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Lessons learned from a feasibility study delivered in two WIC sites to promote physical activity among pregnant Latinas

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Abstract

Objective—To assess the feasibility, including demand for and acceptability of a physical activity (PA) intervention among pregnant Latinas recruited at the Women, Infants and Children Nutrition Supplementation Program (WIC).

Methods—Women <20 weeks gestation and self-reporting <150 minutes of PA/week were recruited from 2 WIC locations in Southern California. The 9-week, *promotora*-led intervention included 1-hour sessions and 2 walking groups/week.

Results—WIC was supportive of the use of recruitment, intervention, and evaluation activities. Of an estimated pool of 525 women <20 weeks gestation, 141 expressed interest, 108 were screened for eligibility, and 21 were enrolled. Of 21 enrolled, 12 completed the post-intervention assessment (7 participant group, 5 non-participant group).

Conclusions and implications—Demand and acceptability will need to be improved before this intervention can be considered feasible, potentially by extending eligibility and improving access to intervention.

Keywords

Hispanic Americans; Exercise; Pregnancy; Community Health Services

INTRODUCTION

The American College of Obstetricians and Gynecologists (ACOG) recommends at least 20-30 minutes of moderate exercise most days of the week for pregnant women without

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medical/obstetric complications.¹ However, pregnant Latinas are 40% less likely to meet these recommendations² and engage in fewer moderate-to-vigorous physical activity (PA) minutes than non-Latina white women.³ Potential reasons for this disparity include the fear of harming the baby (typically learned from female family members⁴), and receiving insufficient information regarding PA safety during pregnancy.^{5,6} Low socioeconomic status is another risk factor for inactivity during pregnancy.⁷ In their review, Gaston & Cramp found that lower levels of education and household income were consistently associated with less exercise during pregnancy, potentially due to limited resources and/or awareness of PA benefits.⁷ The literature on the unique barriers to PA among pregnant Latinas of low socioeconomic status suggest a need for interventions designed to address these challenges.

Interventions designed for Latinas have typically used clinical sites for recruitment and intervention activities.⁸⁻¹¹ Community sites may be overlooked, yet potentially valuable partners in efforts to promote PA. One potential community partner is the federally-funded Women, Infants and Children Supplemental Nutrition Program (WIC), which provides breastfeeding support, vouchers to purchase healthy foods, healthcare referrals, and nutrition education to low-income women during pregnancy through 1 year following birth and to children from birth to 5 years of age who are at nutritional risk. The contact between WIC participants and WIC can last years and overlap multiple pregnancies, compared to the shorter duration of contact between pregnant women and prenatal clinics. Therefore, partnering with WIC could provide an opportunity for longer contact with greater potential impact on behavior.

Before a community-based intervention can be implemented and tested for efficacy, feasibility studies must be conducted to ensure that the intervention is appropriate for further testing.¹² The objectives of this feasibility study were to examine feasibility of partnering with WIC and the demand for and acceptability of an intervention to increase PA during pregnancy delivered in a WIC setting.¹² Findings from the current study can inform future studies partnering with WIC in the promotion of PA.

METHODS

Study design

The original study design included randomization to either intervention or control groups to also provide initial evidence of possible efficacy of the intervention on PA levels. Out of necessity as recruitment became challenging, the design was altered and the women who were invited to participate but did not attend the intervention (non-participating group) were compared to the intervention group. The choice to retain a non-participating group provided additional insight into feasibility components of interest including demand and acceptability.

Participants and recruitment

The intervention took place in 2 WIC sites in San Diego County located in predominantly Latino neighborhoods. Eighty-two to 91% of WIC participants identify as Latino at these sites. Participants were eligible if they a) were <20 weeks gestation, b) had a singleton pregnancy, c) were 18-40 years old, d) lived within a 15-minute drive from their local WIC

office to reduce transportation barriers, and e) were willing/able to attend the intervention's weekly sessions. Women were excluded if they a) had a health condition precluding PA, b) were smokers, c) had a pre-pregnancy BMI ≥ 40 , or d) reported meeting ACOG recommendations for PA (≥ 150 minutes of MVPA per week). Self-reported leisure-time PA was assessed by a 2-question assessment¹³ and the Stanford Brief Activity Survey of leisure-time activity (SBAS),¹⁴ both previously used to screen Latina women for a PA intervention.¹⁵ Physician approval using the PARmed-X for Pregnancy health screening¹⁶ was required prior to enrollment.

