OPEN ACCESS

GAVIN PUBLISHERS

International Journal of Nursing and Health Care Research

Martinez-Gómez V, et al. Int J Nurs Health Care Res 9: 1102.

DOI: 10.29011/2688-9501.101102

Research Article

Prevention Care Management Unit: Telephone Care Management to Improve Appointment Compliance along the South-Texas Mexico Border

Viviana Martinez-Gómez[1*], Glenda C. Walker[1], Mary Davis[2], Jorge L. Aviles[1], Amy Flynn[2], Seongkwan Cho[1]

[1]College of Nursing & Health Sciences, Texas A&M International University, Laredo, Texas, USA

[2]Health Resources in Action, Boston, Marathon, USA

[*]**Corresponding author:** Viviana Martinez-Gómez, Juntos for Better Health Project Director, Texas A&M International University, Canseco Hall 301, 5201 University, Blvd, Laredo, Texas 78040, USA. Tel: +1-9568575120; Email: vivmar1616@gmail.com

Citation: Martinez-Gómez V, Walker GC, Davis M, Aviles JL, Flynn A, et al. (2019) Prevention Care Management Unit: Telephone Care Management to Improve Appointment Compliance along the South-Texas Mexico Border. Int J Nurs Health Care Res 9: 1102. DOI: 10.29011/2688-9501.101102

Received Date: 03 July, 2019; **Accepted Date:** 24 September, 2019; **Published Date:** 30 September, 2019

Abstract

Healthcare disparities along the U.S. Mexico border present significant challenges to primary care providers. Addressing healthcare disparities requires intensive proactive interventions which support monitoring linkages to medical homes [1]. In the context of an increasingly fragmented behavioral and primary health care system, uninsured individuals living in poverty in the border region of southern Texas need specialized support to access health care services. Replicating the work done by Dietrich and colleagues who conducted a Randomized Controlled Trial (RCT) study to examine the effectiveness of the Dartmouth PCMU model on cancer screening compliance among low-income women [2], the Juntos project sought to answer the following question: Are diabetic patients who participated in the Preventive Care Management Unit (PCMU) intervention more compliant with the maintenance of appointments when compared to patients who did not participate in the intervention? The Juntos PCMU component modified the Darthmouth Protocol to include structured phone calls from a centralized call center. The Juntos evaluation contributes to our understanding of how to increase access to health care services and treatment compliance among those individuals with chronic illnesses who are non-compliant with treatment. The intervention was based on experimental and quasi-experimental evidence supporting improved compliance with treatment and health impact. The Juntos intervention is a combination of an adaptation of one model that has been validated in the scientific literature with a different population and the innovative Juntos model.

Keywords: Border Health; Call centers; Depression; Diabetes; Intervention; Low-income; Obesity; Prevention management units; Social determinants of health

Introduction

Healthcare disparities along the U.S. Mexico border present significant challenges to primary care providers. Healthcare disparities are related to social determinants such as educational level, socio-economic level, lack of health insurance, health insurance plans that limit the amount of service, irregular use of care, use of emergency room clinics without case management, legal barriers, lack of health care providers, and language and cultural barriers that limits access to healthcare providers. Addressing healthcare disparities requires intensive proactive interventions which support monitoring linkages to medical homes [1]. The majority of healthcare services provided to clients experiencing healthcare disparities are provided by qualified federal healthcare centers, local mental health authorities, city and county health departments, and local substance abuse agencies. In the context of an increasingly fragmented behavioral and primary health care system, uninsured individuals living in poverty in the border region of southern Texas need specialized support to access health care services.

In Webb County, Texas 95% of the population is Hispanic/ Latino of Mexican descent and nearly half (47%) of the population indicate they speak English less than "Very Well" [3]. In addition, 23% of residents in bordering Jim Hogg and 39% of Zapata residents are not able to speak English well. [3]. Poverty is pervasive along the state's southern border with Mexico, placing border residents at high risk for poor health status. According to the U.S. Census Bureau, 31% of Webb County, 14% of Jim Hogg, and 35% of Zapata County residents live below the federal poverty level, compared to the state average of 17.6% [3]. Webb County is home to more than 60 colonias, which are defined as unincorporated settlement of land along the Texas-Mexico border. Colonias often lack some of the most basic living necessities, such as drinking water and sewer systems, electricity, paved roads, and safe and sanitary housing [3]. Over 25,000 colonias residents rely on an episodic system of care depending on funding and strained social programs with limited capacity. Reports estimate that the primary care provider ratio is 2,945:1 in Webb County, 7,145:1 in Zapata County, and 2,625:1 in Jim Hogg County, whereas the state ratio is 1,893:1 [3]. The mental health provider ratio is 3,500:1 in Webb County, and there is no available data on mental health providers in Zapata and Jim Hogg County [4]. In addition, it is estimated that the uninsured population in the area ranges from 29% in Jim Hogg County to 36% in Webb County [5].

