Published in final edited form as:

Health Educ Behav. 2017 June ; 44(3): 431–438. doi:10.1177/1090198116669802.

Associations of Acculturation With Self-Report and Objective Physical Activity and Sedentary Behaviors Among Latinas

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Abstract

Background—Less than 50% of Latinas meet physical activity (PA) recommendations. Acculturation is a complex cultural phenomenon that may influence health behaviors, but associations between acculturation and Latinas' activity and sedentary levels are unclear.

Aim—To examine associations of acculturation with Latinas' domain-specific and total PA as well as sedentary time.

Method—We analyzed baseline data collected between 2011 and 2013 among 410 Latinas (18–65 years) from a PA promotion intervention in San Diego, CA (*Fe en Acción/Faith in Action*). Participants wore an accelerometer to assess moderate-to-vigorous PA (MVPA) and sedentary time and completed a survey assessing domain-specific PA, sociodemographics, and acculturation as measured by length of residence in the United States and the Bidimensional Acculturation Scale (BAS) for Hispanics. Higher acculturation was defined as longer residence in the United States or being either assimilated or bicultural as per scores on the Hispanic and Anglo domains of the BAS.

Results—Based on weekly averages from the accelerometer, Latinas spent 103 minutes in MVPA and 76% of total activity in sedentary time. Only 32% met MVPA recommendations via self-reported leisure-time and transportation PA. Longer residence in the United States was inversely associated with reporting any transportation or occupational PA and meeting MVPA recommendations. Assimilated/bicultural Latinas had significantly less accelerometer-based total MVPA and higher sedentary time than their lower acculturated counterparts.

Conclusions—Overall, higher acculturation, based on either measure, was related to less activity. Our findings suggest interventions tailored to the acculturation levels of Latinas are needed to help reduce disparities in Latinas' PA and sedentary behaviors.

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Keywords

accelerometer; acculturation; Latina; physical activity; sedentary behavior

Latina women face high rates of obesity and chronic diseases, driven in part by their low levels of physical activity (PA; Ogden, Carroll, Kit, & Flegal, 2013; Vega, Rodriguez, & Gruskin, 2009). Nationally, only 36% of Latinas compared with 46% of non-Latina White women meet PA recommendations for health (U.S. Department of Health and Human Services, 2008). Although the Latina population is heterogeneous, across subgroups of nationalities, most of their activity is accrued through work (Arredondo et al., 2016). Mexican women, for example, report three times more occupational PA than leisure-time PA (Arredondo et al., 2016). In spite of their occupational PA, when examining total PA as measured by accelerometer, Latinas accrue only about 19 minutes/day of moderate-to-vigorous PA (MVPA), 11 minutes/day less than Latino men (Arredondo et al., 2016). National data also show that, compared with Latino men, Latinas' accelerometer-based PA is lower across all age groups (Troiano et al., 2008). Latinas' lower PA levels can be explained by individual, sociocultural, and environmental factors (Sallis, Owen, & Fisher, 2008). Of these factors, the influence of the sociocultural construct acculturation on Latinas' PA remains the least understood (Benitez, Dodgson, Coe, & Keller, 2016).

In 2014, there were approximately 19 million Latina adults living in the United States, of which 48% were foreign-born (U.S. Census Bureau, 2014). Latinas share the same Spanish language and many cultural values, but health disparities exist among Latinas such as higher obesity rates among those living in the United States for longer duration (Wolin, Colangelo, Chiu, & Gapstur, 2009). Therefore, it is important to understand how acculturation influences obesity-related health behaviors such as PA among Latinas in the United States.

Although the concept of acculturation has been widely used in public health research, inconsistencies exist in how researchers define it. On the one hand, unidimensional models of acculturation posit that adoption of a new culture—including cultural attitudes, beliefs, and values—follows departure from one's culture of origin (Cabassa, 2003). On the other hand, bidimensional models conceptualize orientation to the original and new culture as independent dimensions of the acculturation process (Berry, 1997; Sánchez & Fernández, 1993; Siatkowski, 2007). Acculturation has been frequently studied using unidimensional acculturation proxy measures such as length of residence in the United States, language preference, and other dimensions (Cabassa, 2003). Such measures represent, at best, the amount of exposure one has to a new cultural context. The main limitation of unidimensional measures is that they fail to capture how individuals balance both cultures as they experience the acculturation process (Cabassa, 2003). Bidimensional scales take into account adherence to each cultural domain, thereby allowing researchers to group individuals into one of four acculturation categories: assimilated—individuals that reject their culture of origin and seek a high level of immersion in the new culture; separated—individuals that retain a strong orientation to their culture of origin and reject or avoid the new culture; bicultural—individuals that embrace both their culture of origin and the new

culture; and marginalized—individuals that are excluded (either by choice or force) from their culture of origin and the new culture (Cabassa, 2003).