Recruitment was conducted from July-December 2014, primarily through person-to-person contact in the WIC reception area. Bilingual and bicultural Research Assistants (RAs) approached all adult women in the reception area and described the research opportunity, regardless of pregnancy status (unknown to the RAs). Fliers were also mailed to pregnant WIC participants <20 weeks gestation each month during the recruitment period and announcements were made to new WIC participants at their WIC enrollment classes.

RAs read aloud the informed consent form to each potential participant in a private space and invited women to ask questions before providing written consent. Women were notified that their decision to participate in the study would not affect their WIC benefits and that the program was being offered independent of WIC services. The Institutional Review Board of San Diego State University approved all study protocols.

Intervention

The intervention setting and approach was selected based on formative research among pregnant and postpartum Latinas and WIC staff. A focus group was conducted with 7 pregnant women and one-on-one interviews with 2 pregnant women and 6 postpartum women from local prenatal clinics. Three one-on-one interviews and 1 group discussion with WIC staff were conducted regarding intended study procedures. Latinas reported that family/peer encouragement for PA during pregnancy was uncommon and family members cautioned women against overexertion. Most women said they wanted exercise classes that were conveniently located in their communities, free of charge, and that provided childcare. WIC staff agreed that the education they delivered to pregnant women emphasized healthy diet relative to PA. Staff believed WIC would be an ideal location for a PA intervention given WIC's mission to support the health of low-income women, infants, and children.

The intervention was developed by the first and last authors and approved by the coauthors, E.A. and J.N., who have extensive experience designing PA interventions.^{15,17,18} In brief, the intervention was delivered by 2 trained, bilingual and bicultural Latina *promotoras* (lay health workers) in weekly, 1-hour sessions in a group setting at WIC. Most of the 12 sessions consisted of a) education/discussion (e.g., addressing myths around PA during pregnancy, b) PA (e.g., stretching, aerobic dance), and c) goal- setting/reviewing using a Fitbit Zip[®] to track activity. To avoid the need for internet access, participants were encouraged to view their daily metrics directly on the device's screen. At the conclusion of the study, participants were able to keep the Fitbit devices. *Promotoras* also offered 2 optional weekly 45-minute walking groups at a local park.

Evaluation

Outcomes of importance to feasibility studies and most relevant to the current study included the partnership with WIC, and intervention demand and acceptability.^{12,19,20} The feasibility of partnering with WIC for recruitment, measurement, and intervention activities was evaluated relative to facilitators and challenges to full participation in the study. Demand for the intervention was assessed by documenting recruitment and eligibility. Acceptability of the intervention was indicated by enrollment (acceptance of the invitation to participate upon determination of eligibility), participation in the intervention activities, documented by *promotoras*, and participant-identified acceptability of the program, collected by RAs post-intervention. Participants selected from a list of common reasons for attending that has been used by the research team in previous studies with Latinas¹⁵ (e.g., “to see my friends/meet other women”), benefits of attending (e.g., “increased strength”), and common barriers to attending the program (e.g., “fear of injury”). Participants also had the option to add other reasons, benefits, and barriers that were not listed.

RESULTS

Feasibility of partnering with WIC

The partnership between a local WIC agency of San Diego County and the study team began in the early stages of study development with frequent meetings to discuss the study approach. During the development and implementation phases, the third author, K.M. provided guidance regarding WIC agency requirements. For example, although the intervention was designed for Latinas, recruitment was open to women from any racial/ethnic background because of WIC’s policy to address the needs of all WIC participants regardless of ethnicity. Another important consideration for WIC was that the study did not interfere with WIC activities. Therefore, the intervention’s weekly sessions took place during the lunch hour at WIC when the education room was not in use. During recruitment, WIC assisted with mailing fliers to potential participants and alerted student WIC volunteers to the opportunity of joining the research team to assist with recruitment. In addition to assisting the research team with aspects of recruitment and providing space for the intervention, WIC also provided private space for evaluation activities.