While the median age of this population is relatively young (28 years of age), residents of Webb, Zapata, and Jim Hogg counties face significant health issues associated with limited access to care: 31% of adults in Webb and Zapata County report a BMI ≥ 30 [4], and 30% of Jim Hogg residents are obese. Twenty-eight percent of residents in Zapata County are physically inactive, and 19% of residents in the area are classified as excessive drinkers [4]. Estimates of the proportion of residents with diabetes are significantly higher than the state of Texas as a whole. According to the Center for Disease Control and Prevention (CDC), adult diabetes prevalence has grown from 6.2% of the adult population in 1999 to 9.4% of the adult population in 2015. Diabetes is also considered an epidemic in the Juntos for Better Health service region. The 2015 Texas Department of State Health Services Health Facts profile shows the diabetes mortality in Webb County to be almost twice the rate of the State of Texas (38.0 per 100,000 v. 21.6 per 100,000).

South Texas experiences a high incidence of comorbidities (Co-occurring health issues that cross between mental and physical), making IBH a much-needed intervention. For example, the National Comorbidity Survey Replication found that 68% of adults with mental disorders also had medical disorders and 29% of adults with medical disorders also had mental disorders [6]. The depression rate in South Texas among Hispanic patients with Type 2 diabetes is 39% [7]. Laredo and surrounding communities have seen increasing cases of behavioral health (mental health, substance abuse, and domestic violence) with limited personnel and service-based resources [3]. The ratio of a psychiatrist to population in Webb County is 1:33,715 compared to 1: 13,029 statewide and 1: 12,941 nationally. Zapata and Jim Hogg counties have no psychiatrist. Webb, Zapata, and Jim Hogg Counties have all been Health Resources Service Administration (HRSA) designated Mental Health Provider shortage areas; with all of Jim Hogg and Zapata and portions of Webb County, also HRSA designated Primary Health Care Provider Shortage areas [8]. This article describes an innovative cost-effective method for monitoring appointment compliance in the underserved population of Webb, Zapata, and Jim Hogg counties along the South Texas-Mexico border.

Juntos for Better Health Project

Methodist Healthcare Ministries of South Texas (MHM) received a Social Innovation Grant in 2014 to address the epidemic problems of diabetes, depression, and obesity in fourteen South Texas Counties. MHM then developed a Request for Application (RFA) for agencies in South Texas to develop and submit proposals. Nine proposals funded by MHM used innovative strategies to address diabetes, depression, and obesity using the Integrated Behavioral Model (IBH). The Juntos for Better Health (Juntos) project out of Texas A&M International University, was funded through this RFA in 2016. The Meadows Foundation began funding the Juntos project in 2017; total funding for the Juntos project ranged from 3.4 million to 4.2 million dollars a year.

The primary goal of Juntos was to develop a coordinated and integrated health care network. Four partner agencies collaborated to provide a continuum of care beginning with health education for obesity, to management of chronic conditions (i.e., Diabetes and mental health). The agencies were made up of the Local Mental Health Authority (LMHA), the city health department, a federally Qualified Health Center (FQHC), and a local substance abuse agency. The proposal targeted primary, secondary, and tertiary care services related to diabetes and mental health issues. Juntos used a mutli-component approach to achieve the end goal, which is a coordinated and integrated system of health care, with one of the components being the Preventive Care Management Unit (PCMU).

