to enhance participation of middle-aged adults from lower-income areas in CDSME workshops.  <b>Limitations:</b> -Data collected were limited to reduce participant burden and attract more people to the workshops. -No control group or randomization -Information about annual income was not collected from participants, and conclusions cannot be drawn regarding the association

			19,365 participants, across 45 states within the United States, the District of Columbia, and Puerto Rico.		Human Services.	residents without a high school education also resided in more impoverished counties (p < 0.001).	between individual income and program participation practices.
Swerissen et al. (2006)	Randomized control trials	II: the article specifically talks about randomization.	-Stratified random sample based on language and local government area in which the participants lived. -474 participants completed the study (320 intervention participants and 154 control participants). Of the 474 participants, 119 were males and 355 were females. The final sample comprised 107	Participants were randomly allocated to intervention (CDSMP workshop) or waiting-list control groups. The control group members received the CDSMP 6 months later than the intervention groups.	-Four categories of outcomes were assessed: <u>-Health status:</u> self-rated health, energy, health distress, disability, illness intrusiveness, social role/activity limitation, depression, pain severity, shortness of breath and fatigue. <u>-Self-efficacy &amp; health behaviors:</u> self-assessed frequency of exercise, cognitive symptoms management, and communication with	-The mean age of participants was 66 years. -The intervention group had significantly higher levels of energy (p < .000), exercised more frequently (p = .005), used significantly more cognitive symptom management techniques (p < .000), reported greater levels of self-efficacy (p < .000), and reported higher levels of self-rated health (p < .000). -In contrast, the control group	<b>Conclusion:</b> Self-management programs can be successfully implemented with culturally and linguistically diverse populations in Australia.  <b>Limitations:</b> -The results can only be generalized to Australians with a chronic illness from the language groups included. -The majority of participants were recruited through agencies and elderly citizens clubs, which skews the results.

			<p>Greek participants, 105 Italian participants, 160 Vietnamese participants, and 102 Chinese participants.</p>		<p>health practitioners.  <u>-Health service utilization:</u>                      was self-assessed by measuring the number of visits to general practitioners, specialist medical practitioners, allied health practitioners, mental health practitioners, and visits to emergency departments.</p>	<p>reported significantly higher levels of pain severity (p = .001), fatigue (p = .016) and health distress (p = .043).                      -No significant differences were found between the two groups on the disability scale (p = .426), social role/activity limitation (p = .067), illness intrusiveness (p = .076), depression (p = .422) and shortness of breath (p = .67).                      - There were no significant effects for health services utilization.                      - Vietnamese and Chinese speaking participants gained greater benefit.</p>	
<p>Smith, Cho, Salazar, &amp; Ory (2013)</p>	<p>Quasi-experimental: pre-post design</p>	<p>IV: there was no control group or randomization.</p>	<p>Convenience sample of 136 adults,</p>	<p>CDSMP workshop</p>	<p>-They tested three types of measures, including participant sociodemogr</p>	<p>- Participants were aged 50 years or older.                      -At 6 months follow up, Hispanic</p>	<p><b>Conclusion:</b>                      -Findings indicate health-related quality of life improvements</p>