Demand for intervention: recruitment and eligibility

A monthly average of 150 pregnant WIC participants <20 weeks gestation attended appointments at the 2 WIC sites, of which about half were new enrollees and half were ongoing, resulting in a potential enrollment pool of approximately 525 women over the 6 months of recruitment. RAs distributed 1,276 fliers to women in WIC waiting rooms (pregnancy status was unknown to RAs), resulting in 7% of women approached providing contact information. Of 462 pregnant WIC participants who were mailed fliers to of early gestation, 10% contacted researchers. Finally, 226 fliers were included in WIC enrollment packets delivered during the WIC enrollment classes. Although a total 1,964 fliers were distributed, and 141 women expressed interest in the program, it is difficult to estimate a specific success rate based on total flyer distribution as women likely received multiple copies of the flyer over the course of the recruitment period. Based on the estimated number of pregnant women (<20 weeks gestation) who attended either of the WIC sites over the 6-

month recruitment period, an estimate of demand indicated by the recruitment rate can be calculated as approximately 26.8% (141/525). Out of the 141 pregnant women recruited, 108 were successfully contacted and screened. Twenty-five women declined to be screened when contacted and 8 were un-reachable. Of those screened, 87 did not meet eligibility criteria, resulting in an eligibility rate of 19.4% (21/108). The most common reason for ineligibility was self-reporting < 150 minutes of MVPA per week (n=39; Figure 1).

Acceptability of the intervention: enrollment, participation, and participant acceptability

Of the 141 women recruited, 21 or 14.9% were enrolled. Twenty women could not enroll because they were unable/unwilling to attend the intervention during the pre-determined day/time. Of those enrolled, another 4 were lost before beginning the intervention. Of the remaining enrolled group, 8 women participated in the study intervention, although 1 dropped out due to an unrelated medical condition. The remaining 9 who were enrolled did not attend the intervention, and 4 of these did not complete the post-intervention assessment. Of the 12 with pre and post assessments, 7 women attended the weekly sessions (intervention group) and 5 women did not attend any intervention activities (non-participating group). Except for 1 intervention group participant, all participants were Latina. In contrast to the non-participating group, women in the intervention group were further along in their pregnancy and more were unmarried, employed, had a household monthly income >\$1,500, and were born in Mexico (Table 1).

Except for 1 participant, all women in the intervention group attended at least 7 out of the 9 sessions. Adherence to walking groups was low with 3 out of 7 women attending at least 1 walking group. Women reported that the most important reasons for attending the intervention were to obtain information about PA and to prevent excessive weight gain during pregnancy. The most frequently reported benefit from attending the intervention was receiving more support for PA. Barriers to attending the intervention included time conflicts with medical appointments or work, and childcare responsibilities that could not be addressed with the onsite care (e.g., caring for others' children).

DISCUSSION

This feasibility study identified several important factors to consider when implementing a PA intervention in a WIC setting and among a sample of low-income, pregnant, and predominantly Latina women. Although the study did not prove to be feasible in two of the three characteristics examined (demand for and acceptability of a PA intervention to increase PA during pregnancy), the feasibility of partnering with WIC was demonstrated by the close alignment between the mission of WIC to ensure the healthy development of women and children and the goals of PA interventions to promote health through active lifestyles. WIC's enthusiasm and willingness to support the efforts of this intervention facilitated the recruitment, implementation, and evaluation of this feasibility study, enabling examination of demand for and acceptability of the intervention.

Although the health of pregnant women is a critical area of research, recruiting them into research studies presents challenges to many investigators.^{21,22} Demand, exhibited by recruitment can be especially difficult among low-income, pregnant Latinas. Consistent with

other studies,^{11, 23} only 14.9% of those expressing interest at recruitment (n=141), were enrolled. Difficulty with enrollment is not limited to US samples. In an intervention to promote healthy eating and PA among inner-city pregnant women in the UK, researchers screened 8,820 women but only enrolled 18% of those screened for eligibility.²⁴ These studies illustrate the need for developing strategies that attract and retain low-income and minority pregnant women to participate in PA interventions.