PCMU Background

The Juntos PCMU replicated the work done by Dietrich and colleagues who conducted a Randomized Controlled Trial (RCT) study to examine the effectiveness of the Dartmouth PCMU model on cancer screening compliance in 11 community and migrant health centers in New York [2]. Dietrich and colleagues developed an intervention protocol which utilized multiple phone calls to inform patients who had missed scheduled cancer screenings about the need for the screenings and to identify barriers. The

evaluation sample included 696 women in the intervention group and 694 in the usual care group (99% and 98% of those consenting, respectively). According to [2], many of the participants had chronic diseases, with more than half being obese. In addition, over two thirds of women (68%) had been receiving care from their health centers. More than one third lived in Zip Codes with a median household income of less than $25,000, 39% lived in Zip Codes with a median income between $25,000 and $40,000, and 27% lived in Zip Codes with a median income greater than $40,000 [2].

The model utilized assigned an intervention group that would receive a series of telephone support calls from a trained prevention care manager. The case manager was monitored to ensure quality and consistency. In a similar fashion, patient navigators guided patients through the healthcare system during the cancer treatment, patient navigators facilitated the screening process for each patient by addressing barriers that prevented or delayed receipt of screenings. The mean number of contacts for participants contacted by the prevention case manager was 4 (range, 1 to 20 [SD, 2.7]). In addition, within a subsample of women whose calls were timed, initial calls averaged 17 minutes in length (range, 6 to 48 min [SD, 8.5]) and subsequent calls averaged 14 minutes (range, 1 to 62 min [SD, 8.8]).

The study found that a telephone-based intervention had a positive impact on screening rates for all three types of cancer screenings (colorectal, cervical, and breast). Rates for colorectal screening showed the largest increase, but changes in rates were clinically meaningful for all three. The findings from the Dietrich study suggests five important implications: (1) a modest intervention can increase screening rates in a predominate minority population, and this potentially saving lives through early detection and addresses health care disparities; (2) supports the effectiveness and practicality of telephone support for multiple screenings; (3) other needed support services, such as tobacco cessation, could be incorporated into telephone support to increase value and efficiency; (4) a centrally based telephone intervention could be integrated into care management infrastructures that are already established in other clinic practice settings; and (5) telephone care management could focus on prevention exclusively, or it could be integrated into established management programs for chronic conditions such as diabetes, asthma, and congestive heart failure.

Juntos PCMU

The primary purpose of the Juntos PCMU was to answer the following question:

- Are diabetic patients who participated in the PCMU intervention more compliant with the maintenance of appointments when compared to patients who did not participate in the intervention?

The Juntos PCMU component modified the Darthmouth Protocol to include structured phone calls from a centralized call center. A structured script was developed which was inputted into the call center software. The structured script allowed Special Program Aids (SPAs) to provide patients with information related to appointment date/time, clinic point of contact, and gather information regarding barriers that prevented the patient from keeping appointments. All SPAs participated in a two-week training of mock calls, concluding with an inter-rater reliability evaluation to assess voice skills, personality, and procedures. In addition, all SPAs were provided with training and a resource guide on community resources. Approval for the study was provided by the leading agency's Institutional Review Board (IRB), IRB# 2016-02-09.

The protocol for the PCMU intervention required three scripted phone calls leading to the scheduled appointment, beginning three weeks prior. In addition, those participants that remained non-compliant after having received the three phone calls, received a home-visit (If the patients consented to home-visit). The home-visit consisted of a face-to-face session to reinforce the importance of keeping appointments, provide clinic point of contact, and address barriers to keeping appointments. Home-visits were conducted by the Juntos Outreach Coordinator, Juntos Integrated Behavioral Health Coordinator, and City of Laredo Health Department case managers.

Methods

The efficacy of the intervention was tested through a randomized controlled trial. Detail of the trial are provided below.

Settings

Enrollment occurred at two clinics to ensure sufficient sample was enrolled. The target population were non-compliant diabetic patients from a Federally Qualified Health Center (FQHC) and the Local Mental Health Authority (LMHA). FQHCs centers provide comprehensive community-orientated primary care to over 12 million patients annually nation-wide [2]; while LMHA's in Texas provide behavioral and primary care services to over 2 million annually [8]. According to the Hoggs Foundation [8] both FQHCs and LMHAs provide services to underserved low-income individuals with primary care chronic conditions and mental health disorders. Initially, Juntos sought participation from the local FQHC anticipating their ability to provide sufficient patients for the study. It was later determined that a second clinic site would be necessary to provide sufficient patients to achieve statistical power for study analyses, at which point participation from the local LMHA was added to the study.