			<p>residing in Bexar County, Texas.</p>		<p>aphics, program participation, and health status indicators.                  -All data collected from participants were obtained through self-reported questionnaire s.                  -Program participation was assessed from participants' session attendance obtained from administrative records (ranging from 1 to 6 sessions).                  -Health status indicators included the number of self-reported chronic conditions (ranging from 0 to 7) and health-related quality of life (HRQOL).</p>	<p>participants reported the most improvement in unhealthy physical days (5.14 +/- 9.96), followed by African Americans (2.38 +/- 10.18), then non-Hispanic Whites (-.91 +/- 7.27) [f=3.31, P=.042].                  -On average, Hispanic participants reported the most improvement in combined unhealthy days (7.00 +/- 10.41) followed by African Americans (2.94 +/- 9.92), then non-Hispanic Whites (.18 +/- 7.65) [f=3.661, P=.030].                  -Hispanic participants reported more improvement in unhealthy mental days (2.21 +/-</p>	<p>can be sustained months after the conclusion of CDSMP.                  -CDSMP should be expanded as part of broader efforts to reduce racial and ethnic disparities in health.  <b>Limitations:</b>                  -The CDSMP was delivered in one Texas County and had a small sample size, which may limit the generalizability of the findings.                  -Although Hispanic participants showed the greatest improvements in quality of life relative to their African American and non-Hispanic White counterparts, they also enrolled in the program with the most self-reported unhealthy</p>
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					-The authors chose two HRQOL items (total number of unhealthy physical days and unhealthy mental days) developed by the Centers for Disease Control and Prevention.	4.93), followed by African Americans (2.00 +/- 6.31)), then non-Hispanic Whites (1.37 +/- 6.27).	physical days and combined unhealthy days at baseline. -No control group or randomization
Jonker, Comijs, Knipschee, & Deeg, (2015)	Randomized control trial (RCT)	II: There was an intervention and control group with randomization.	-Random sample of 132 individuals, 63 of whom participated in the CDSMP and 69 were in the control group.	CDSMP workshop	-The main outcome measures were psychological coping resources (mastery, self-esteem, and self-efficacy) and wellbeing (positive affect, life satisfaction, valuation of life, and depressive symptoms). -Sense of mastery is the extent to which a person perceives him or herself to be in control of events and situations, which was	-The CDSMP was effective with respect to sense of mastery but only in the lower educated participants ( $p < .05$ ). -The outcome measures Self-efficacy and Valuation of Life decreased significantly ( $p < .01$ ) for the control group whereas they stayed stable in the intervention group at post-intervention 6-week assessment. -At 6-month follow-up, scores on	<b>Conclusion:</b> -The study recommended integration of the CDSMP program into the daily healthcare practice of professionals working with vulnerable older persons.  <b>Limitations:</b> -The sample size was small and the number of respondents was sometimes low, which reduces the power of the study, and may have led to an underestimation of the