The bidimensional framework provides a more complete measure of the acculturation process, but the unidimensional framework may still provide some insight on acculturations' effects, such as exposure to the U.S. culture, on health behaviors. Although there is consistent evidence linking greater acculturation to the U.S. culture, regardless of how it is measured, with less healthful diets (Ayala, Baquero, & Klinger, 2008), the evidence for PA has been less clear (Benitez et al., 2016). Inconsistent associations of uni- and bidimensional measures of acculturation with PA were reported in a 2015 review, which found that out of 33 studies, 14 found positive associations, two found negative associations, and five reported no associations (Benitez et al., 2016). The relationship has also been shown to vary according to the PA outcome of interest. Several studies have linked higher acculturation with higher leisure-time PA (Afable-Munsuz, Ponce, Rodriguez, & Perez-Stable, 2010) but lower non-leisure-time PA (Afable-Munsuz et al., 2010; Berrigan, Dodd, Troiano, Reeve, & Ballard-Barbash, 2006; Ham, Yore, Kruger, Heath, & Moeti, 2007; Marquez & McAuley, 2006) and overall PA (Marquez & McAuley, 2006). Furthermore, because most studies are based on self-reported PA, our understanding of the relation between acculturation and Latinos' accelerometer-based PA is limited. The two known studies that examined unidimensional measures of acculturation in relation to accelerometer-based PA found no association (Marquez & McAuley, 2006; Vella, Ontiveros, Zubia, & Bader, 2011). In addition, although sedentary time has been identified as an important behavior with detrimental effects on health independent of PA (Owen, Healy, Matthews, & Dunstan, 2010), no published studies to our knowledge have examined the relation between acculturation and sedentary time among Latinas.

To better understand the relationship between acculturation and Latinas' activity levels, a comprehensive approach is needed in which multiple measures of acculturation are examined because they likely assess different dimensions of this construct. Length of residence in the United States, for example, may quantify exposure to the U.S. context, while bidimensional acculturation scales capture one's adherence to both culture of origin and the U.S. culture. Given the aforementioned gaps in the literature, the primary objective of the present study was to examine the associations of acculturation, as measured by length of residence in the United States and a bidimensional acculturation scale, with self-reported domain-specific PA and accelerometer-based PA and sedentary time among a sample of Latinas recruited for the *Fe en Acción/Faith in Action* study in San Diego, California. Based on the limited evidence linking acculturation and self-report PA (Benitez et al., 2016), we expect to find PA domain-specific associations with acculturation, specifically higher leisure-time PA and lower transportation, occupational, and household PA among Latinas with higher acculturation levels. Despite the lack of accelerometer-based studies linking acculturation with intensity-specific activity, we hypothesize that reductions in non-leisure-time PA will result in lower total MVPA and higher sedentary time among those of higher acculturation.

Method

Participants and Procedures

A total of 436 Latina women were enrolled in the *Fe en Acción/Faith in Action* study, a cluster randomized controlled trial for PA promotion in San Diego, California. The full methodology for this study has been published elsewhere (Arredondo et al., 2015). Briefly, *Fe en Acción* recruited churchgoing Latinas from 16 Catholic churches in San Diego County. Recruitment of participants was done through fliers, word of mouth, announcements in church bulletins, and verbal announcement during Spanish language mass and ministry group meetings. The inclusion criteria were self-identifying as Latina, being 18 to 65 years old, attending church at least four times per month, and reporting no barriers to participating in the 24-month intervention. Participants were also excluded if they reported a health condition that limited their ability to be physically active (Canadian Society for Exercise Physiology, 2002), unless they obtained permission from their physician to participate in the study. To recruit low-active women, participants were further screened for their PA levels using two screeners (Smith, Marshall, & Huang, 2005; Taylor-Piliae et al., 2006) and accelerometers. Women were eligible to participate in the study if they reported no or mostly light-intensity activity during leisure-time or on the job as well as engaged in <250 minutes/week of accelerometer-based MVPA (Arredondo et al., 2015). The accelerometer cutoff allowed for inclusion of Latinas that may have engaged in higher non-leisure-related activity (e.g., occupational), but because they reported low leisure-time PA would benefit most from a PA intervention.

