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Title:

Benefits of a Mobile Health Clinic on Health Outcomes in an Underserved Community

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ACCEPTED

Session Title:

Research Poster Session 2 (Monday/Tuesday, 18 & 19 November)

Slot:

RSC PST2: Monday, 18 November 2019: 8:00 AM-8:45 AM

Abstract Describes:

Ongoing Work/Project

Applicable Category: Clinical, Researchers

Keywords: cultural context and care, minority populations and mobile health clinic

References:

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Abstract Summary:

The participants will learn about the potential impact of machismo and/or fatalism on improving one's health. Further, the participant will learn how a mobile health clinic can improve the health of underserved and uninsured populations in the community.

Content Outline:

I. Introduction

A. Geographic, financial, and social barriers have minimized access to care in traditional healthcare settings (Shi & Singh, 2014), particularly for minority populations (Luque et al, 2012).

B. Little empirical evidence is available to quantify the positive health outcomes resulting from flexible health services (ie, mobile clinic) within a community context.

II. Methods

A. The proposed case-control study used a prospective, longitudinal design that incorporates both time-series and survival data.

B. The target population includes a convenience sample of clients with pre-diabetes, diabetes, and hypertension, receiving primary care services through the mobile health clinic.

III. Results

A. Current sample size of this program evaluation is 219 patients

1. Average age of 44.95 (SD = 13.63)

2. Primarily female (79.9%)

3. Identifying as Hispanic or Latino (84%).

B. Health behaviors outcomes

1. Patients who were new on the van had statistically significantly lower number of preventive cancer screenings compared to those not new to the van

2. Patients who were not new to the van reported paying significantly more attention to their carbohydrate intake

IV. Discussion

A. There have been few systematic, longitudinal evaluations of the impact of mobile health clinics on patient health outcomes, healthcare cost, and promoting preventative healthcare

B. Our study shows evidence that quality outcomes may depend upon the cultural attributes of patients, in particular high machismo was linked with significantly lowered improvement in A1C over time

Topic Selection:

Research Poster Session 2 (Monday/Tuesday, 18 & 19 November) (26152)

Abstract Text:

Geographic, financial, and social barriers have minimized access to care in traditional healthcare settings (Shi & Singh, 2014), particularly for minority populations (Luque et al, 2012). An estimated 2,000 communities across the United States have implemented mobile health clinics (MHCs) as a high-quality, low-cost, non-traditional healthcare strategy aimed at helping vulnerable populations overcome these barriers (Hill et al., 2014; Vavasis et al., 2016). Despite the large number of MHCs, few have funding to support program evaluation, research, and dissemination of best practices. In the few cases where research is available, results suggest that MHCs are most valuable for delivering healthcare within communities limited by location (Sarnquist, 2011), cost (Nayyar & Hwang, 2015), diverse language, and cultural worldviews (Luque & Castañeda, 2013). For example, MHC services are most beneficial for

communities comprised of Spanish-speaking, born outside of the US, Latino residents (Luque et al., 2012). However, there are specific cultural barriers that may prevent Latino residents from using MHCs, particularly the constructs of fatalism (Shelton et al., 2011) and machismo (Getrich et al., 2012).

Little empirical evidence is available to quantify the positive health outcomes resulting from such flexible health services within a community context. There is even less research focused on the impact of MHCs serving a primarily Latino population. The current study aims to fill the gap in scientific knowledge by providing a program evaluation of Sentara Healthcare's Family Health Connection (FHC), a two-van MHC, serving minority populations outside Washington, D.C. The current study also examines health quality outcomes, utilization outcomes, and cost outcomes. Study results aim to inform best practices and future research. Additionally, cultural aspects of care, to include fatalism and machismo, are explored.