					<p>measured by a 5-item version of the Pearlin Mastery scale, which is a five-point scale questions.</p> <p>-Self-efficacy was measured by a twelve-item version of the Perceived Self-Efficacy Scale</p> <p>-Depressive symptoms were measured with the Centre for Epidemiological Studies-Depression scale (CES-D).</p> <p>- To assess Life satisfaction, two questions were asked, and average score was used.</p> <p>-Cognitive functioning was measured by means of the Mini Mental State Examination (MMSE).</p>	<p>Self-efficacy (<math>p = .01</math>) and Valuation of Life were still lower in the control group (<math>p = .02</math>).</p> <p>-Mastery and Depression results showed positive changes in the intervention group at 6-month follow-up. Mastery improved (<math>p = .01</math>) whereas scores on Depression decreased (<math>p = .05</math>) significantly.</p> <p>-Self-esteem, Positive Affect, and Life satisfaction did not show any difference between the control and intervention group at both follow-ups.</p>	<p>effects of CDSMP workshop.</p>
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<p>Jaglal et al. (2014)</p>	<p>A retrospective cohort study</p>	<p>IV: there was no control group or randomization.</p>	<p>Convenience sample of 104 individuals from 13 rural and remote communities in the province of Ontario, Canada were enrolled in 19 CDSMP courses between September 2007 and June 2008.</p>	<p>CDSMP Workshop</p>	<p>They collected by telephone a number of outcome measures developed and validated by the Stanford Patient Education Centre. - Demographic information including age, sex, marital status, employment status, income, education level, and number and type of chronic conditions were collected at baseline for all participants. -Measures of self-efficacy, health behaviors, and health status were collected at baseline, 4 months and 12 months by self-reported</p>	<p>-The mean age was 65.3 years and over three-quarters were female. -There were no differences in patterns of health care utilization before and after participating in the CDSMP. -In Participants <math>\leq</math> 66 years, there was a 34% increase in physician visits in the 12 months after the program (OR = 1.34, 95% CI 1.11-1.61, <math>p=0.003</math>) and no significant difference in ED visits (OR 1.1, 95% CI 0.8-1.6, <math>p &gt; 0.05</math>). This could mean that the CDSMP encourages participants to assume a more active role in managing their health problems.</p>	<p><b>Conclusions:</b> -Future research needs to examine the impact of the CDSMP on health care utilization in different age groups to help to determine whether these interventions are more effective with select population groups.  <b>Limitations:</b> -Participants were from rural and remote communities in Canada. Thus, the results may not be generalizable to other populations. -There was a small sample size. -They do not know the length of time since chronic disease diagnosis. -The data was not randomized.</p>
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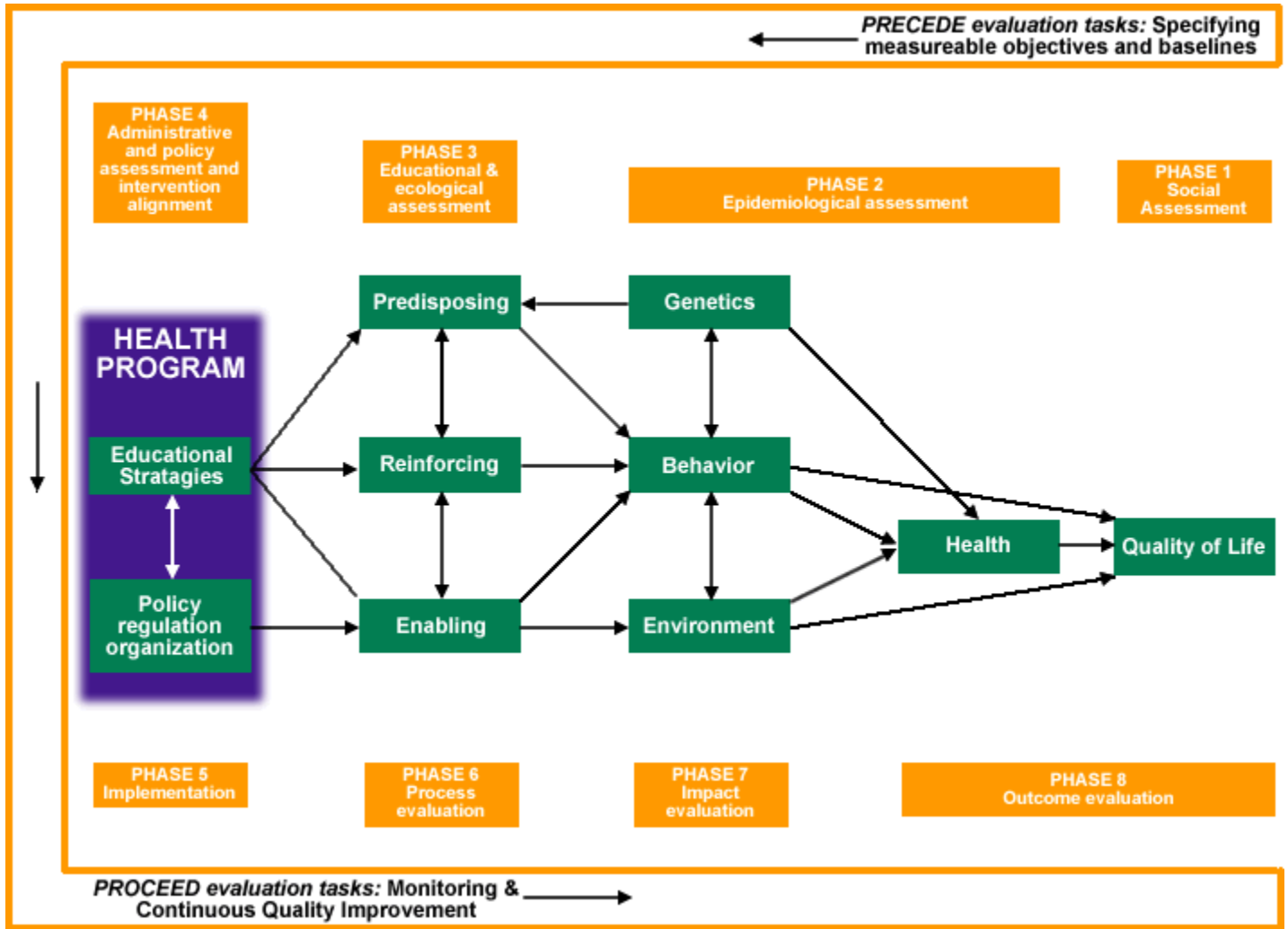
					5-point Likert scale.	-There was a 41% reduction in ED visits in those >66 years (OR = 0.59, 95% CI 0.33-1.06) during the year following the program, but no significant impact on physician visits. -There were no statistically significant differences between the groups for self-efficacy or among any of the health behavior or health status variables.	
Lorig, Ritter, & González(2003)	Randomized control trial (RCT)	II: There was an intervention and control group with randomization.	Random sample of 551 individuals, 327 of whom participated in the CDSMP intervention group, and 224 were in the control group. All participants were	Tomando Control de su Salud (Taking Control of Your Health), which is the Spanish version of the English CDSMP workshop. It is a community-based program for Spanish-	Outcome measures included health behaviors (physical activities), health status (self-rated health), healthcare utilization (visits to physicians, ED visits, and days in the hospital over the	At 4 months, the intervention group showed improved health status, health behavior, and self-efficacy, as well as fewer ED visits (p < .05). At 1 year, the improvements were maintained and remained	<b>-Conclusions:</b> The community-based program has the potential to improve the lives of Hispanics with chronic illness while reducing emergency room use. <b>-Limitations:</b> The results can only be