Between June 2011 and September 2013, trained bilingual research assistants (RAs) collected participant baseline data at participating churches or participants' homes. During the visit, participants completed a self-administered survey that included assessment of sociodemographics, acculturation, and domain-specific PA, which was the only section interviewer administered. Surveys were completed in the participant's preferred language (English or Spanish). When Spanish language items in the survey were not available, items were translated and cross-checked by experienced bilingual/bicultural members of the research team. RAs measured anthropometrics including height, weight, and waist circumference, twice using a portable stadiometer, scale, and measurement tape, respectively. In addition, participants were given an accelerometer to wear for a week.

Measures

Accelerometer-Based Physical Activity and Sedentary Time—Objective PA was assessed using the ActiGraph GT3-X or GT3-X+ activity monitor (Actigraph, Pensacola, FL). ActiGraph monitors are electronic three-dimensional motion sensors that detect intensity, frequency, and duration of movement on three axes. Devices were initialized to collect data at 1-second epochs/30 Hz. A shorter time interval has been shown to reduce misclassification error of PA estimates (Gabriel et al., 2010). The ActiGraph was worn at the hip on an elastic belt for seven complete days. Valid data were defined as at least five days (including one weekend day) with 10 valid hours per day of data. Nonwear time was defined as 60 consecutive minutes of zero count values. Participants who did not meet the criteria for minimum wear time were asked to re-wear the device. Data were converted to

60-second epoch files and processed using the Troiano 2008 cut-points (Troiano et al., 2008): sedentary = 0 to 99 counts per minute (CPM), light = 100–2,019 CPM, moderate = 2,020 to 5,998 CPM, and vigorous >5,999 CPM. For this study, moderate- and vigorous-intensity activity counts were summed then divided by the number of days worn and multiplied by 7 to compute minutes of MVPA per week. MVPA was used as a normally distributed continuous variable. In addition, minutes of sedentary time were divided by total wear time to compute percent sedentary time, which was also analyzed as a normally distributed continuous variable.

Self-Reported Domain-Specific Physical Activity—Trained RAs administered a modified Global Physical Activity Questionnaire (GPAQ) to assess domain-specific PA (Armstrong & Bull, 2006). The 16-item GPAQ evaluates the frequency and duration of PA (≥ 10 consecutive minutes) across three domains: leisure-time, transportation [walking/bicycling], and occupation. Modifications to the GPAQ included the addition of six items assessing household PA. The GPAQ has been previously validated against the accelerometer and has shown higher reliability with vigorous PA among Latinas (Hoos, Espinoza, Marshall, & Arredondo, 2012). Total minutes/week of PA in each domain was computed using standard GPAQ protocol (World Health Organization, n.d.). Because the leisure-time, transportation, and occupational PA variables were highly skewed with over 50% of the sample reporting no activity in each domain, we created binary variables for each domain categorizing participants as reporting any (≥ 10 minutes/week) versus no activity, similar to other studies (Brownson et al., 2000; Wanner, Götschi, Martin-Diener, Kahlmeier, & Martin, 2012). Although nearly all participants reported some household MVPA, the distribution of the data was highly skewed; thus, we used the median split to dichotomize this domain into those who reported <300 minutes/week and those who reported ≥ 300 minutes/week of household MVPA. The 300-minute cutoff has also been used in one other study with women (Brownson et al., 2000). In addition, we used the 2008 PA Guidelines (U.S. Department of Health and Human Services, 2008) to classify participants as meeting/not meeting MVPA recommendations. Using the recommended cutoffs, we defined meeting recommendations as reporting ≥ 150 minutes/week of moderate PA, or ≥ 75 minutes/week of vigorous PA, or 600 metabolic equivalent (MET) min of MVPA during leisure-time and transportation PA. We focused on leisure-time and transportation PA given Latinos' generally low participation in these two domains and the potential for targeting these domains in PA interventions (Arredondo et al., 2016).