Recruitment success of the intervention may have been reduced by 2 eligibility criteria applied in this study. First, the criterion to be inactive (<150 minutes of MVPA) significantly reduced enrollment (n=39). Without this criterion, the recruitment rate would have been 55.9% ((39+21)/108) rather than the reported recruitment rate of 19.4% (21/108). The eligibility criterion to be inactive may be unnecessary given the benefits of PA to all pregnant women.²⁷⁻²⁹ A second potentially limiting eligibility criterion was that women to be able/willing to attend the intervention on pre-specified days and times. Providing more opportunities to be physically active (e.g., more days and times) may have increased acceptability of the intervention.

Including more strategies for engaging and delivering the intervention besides needing to attend intervention activities in person may have also increased demand for and acceptability for the intervention. Some WIC agencies have successfully piloted the use of technology that allow individuals to “join” WIC classes remotely rather than attend in person.³⁰ A recent internet-based weight-loss intervention with postpartum WIC participants showed greater weight loss and higher rates of returning to pre-pregnancy weight in the intervention versus control group.³¹ In addition to “remote” attendance, these strategies that lead to additional contact, prompting, and support among WIC participants show promise.³⁰ The use of technology can be used as a complement to a *promotora*-led intervention or may be offered separately.

Additionally, with regard to intervention acceptability, it has been suggested that increasing PA during pregnancy can be more difficult to initiate and maintain.²⁶ It may be worthwhile to consider expanding beyond a focus on the pregnancy period for increasing PA, to include the first year postpartum. This could be especially relevant for recruitment within the WIC population because women can continue to receive WIC services for a year following birth. Expanding the timeframe to engage study participants allows additional time to build trusting and supportive relationships between participants and program staff.

In summary, improvements to recruitment, eligibility, enrollment, and full study participation are likely to be achieved by broadening the inclusion criteria to women of all activity levels who are pregnant or within 12 month period following birth (timeframe referred to as “postpartum” in WIC). In addition to modification of eligibility criterion and offering more opportunities to participate in PA classes, promising strategies for improving recruitment and retention have been identified in the literature^{21,22} and could be considered: (a) engage clinical providers in the recruitment process, for example partner with community health clinics and providers near the WIC locations, (b) as previously mentioned, consider technology-based strategies to overcome time limitations as a barrier to

participation, (c) build trust between participants and the research team, and (d) involve family members in the study to enhance the social support available to the participants.

Limitations

As reported and discussed, the challenges to recruitment and limitations imposed by study participant selection criteria and in-person design of the intervention resulted in a small sample size and loss of randomization in assignment to intervention and comparison control groups. These limitations resulted in an inability to examine differences in the effect of the intervention on the study groups. Although these are significant limitations, the challenges experienced in this study and suggestions for improvement offer important insight for researchers recruiting pregnant women into PA interventions.

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IMPLICATIONS FOR RESEARCH AND PRACTICE

This feasibility study illustrated the potential for successful partnership between researchers and WIC sites to promote PA among pregnant women. However, important components of feasibility including demand for and acceptability of a PA intervention indicated by success of recruitment and retention require additional development to improve success.