			Hispanics, Spanish speaking, with chronic diseases in northern California.	speaking Hispanics with chronic diseases.	preceding 4 months were measured by self-report), and self-efficacy (a 4-item self-efficacy scale asked participants about their certainty of controlling the fatigue, pain, emotional, and distress caused by their disease in order to perform daily activities)	significantly different from baseline. Self-reported physician visits and hospitalizations remained unchanged from baseline. ED visits in the last 4 months of the year after the program were significantly fewer than in the 4 months before the beginning of the course ( $p < .01$ ).	generalized to the Hispanic population.
Melchior et al. (2013)	Quasi-experimental: pre-post design	IV: there was no control group or randomization.	Convenience sample of 682 Spanish-speaking participants residing in South Florida, who participated in the workshops from October 1, 2008 through December 31, 2010. The participants were aged 55 years or	Tomando Control de su Salud (TCDS), the chronic disease self-management program for Spanish-speaking adults.	A self-reported survey was administered at baseline and at the end of the 6-week workshop. Outcome measures included self-efficacy, perceived social and role activities limitations, and health behaviors. -They also measured participant sociodemographics	All outcomes showed improvement at 6 weeks post-intervention. Outcomes that improved significantly were self-efficacy to manage disease ( $P=.006$ ), perceived social and role activities limitations ( $P=.001$ ), time spent walking ( $P=0.02$ ), and time spent performing other aerobic	<b>-Conclusion:</b> TCDS has the potential to improve health outcomes for a diverse, Spanish-speaking, older adult population. <b>-Limitations:</b> Since the participants were recruited from nursing homes, day care centers, and clinics, the sample may not represent the general population.

			older and had at least 1 chronic condition.		information at baseline.	activities (P=0.005).	Since the participants were self-selected, bias may have been introduced into the results. -Potential for recall biases.
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Appendix B.