Participants

Recruitment

Patient navigators from each clinic site were responsible for

recruiting participants, conducting enrollment, and collecting data. A preliminary data search to identify participants with an A1C of 6.5 and over, in addition to having missed appointments to the primary care clinic over the past 12 months was conducted. Once identified participants were contacted by the patient navigators to invite them to participate in the study. The patient navigators explained the study and obtained written informed consent from patients who agreed to participate. Participants were compensated $50 for participating in the study [$10 - baseline, $20 mid-point, and $20 final data collection phase in the form lab vouchers and/or gift cards to a local grocery store.

Eligibility

Participants were eligible for the study if they were 18 years of age or older, resided in Webb, Zapata, or Jim Hogg Counties, had a clinical diagnosis of diabetes [an A1C of 6.5 or above (as defined by the 2016 American Diabetes Association guidelines)], and were non-compliant with their appointments at the time of enrollment (Compliance was defined as maintaining all follow-up appointment within 12 months prior to enrollment). Participants had to speak English, Spanish, or both. After written consent was obtained, participants were sent for lab work to determine their baseline A1C to confirm eligibility. For those participants having an A1C test within the past 30 days, the test results were used as baseline.

Design

Eligible participants were grouped by control or intervention using a randomization. Juntos staff used a SAS 9.4 Proc Plan for a block design to avoid the control and treatment groups being markedly different in size. Participants in the control group received the usual care non-compliant patient follow-up protocol at the clinic site from which the participant was recruited. The intervention group received PCMU protocols from trained SPAs involving a combination of the usual care non-compliant patient follow-up protocols and education, phone call, and home visits to re-engage patients in the physical and behavioral health care system and increase compliance with their appointments. During the phone call with a participant in the intervention group, the SPA provided the participant information regarding his/her upcoming appointment, information regarding the point of contact, collected barriers to keeping appointments, provided information on resources available, and answered questions about confirmed or rescheduled appointment dates. The SPAs provided motivational support, responding to participant's specific barriers to keeping appointments by using a structured script which was developed with input from the research team.

During subsequent phone calls, which continued over the course of 12 months or until the participant was removed from the study, SPAs continued to remind participants of upcoming appointments, collection of barriers, and motivational support to keep appointments. The SPAs responded to new and on-going barriers for missed appointments. Only clinicians, not SPAs or patient navigators were responsible for ordering lab work at both sites. Only patient navigators, not SPAs were responsible for recruiting, enrolling, and collecting data at both sites. This permitted SPAs to focus merely on the phone calls.

SPAs also scheduled home-visits for those participants who continued to remain non-compliant after having been successfully reminded about an upcoming appointment. Participants were contacted to obtain authorization to conduct the home-visit, confirm home address visit, scheduled the date and time the visit would occur. A home-visit form was developed which summarized previously collected background information related to the missed appointments and a pre-established point of contact.

Evaluation

The project's evaluator, Health Resources in Action (HRiA) conducted an implementation and impact study aimed at understanding how Juntos was implemented to assess program fidelity. The two methods utilized for the implementation study were: (a) qualitative data collection via key informant interviews, and (b) analysis of quantitative implementation data (i.e. patient visits, administrative data). The impact study examined the effectiveness of the intervention to improve patient outcome measures described below.

Quantitative Data Collection Methods and Analysis

Implementation data of patient participation in the PCMU intervention were analyzed. These mainly comprised of de-identified patient records from PCMU records that included information on intervention and control group participants' behavioral health and primary care visits.

Qualitative Data Collection Methods and Analysis

The goal of the interviews was to assess program fidelity and understand in greater depth the context, facilitators, and challenges to program implementation. Program fidelity was assessed with clinic personnel interviewees by asking questions about program implementation from a clinic staff, program, and organizational level. Interviews were conducted at mid-point of program implementation and end-point of program implementation with LMHA and FQHC staff as well as TAMIU staff. Trained interviewers conducted all interviews. Interviews were recorded and transcribed. two trained team members initially reviewed transcripts to develop a mutually-agreed upon codebook using a grounded theory approach. They then independently coded each transcript for themes using NVivo qualitative data analysis software (NVivo qualitative data analysis Software; QSR International Pty Ltd. Version 12) and met to discuss concordance and discordance

between their coding schemes. Differences were reconciled through discussion until a consensus on the first-level of coding was reached (Average kappa=0.62). Themes were identified by discussion frequency and intensity. Mid-point interviews were coded using NVivo software by one coder using detailed notes.