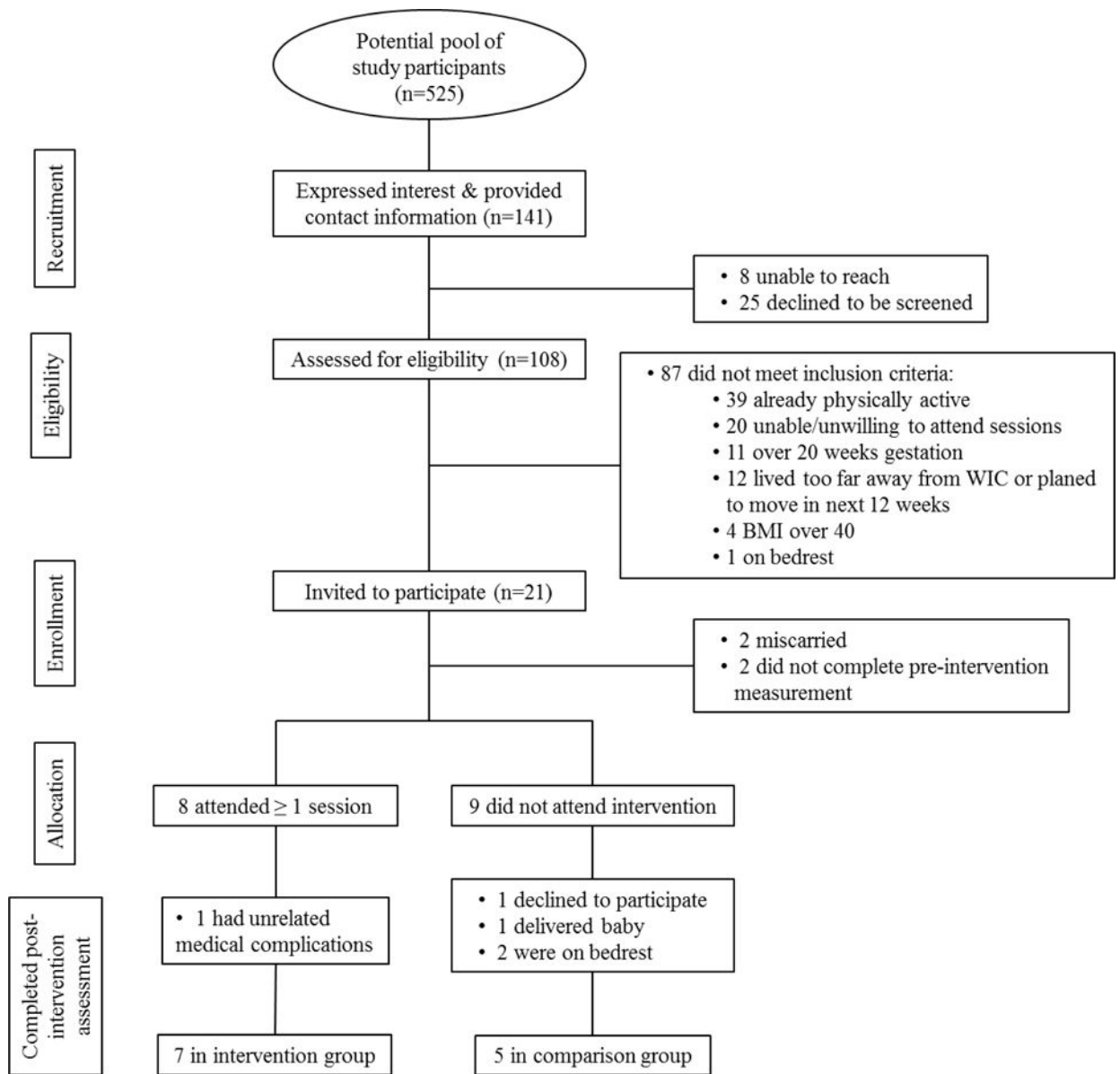


Figure 1.
Flow diagram: Description of participant recruitment and retention

Table 1

Participant Characteristics at Baseline (N=12)

	% (n) or Mean \pm SD		
	Intervention (n=7)	Non-Participants (n=5)	Total (N=12)
Mean weeks gestation at baseline	17 \pm 5	14 \pm 6	16 \pm 5
Age in years	26 \pm 4	27 \pm 6	27 \pm 5
Married or living with partner	57 (4)	100 (5)	75 (9)
Employed	29 (2)	0 (0)	18 (2)
< High school/GED education	29 (2)	60 (3)	42 (5)
Household monthly income <\$1,500	57 (4)	40 (2)	50 (6)
Children in the household	2 \pm 1	1 \pm 1	2 \pm 1
Latina/Hispanic	86 (6)	100 (5)	92 (11)
Born in Mexico	57 (4)	40 (2)	50 (6)
Pre-pregnancy BMI (self-report)	27 \pm 6	27 \pm 6	27 \pm 6
Parity			
0	14 (1)	(20) 1	17 (2)
1	86 (4)	80 (6)	83 (10)

Note: Not all participants provided responses for all demographics