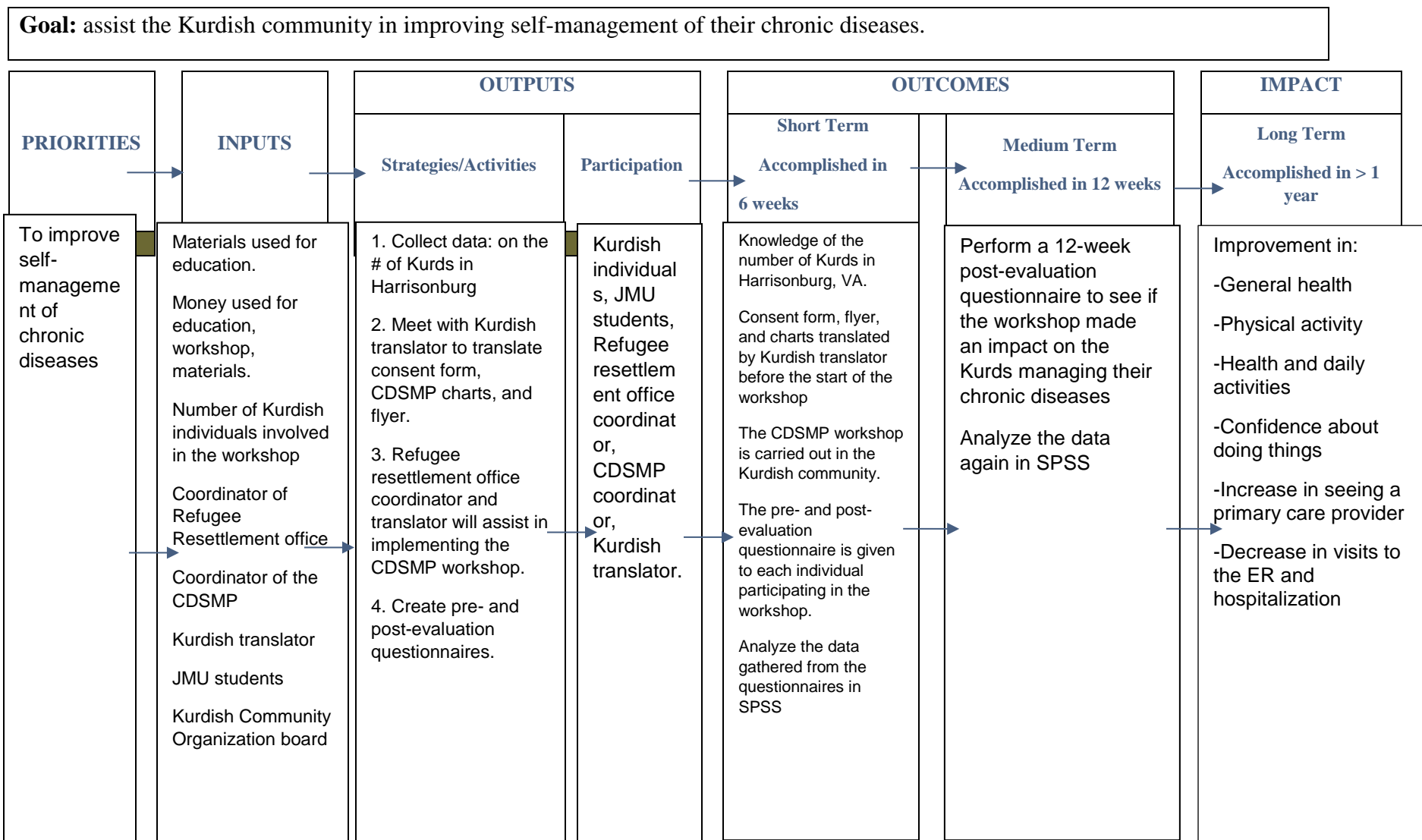
Figure 1. PRECEDE-PROCEED Model



**Appendix C.**

**Figure 2. Logic Model Framework**

- Problem: chronic diseases in a small community in a Mid-Atlantic state
- Setting: Kurdish population





## **Appendix D.**

### **Key Informant Interview Questions.**

**Name of Interviewer:** Chinor Fattahi

**Name of Key Informant:**

**Occupation:**

**Date of Interview:**

**Agency Affiliation:**

When and why was your organization built?

What services do you provide and what are your goals?

What population do you serve? Elderly? Families? Singles? Children?

What are the criteria for admittance?

How many individuals are served daily, weekly, monthly?

What health services are provided or needed?

What is your source of funding?

Are there groups of people with mutual concerns or health issues?

What do you see as the most common health problems of the people whom your organization helps?

Do you see a lot of Kurds with chronic diseases? If so, what type of chronic diseases do you see and is there a pattern?

Are there counselors or therapists to help people with specific problems, such as chronic diseases or mental health?

How has your organization responded to meet the needs of these individuals with chronic diseases?

Where do the Kurds go for their care? Do they go to the community health centers/Free Clinic?

Are they having difficulties accessing care, due to things like low socioeconomic status, cultural issues, or lack of insurance?

What do you see as the barriers or enabling factors to accessing care? For example, is there a strong family support or community funds?

What do you see as the solution to helping Kurds with chronic diseases/health issues?

Now that you have an overview of the CDSMP workshop, do you see any risks of retaliation against the women, whether from family or the community, who decide to participate in this workshop?

Is there anything else that you would like to tell me about the Kurds, especially Kurdish females, and chronic diseases that I did not address?

## Appendix E.

### Consent to Participate in Research

**Project Title:** Outcomes of Implementing the Chronic Disease Self-Management Program (CDSMP) in the Kurdish Community

#### Identification of Investigators

You are being asked to participate in this project study conducted by *Chinor Fattahi* under supervision of advisor, *Dr. Linda Hulton*, from James Madison University. Chinor Fattahi is a doctoral student and has an interest in assisting Kurdish individuals self-manage their chronic diseases. This project study will contribute to Chinor Fattahi's completion of her *Doctor of Nursing Practice Project*.