Description of Measures and Instruments

The following impact measures were included in this study. Physical measures included HbA1c level to measure blood glucose concentration [9], blood pressure to assess for hypertension [10] and body mass index (calculated from height and weight) Behavioral health measures included depressive symptoms assessed through the PHQ-9 instrument [11] and subjective evaluations of positive and negative aspects of life assessed through Duke Health Profile [12] quality of life assessment tool.

Statistical Analysis

Descriptive statistics for intervention and control group patient attendance at behavioral health and primary care visits were calculated, including the mean, median, and range of number of completed and missed visits. All analyses were conducted based on an intention-to-treat approach. The unit of analysis was the individual patient. Impact measures were treated as continuous variables. Generalized regression analysis results were presented as final results of the modeling sequence starting with bivariate models and ending with multiple regression models. These multiple regression models were adjusted for key demographic factors, covariates, and baseline impact measures identified as relevant via review of the scientific literature or found non-equivalent at baseline. The possibility of effect modification of the intervention-outcome relationship by patients' characteristics also was explored. Specifically, interaction terms of study group and baseline impact measures as well as age were included to understand whether there were differences in intervention effect by these characteristics. Stratified linear regression models were subsequently estimated for any model that found statistically significant effect modification. For one outcome, PHQ-9 score, additional mediation analyses were examined.

All analyses were performed with SAS version 9.4 (Cary, NC). PROC GLM was utilized for the primary linear regression models. The residual errors were determined to be normally distributed for all outcome measures and therefore the use of linear regression as our primary approach was suitable.

Results

The targeted number of participants recruited for the study was 365 per arm (e.g., intervention and control groups) totaling 730 participants. Most of the participants enrolled in the study were female (69.5%) and spoke Spanish as their primary language (75.4%) Almost all participants were Hispanic (97.9%) and over half had less than a high school education (58.0%) The average age across the study was 54.5 years. (Table 1) for participant demographics [13].

Measure	Full Sample (n=733)		Intervention (n=366)		Control (n=367)		p-value
	N	%	N	%	n	%	
Sex							
Male	223	30.5	112	30.6	111	30.3	0.94
Female	509	69.5	254	69.4	255	69.7	
Missing	1	--	--	--	1	--	
Ethnicity							
Hispanic/Latino	712	97.9	356	97.5	356	98.3	0.44
Non-Hispanic/Non-Latino	15	2.1	9	2.5	6	1.7	
Missing	6	--	1	--	5	--	
Age							
18-34	29	4	11	3	18	4.9	0.6
35-44	107	14.6	53	14.5	54	14.7	
45-54	214	29.2	112	30.6	102	27.8	
55-64	249	34	120	32.8	129	35.2	
65+	134	18.3	70	19.1	64	17.4	
Mean (SD)	54.5 (11.0)		54.9 (10.8)		54.1 (11.2)		0.32
Education							
Less than high school	419	58	211	58.8	208	57.3	0.69
High school or more	303	42	148	41.2	155	42.7	
Missing	11	--	7	--	4	--	
Primary Language							
English	130	17.7	63	17.2	67	18.3	0.06
Spanish	553	75.4	270	73.8	283	77.1	
Other	50	6.8	33	9	17	4.6	

Table 1: Participant Demographic Measures for Full Sample and by Intervention Group

Evaluation of the implementation of TAMIU's program shows that the program was implemented in alignment with the project logic model and that the project was implemented with moderate fidelity. TAMIU met the enrollment target for the study and exceeded the overall 12-month retention target (i.e. final sample was 286 total participants compared to a target of 255 participants.)

All participants enrolled in the intervention met study eligibility criteria, and all who remained in the study for the 12 months received the phone call intervention as designed including physical and behavioral health referrals and services. The participants in the intervention group received reminder calls in advance of upcoming primary care and behavioral health appointments in addition to usual care reminder procedures at the two clinics. PCMU staff placed more than 1500 reminder calls to participants, and less than half of these calls were completed to remind participants of upcoming appointments. The home-visit component of the intervention was not implemented as planned. Only 13 home visits were scheduled and eight of these were completed.