Methods

The proposed case-control study used a prospective, longitudinal design that incorporates both time-series and survival data. The target population includes a convenience sample of clients with pre-diabetes, diabetes, and hypertension, receiving primary care services through the FHC. The FHC includes two community-based mobile van clinics staffed with a family nurse practitioner (FNP) and a bilingual certified medical assistant. Services are provided at a minimum of seven different community sites several days each week. Objective health data are collected via Sentara Healthcare's electronic medical record (EPIC), billing system, and Glucocard (arkcare.net). Self-reported fatalism and machismo data are collected via surveys.

This study has been approved by the Institutional Review Board on record and all its participants complete a comprehensive informed consent prior to enrollment. Services on the van are not dependent upon study enrollment.

Measures

Study data elements include demographic variables (i.e. age, gender, ethnicity), quality outcomes (i.e. HgbA1c, blood pressure, preventative care screenings), utilization outcomes (i.e. ED visits, hospital readmissions), cost outcomes, and cultural attributes (i.e. fatalism, machismo). Number of appointments made vs. number of appointments kept is used to calculate client engagement. We use a researcher-developed 5-item Likert-type questionnaire to quantify patient health behaviors. In addition, we use two valid and reliable tools to assess machismo and fatalism. The Machismo Scale (Neff, 2001) is a 13-item Likert-type scale ranging from 1-Strongly Disagree to 5-Strongly Agree, with higher scores indicative of more machismo. The Powe (1994) Fatalism Inventory is a 15-item true/false scale, with higher scores indicative of more fatalism.

Analytic Strategy

Descriptive statistics are used to evaluate program targets (i.e. increased referral to early pre-diabetes education; HbA1c < 8.0%; blood pressure of ≤ 120/80 mmHg; frequency of cancer screenings; improvement of health services utilization). Inferential statistics such as independent samples t-test and Pearson's chi-square test were used for between-subjects examinations, while analysis of covariance (ANCOVA) was used for within-subjects examination.

Results

The current sample size of this program evaluation is 219 patients with an average age of 44.95 (SD = 13.63), primarily female (79.9%) and identifying as Hispanic or Latino (84%). Preliminary results showed that patients who were new on the van had statistically significantly lower number of preventive cancer screenings (M = 2.64, SD = 3.246) compared to those not new to the van (M = 3.69, SD = 3.101), t (210) = -2.201, p = .029, with new patients having higher treatment charges (M = $441.10, SD = $384.265) compared to those not new to the van (M = 320.56, SD = 277.12), t (204) = 2.514, p = .013. In addition, patients who were not new to the van reported paying significantly more attention to their carbohydrate intake t (204) = 2.514, p = .013, checking their blood sugar more regularly t (204) = 2.514, p = .013, checking their blood pressure more regularly t (204) = 2.514, p = .013, and checking their feet more frequently t (204) = 2.514, p = .013. Overall, the average HgbA1C, and fatalism and machismo ratings for those new vs. not new to the van were not statistically significantly different. However, when controlling for baseline HgbA1C, the decrease in HgbA1C from baseline to post enrollment HgbA1C was statistically significantly lower for male Hispanic patients with below average machismo (Average Post HgbA1C = 6.215) compared to above average machismo (Average Post HgbA1C = 6.906), F(17) = 5.507, p = .031, partial eta^2 = .245. Due to the low sample of patients who were readmitted to the hospital within 30 and 90 days, or had an ED visit within 30 and 90 days, utilization outcomes could not be examined.

Discussion

Despite their importance, there have been few systematic, longitudinal evaluations of the impact of MHCs on patient health outcomes, healthcare cost and promoting preventative healthcare (Hill et al, 2014). Such program evaluation research is needed as it has the potential to estimate unmet needs, increase program visibility, provide empirical evidence to maintain and improve quality, identify unexpected negative outcomes, and ultimately impact future funding (i.e. sustainability) for MHCs (Posavac, 2015). The current study contributes to the field of scientific knowledge and clinical best practices by providing empirical evidence that continuous engagement with the FHC program leads to significantly better quality outcomes and cost of care. Importantly, our study shows evidence that quality outcomes may depend upon the cultural attributes of patients, in particular high machismo was linked with significantly lowered improvement in A1C over time.