#### Purpose of Study

The purpose of this project is to plan, implement, and evaluate the Chronic Disease Self-Management Program workshop in a Kurdish population in the Harrisonburg community. The CDSMP is a workshop that helps you build self-confidence to self-manage your chronic disease. The workshop has been tested and evaluated for individuals with chronic diseases for the past 20 years. This workshop will aim to improve the participant's general health, physical activities, confidence level, communication with their providers, visits to the emergency department, and hospitalization.

#### Research Procedures

Should you decide to participate in this project study, once all your questions have been answered to your satisfaction, you will be asked to sign this consent form. You will be assisted to complete a written questionnaire today prior to starting the first CDSMP workshop, at the end of the six-week workshop, and then again at another six weeks after the workshop at your house. You will be asked to provide answers to a series of questions related to using self-management techniques to improve your chronic diseases.

#### Time Required

Participation in this study will require 2 ½ to 3 hours, once a week, for 6 weeks of your time, starting March 2018 through April 2018. The pre-and post-evaluation home visits will last between an estimated 30 minutes to 1 hour each visit.

#### Risks

The risk for participation in this study is minimal.

#### Benefits

Potential benefits from participating in this study include free education on managing your chronic diseases, increased confidence, and improved communication with your provider. You will receive free transportation to the workshop and back home, as well as childcare for your children if necessary. The major benefit is that you will be making a major contribution to the information gathered about the outcome of this workshop in the Kurdish population.

**Confidentiality**

The results of this study will be presented at chronic disease topic meetings, professional meetings, or conferences. The results of the project study will also be submitted in a professional journal. But your identity will not be presented. Data will be presented representing averages or generalizations about the responses as a whole. All data will be stored in a secure location accessible only to the researchers. Data will be kept until the project is finished, but no names will be attached to the data. Upon completion of the study, all information and answers of the participants will be destroyed.

**Participation & Withdrawal**

Your participation is entirely voluntary. You are free to choose not to participate. Should you choose to participate, you can withdraw at any time without consequences of any kind.

**Questions about the Study**

If you have any questions or concerns during the time of your participation in this project, or after its completion or you would like to receive a copy of the final results of this study, please contact:

Chinor Fattahi  
Family Nurse Practitioner  
James Madison University  
[fattahfx@dukes.jmu.edu](mailto:fattahfx@dukes.jmu.edu)  
(540) 810-9776

Dr. Linda Hulton (Advisor)  
School of Nursing  
James Madison University  
[Hultonlj@jmu.edu](mailto:Hultonlj@jmu.edu)  
(540) 568-6883

**Questions about Your Rights as a Research Subject**

Dr. David Cockley  
Chair, Institutional Review Board  
James Madison University  
(540) 568-2834  
[cocklede@jmu.edu](mailto:cocklede@jmu.edu)

**Giving of Consent**

I have read this consent form and I understand what is being requested of me as a participant in this study. I freely consent to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

---

Name of Participant (Printed)

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Name of Participant (Signed)

---

Date

---

Name of Researcher (Signed)

---

Date

**Appendix F.  
CDSMP QUESTIONNAIRE**

*You may use all or parts of the questionnaire at no charge without permission*

Stanford Patient Education Research Center

1000 Welch Road, Suite 204

Palo Alto CA 94304

723-7935 voice • (650) 725-9422 fax

<http://patienteducation.stanford.edu>

[self-management@stanford.edu](mailto:self-management@stanford.edu)

Identifier (ID) #: \_\_\_\_\_

Today's date: \_\_\_\_\_

Date of birth: \_\_\_\_\_

Sex (*circle*): Female    Male

<b>Background</b>	
1. Ethnic origin ( <i>check only one</i> ):	
<input type="checkbox"/> White not Hispanic	<input type="checkbox"/> Asian or Pacific Islander
<input type="checkbox"/> Black not Hispanic	<input type="checkbox"/> Filipino
<input type="checkbox"/> Hispanic	<input type="checkbox"/> American Indian/Alaskan Native
	<input type="checkbox"/> Other: _____

2. Please circle the **highest** year of school completed:

1 2 3 4 5 6	7 8 9 10 11 12	13 14 15 16	17 18 19 20 21 22	23+
<i>(primary)</i>	<i>(high school)</i>	<i>(college/university)</i>	<i>(graduate school)</i>	