The effectiveness of the PCMU intervention on patient compliance with treatment can be examined by participant show rate to scheduled appointments, patient compliance with treatment by attending the last scheduled appointment, and through the impact analysis of the PCMU on the number of completed visits. Due to sequential implementation at the FQHC and LMHA clinics, data on show rates and compliance should be examined by clinics. FQHC intervention participants had higher show rates than control participants for all services, including behavioral health (52 versus 46%) and primary care (52 versus 50%). Among LMHA participants, the control group had higher show rates than intervention participants for behavioral health (73 versus 57%) and primary care (75 versus 59%) services. Regarding compliance, 60% of FQHC and 39% of LMHA intervention participants, who received a successful PCMU call, were compliant based on their last scheduled appointment. Among the control group, 62% of FQHC and 74% of LMHA participants were compliant as of their last scheduled appointment.

Further exploration of within clinic data shows that LMHA intervention participants received more visits but had lower show rates. Although the LMHA participants were balanced on outcome measures at baseline, it is plausible that LMHA intervention participants were scheduled for a greater number of behavioral health visits due to a higher need for care to address depression or other Severe or Persistent Mental Illness (SPMI) symptoms, which may also have resulted in lower show rates.

When controlling for baseline measures and other covariates, intervention participants did not have statistically significant improvement in the impact measures when compared to control participants at 12 months. Further, there were no significant differences at 12 months between intervention participants and control group participants on the exploratory variables of Quality of Life, Diastolic Blood Pressure, or BMI. Among participants who were obese at baseline, intervention participants BMI increased compared to control participants at 12 months. For the exploratory variable, PHQ-9, at 12 months' intervention participants had a statistically significant higher mean score, which was no longer significant when adding the mediating variable of number of behavioral health visits. Mediation analysis of the effect of the PCMU intervention indicated that there was a significant effect of the intervention on the number of primary care ($p = 0.001$) and behavioral health visits ($p < 0.001$). The intervention was associated, on average, with a greater number of behavioral health visits which mediated the intervention effect on PHQ-9 score.

Secondary Analysis

A secondary analysis performed by TAMIU was conducted to further analysis the difference in show rates by clinics. A series of chi-square tests for association between clinics and participants show rate was conducted. The secondary analysis began with looking at both combined clinics and by clinics and analyzing to compare outcomes based on: (a) group (i.e. control and intervention) and type of appointment (i.e. primary care, behavioral health, or other); (b) group (i.e. control and intervention) and type of appointment eliminating the other group to focus only on primary care and behavioral health appointments; (c) group (i.e. control and intervention) eliminating all appointment types; and (d) agency eliminating group (i.e. control and intervention) and appointment type.

Secondary analysis concurred with HRiA's findings that the FQHC intervention participants had higher show rates than control participants for all services, including behavioral health and primary care. Among the LMHA participants, the control group had higher show rates than intervention participants for behavioral health and primary care services. In addition, the secondary analysis shows that participants were more likely to comply with appointments at the FQHC versus the LMHA. When all categories were removed and analysis was conducted to review outcomes to compare clinics, it was found that participants regardless of the group were more likely to attend appointments at a primary care clinic (i.e. FQHC) than they are a behavioral health clinic (i.e. LMHA) (Table 2). A chi-square test for association was conducted between agency and show rate for patients. All expected cell frequencies were greater than five. There was a statistically significant association between agency and show rate for patients, $x^2(1) = 186.48$, $p < .001$ (Table 3).

	No Show		Show		Total
Study Arm	1647	22.40%	5692	77.60%	7339
Total	1647		5692		7339

Table 2: Study Arm - Both Agencies [without groups and without appointment types]

	No Show		Show		Total
LMHA	620	34.00%	1203	66.00%	1823
FQHC	1027	18.60%	4489	81.40%	5516
Total	1647		5692		7339

Table 3: Study Arm - By Agency [without groups and without appointment types]

Discussion

Contribution of The Study

The Juntos evaluation contributes to our understanding of how to increase access to health care services and treatment compliance among those individuals with chronic illnesses who are non-compliant with treatment. The intervention was based on experimental and quasi-experimental evidence supporting improved compliance with treatment and health impact. The Juntos intervention is a combination of an adaptation of one model that has been validated in the scientific literature with a different population and the innovative Juntos model. The effectiveness of the PCMU approach was tested in an experimental study conducted in 11 community and migrant health centers in New York [2]. Pursuing a moderate level of evidence with an RCT design was considered appropriate and feasible for the PCMU intervention program for the following reasons: (a) the Juntos partners implemented an evidence-based approach with a preliminary level of evidence, and (b) TAMIU and its partners had the experience and capacity to randomly assign patients into treatment and control groups with minimal contamination—making implementation of a randomized controlled study feasible.