3. Are you currently (*check only one*):

- |                                  |                                    |                                  |
|----------------------------------|------------------------------------|----------------------------------|
| <input type="checkbox"/> Married | <input type="checkbox"/> Separated | <input type="checkbox"/> Widowed |
| <input type="checkbox"/> Single  | <input type="checkbox"/> Divorce   |                                  |

4. Please indicate below which chronic condition(s) you have:

- Diabetes                                   Asthma                                   Emphysema or COPD
- Other lung disease *Type of lung disease:* \_\_\_\_\_
- Heart disease *Type of heart disease:* \_\_\_\_\_
- Arthritis or other rheumatic disease *Specify type:* \_\_\_\_\_
- Cancer *Type of cancer:* \_\_\_\_\_
- Other chronic condition *Specify:* \_\_\_\_\_

<b>General Health</b>
-----------------------

1. In general, would you say your health is:

*(Circle one)*

- Excellent ..... 1
- Very good..... 2
- Good..... 3
- Fair ..... 4
- Poor..... 5

<b>Health Distress: Symptoms</b>
----------------------------------

How much time during the **past 2 weeks...**

	None	A little	Some	A good	Most	All
	of the	of the	of the	bit of the	of the	of the
	time	time	time	time	time	time
1. Were you discouraged by your health problems? .....	0	1	2	3	4	5
2. Were you fearful about your future health? .....	0	1	2	3	4	5
3. Was your health a worry in your life?	0	1	2	3	4	5
4. Were you frustrated by your health problems? .....	0	1	2	3	4	5

**Physical Activities**

**During the past week**, even if it was not a typical week for you, how much **total** time (for the **entire week**) did you spend on each of the following? (Please circle **one** number for each question.)

	none	less than 30 min/wk	30-60 min/wk	1-3 hrs per week	more than 3 hrs/wk
1. Stretching or strengthening exercises (range of motion, using weights, etc.)	0	1	2	3	4
2. Walk for exercise .....	0	1	2	3	4
3. Swimming or aquatic exercise .....	0	1	2	3	4
4. Bicycling (including stationary exercise bikes).....	0	1	2	3	4
5. Other aerobic exercise equipment (Stairmaster, rowing, skiing machine, etc.) .....	0	1	2	3	4
6. Other aerobic exercise: <i>Specify</i> _____ .....	0	1	2	3	4

**Confidence About Doing Things**

For each of the following questions, please **circle** the number that corresponds with your **confidence** that you can do the tasks regularly at the present time.

**How confident are you that you can...**

Keep the fatigue caused by  
1.your \_\_\_\_\_

disease from interfering with  
the  
things you want to do?

not at all | | | | | | | | | | totally  
confident 1 2 3 4 5 6 7 8 9 10 confident

Keep the physical discomfort  
2.or

---

pain of your disease from  
inter- not at all | | | | | | | | | | totally  
fering with the things you  
want confident 1 2 3 4 5 6 7 8 9 10 confident  
to do?

Keep the emotional distress  
3.caused

---

by your disease from  
interfering not at all | | | | | | | | | | totally  
with the things you want to  
do? confident 1 2 3 4 5 6 7 8 9 10 confident

Keep any other symptoms or  
4.health

---

problems you have from  
interfering not at all | | | | | | | | | | totally  
with the things you want to  
do? confident 1 2 3 4 5 6 7 8 9 10 confident

**How confident are you that you can...**

Do the different tasks and  
5.activities

---

needed to manage your  
health not at all | | | | | | | | | | totally  
condition so as to reduce  
your confident 1 2 3 4 5 6 7 8 9 10 confident  
need to see a doctor?

Do things other than just  
6.taking

---

medication to reduce how  
much not at all | | | | | | | | | | totally  
your illness affects your  
confident 1 2 3 4 5 6 7 8 9 10 confident  
everyday life?

**Daily Activities**

During the **past 2 weeks**, how much... *(Circle one)*

	Not at all	Slightly	Moderately	Quite a bit	Almost Totally
Has your health interfered with your normal social activities with family, friends, neighbors or groups?	0	1	2	3	4
Has your health interfered with your hobbies or recreational activities?	0	1	2	3	4
3. Has your health interfered with your household chores?	0	1	2	3	4
4. Has your health interfered with your errands and shopping?	0	1	2	3	4

**Medical Care**

1. When you **visit your doctor**, how often do you do the following *(please circle one number for each question)*:

	Never	Almost never	Some- times	Fairly often	Very often	Always
a. Prepare a list of questions for your doctor	0	1	2	3	4	5
b. Ask questions about the things you want to know and things you don't understand about your treatment	0	1	2	3	4	5
c. Discuss any personal problems that may be related to your illness	0	1	2	3	4	5

2. **In the past 6 months**, how many times did you visit a physician?



*Do not include visits while in the hospital or the hospital emergency department...*

\_\_\_\_\_visits

**In the past 6 months**, how many times did you go to a **hospital** emergency  
3.department?

\_\_\_\_\_times

**In the past 6 months**, how many TIMES were you hospitalized for one night or  
4.longer?

\_\_\_\_\_times

a. How many total NIGHTS did you spend in the hospital **in the past 6  
months**?

\_\_\_\_\_nights

**Appendix G.**  
**CDSMP Satisfaction Survey Questionnaire**

The following information is collected to help ensure the quality of future workshops related to the self-management of chronic conditions.

**Date:** \_\_\_\_\_ **Workshop Location:** \_\_\_\_\_

**Participant I.D.** (first two letters of your first name, first two letters of your last name, last two numbers of your birth year): \_\_\_\_\_

**Leader Name:** \_\_\_\_\_ **Leader Name:**  
\_\_\_\_\_

1. Please circle the number that best matches how confident you are feeling.

After taking this workshop, I am more confident that I can manage my chronic condition(s).

Not at all confident    1   2   3   4   5   6   7   8   9   10    Totally confident

2. Please indicate how much you agree or disagree with the following statements:

	Strongly Agree	Agree	Disagree	Strongly Disagree
The leaders made me feel welcome and a part of the group.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The leaders shared teaching responsibilities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The leaders were prepared when they came to class.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The book that we used for the workshop was very helpful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I learned how to set an action plan and follow it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I now have a better understanding of how to manage the symptoms of my chronic health condition(s).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The workshop location worked well.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I felt my opinions and contributions to the group were valued by the other <b>participants</b> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The leaders worked effectively with the group.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt my opinions and contributions to the group were valued by the <b>leaders</b> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The leaders worked well together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I valued the time to talk to other participants at break time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I noticed that some participants did not come back to the workshop after the first week.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel more motivated to take care of my health since I took this workshop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I will use what I learned in the workshop in my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you have any suggestions for how the Live Well! workshop could be improved?

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What would you tell others who might be interested in participating in the program in the future?

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**THANK YOU FOR COMPLETING THE SURVEY**

**Appendix H.****Table 2. Baseline Demographic Variables**

<b>Demographic Variable</b>	<b>Total</b>
Mean years of Age (SD)	51 (11.1)
Gender: number female	11 (100%)
Ethnicity: Kurdish	11 (100%)
Education level	None: 4 out of 11 Primary (1-6 grade): 3 High school: 3 College (13-16 years): 1 Graduate School (17-22 years): 0
Marital Status	Married: 5 Separated: 1 Divorced: 2 Widowed: 3
Type of chronic disease	Diabetes: 4 out of 11 Lungs (asthma, COPD, other): 3 Heart disease: 0 Arthritis: 1 Cancer: 0 Other: 7

## Appendix I.

Table 3. Pre-Test, Post-Test Data of Outcome Measures Using Paired T-Tests

	<b>Baseline Mean (n=11)</b>	<b>6 weeks post- workshop Mean (n=8)</b>	<b>T value (p value)</b>	<b>12 weeks post- workshop Mean (n=7)</b>	<b>T value (p value)</b>
Health Status (↓= <b>Better</b> )	4.1429	2.7	4.245 (.004)	3.1429	2.291 (.062)
Health Distress Symptoms (↓= <b>Better</b> )	12.875	4.50	5.586 (.001)	5.4286	3.796 (.009)
Physical Activity (↑= <b>Better</b> )	2.125	2.625	-.837 (.430)	2.4286	-.891 (.407)
Self-Efficacy(SE) (↑= <b>Better</b> )	34.4286	40.4286	-1.342 (.228)	38.2857	-1.791 (.124)
Social/role activities limitations (↓= <b>Better</b> )	6.50	4.6250	1.000 (.351)	4.7143	1.583 (.164)
MedCare (communication with provider, ↑= <b>Better</b> )	10.1250	12.000	-2.813 (.026)	13.7143	-2.680 (.037)

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