Lessons Learned

This study provides insights into the implementation of a PCMU intervention to encourage compliance with recommended clinic visits among diabetics in an underserved population of Hispanic low-income residents. TAMIU implemented the PCMU at a FQHC and a LMHA. Intervention participants had a higher number of completed visits in the FQHC but not in the LMHA. Future research may wish to validate these findings and determine if a PCMU intervention implemented with higher fidelity or other methods will increase treatment compliance, particularly among persons with SPMI.

We found that the PCMU intervention calls led to a higher number of behavioral health and primary care visits among intervention participants when compared with treatment group participants. FQHC intervention patients had higher show rates than control group patients, but LMHA control group participants had higher show rates than intervention participants. Both study groups were statistically equivalent at baseline and we found no significant differences in impact measures at 12 months between intervention and control groups. Because there was moderate intervention implementation fidelity and impacting chronic disease measures, such as HbA1c, can take more than one year, these results are not surprising.

Study Limitations and Implications for Future Research

The most significant limitations to this study were the use of populations from two different clinics with protocols that needed pilot testing, the extended participant enrollment and data collection periods, and implementation of an intervention external to the actual clinic practice. The clinic populations differed in terms of behavioral health needs with one population having diagnosed Serious and Persistent Mental Illness (SPMI). Although, the pooled data from the two clinics did result in balanced intervention and control groups and sufficient statistical power, the SPMI sample appeared to have had much greater behavioral health needs that may have affected findings. Adding the second clinic population also extended the timeline for data collection which delayed qualitative implementation data collection. Implementation of the PCMU call center intervention outside of clinic practice did not clearly enhance clinic usual care.

Next Steps

The challenges and limitations faced by the PCMU implementation have been instrumental in guiding the current implementation of a telephone referral follow-up process, interagency appointment scheduling, and documentation across partner agencies as related to developing a coordinated care network among community partners. To sustain the network of care that participating Juntos agencies have established, the partners have engaged in a business planning model process.

Acknowledgements

The authors thank Methodist Healthcare Ministries of South Texas, Corporation for National & Community Service, The Meadows Foundation, and HRiA.

This project was supported in part by: Methodist Healthcare Ministries of South Texas, Inc. Corporation for National & Community Service and The Meadows Foundation

References

1. Adler NE, Cutler DM, Jonathan JE, Galea S, Glymour M, et al. (2016) Addressing social determinants of health and health disparities. National Academy of Medicine.
2. Dietrich AJ, Tobin JN, Cassells A, Robinson CM, Greene MA, et al. (2006) Telephone care management to improve cancer screening among low-income women: a randomized, controlled trial. Annals of Internal Medicine 144: 563-571.
3. United States Census Bureau (2014) ABCs demographic and housing estimates 2013.
4. University of Wisconsin Population Health Inst (2015) County health rankings 2015.
5. Cadena N (2012) Texas Healthcare Transformation and Quality Improvement Program: Regional Healthcare Partnership (RHP) PLAN.
6. Druss BG, Rohrbaugh RM, Levinson CM, Rosenheck RA (2001) Integrated medical care for patients with serious psychiatric illness: a randomized trial. Archives of General Psychiatry 58: 861-868.
7. Mier N, Bocanegra-Alonso A, Zhan D, Wang S, Stoltz S, et al. (2008) Clinical Depressive Symptoms and Diabetes in a Binational Border Population. Journal of the American Board of Family Medicine 21: 223-233.
8. Hogg Foundation for Mental Health (2018) A Guide to understanding mental health systems and services in Texas.
9. American Diabetes Association (2014) Standards of Medical Care in Diabetes-2014.
10. American Heart Association (2015) American Heart Association.
11. Kurt K, Robert SL (2002) The PHQ-9: A new depression diagnostic and severity measure. Psychiatric Annals 32: 509-515.
12. Center for Disease Control (2017) National Diabetes Statistics Report.
13. HRiA (2019) SIF Final Evaluation Report: Texas A&M International University.