Acculturation—Acculturation was measured in two ways among all participants (foreign- and U.S.-born): self-reported length of residence in the United States and the Bidimensional Acculturation Scale (BAS) for Hispanics (Marin & Gamba, 1996). Length of residence was normally distributed and recoded to represent 5-year increments to ease interpretation. Although some studies have used cutoffs such as ≥ 15 years of residence to define high levels of acculturation, such cutoffs are often used in relation to clinical outcomes such as obesity and cardiovascular disease (Goel, McCarthy, Phillips, & Wee, 2004; Koya & Egede, 2007). To our knowledge, no threshold effects for length of residence have been shown in relation to physical activity or sedentary behaviors; therefore, we analyzed length of residence as a continuous variable. The BAS scale included 24 items, 12 items each to assess

adherence to the Latino and Anglo cultural domains. Questions assessed participants' linguistic proficiency and language and media use in Spanish and English. Using the authors' recommended cutoffs (Marin & Gamba, 1996), we categorized participants in one of three categories: (a) separated—strong orientation to Latino culture only (scores ≥ 2.5 on the Latino domain and <2.5 on the Anglo domain); (b) assimilated—strong orientation to Anglo culture only (scores ≥ 2.5 on the Anglo domain and <2.5 on the Latino domain); or (c) bicultural—strong orientation to both Latino and Anglo culture (scores ≥ 2.5 on both domains). None of the participants scored low on both domains. Due to the low prevalence of assimilated Latinas (1%), we grouped them with the bicultural women to create a single binary variable, classifying participants into the high acculturation (bicultural/assimilated) or low acculturation (separated) group.

Sociodemographics—Age, number of children and adults in the household, number of cars per household, marital status, household income, education, and employment were assessed by the self-administered survey using questions from the Behavioral Risk Factor Surveillance Systems (Centers for Disease Control and Prevention, 2005). A score for vehicle access was computed by dividing the number of cars by number of adults in the household; higher scores were indicative of greater vehicle access. Marital status was categorized as married/living with partner versus single/nonpartnered. Monthly household income was categorized as $\geq \$2,000$ /month versus $< \$2,000$ /month. Education was dichotomized as less than high school versus high school or higher completed. Employment status was classified as being employed versus unemployed.

Anthropometrics—Height was measured in cm using a Shorrboard stadiometer (Weigh and Measure, LLC, Olney, MD), and weight was measured in kg using a Health O Meter scale (Professional Model 498KL, McCook, IL). Both height and weight were measured twice and the average of the two values was used to calculate body mass index.

Statistical Analyses

The analytical sample included only those with complete PA and acculturation data ($N=410$). Sample characteristics were reported as means and standard deviation or percentages where appropriate. For accelerometer-based MVPA and percent sedentary time, we used mixed effects linear regression models, adjusting for church clustering as a random effect, to assess the independent associations with each acculturation measure (both were tested in the same model). Mixed effects models with a binary distribution (logistic regression), adjusting for church clustering effects, were performed to assess the associations of both acculturation measures with each domain-specific PA outcome. All models were controlled for variables found to be significantly related ($p \leq .05$) to the PA or acculturation variables, as posited in the literature (Siatkowski, 2007; Trost, Owen, Bauman, Sallis, & Brown, 2002): age, vehicle access, number of children in the household, marital status, employment, education, and household income. Models were tested for multicollinearity using variance inflation factors and tolerance values. Analyses were performed using SAS version 9.4 (SAS Institute Inc., Cary, NC).

Results

Descriptive Characteristics of Sample

Participants were on average 44 years old, and the mean body mass index was 30 kg/m² (Table 1). Most women were married (77%) and of low socioeconomic status as noted by low household income and education levels. Approximately 66% reported being employed.

More than 90% were immigrants from Mexico or another Latin American country (Table 1). The average length of time living in the United States among the whole sample (not just immigrants) was 21 years. According to BAS scores, the majority of women were of lower acculturation, that is, most were classified as separated (strong orientation to the Latino culture only).

Based on the accelerometer, the average time in MVPA was 103 minutes/week, and three-fourths of participants' total wear time was spent in sedentary time (Table 1). Only 32% met MVPA recommendations from self-reported leisure-time and transportation PA.

Associations of Acculturation With Accelerometer-Based MVPA and Sedentary Time

Associations of both acculturation measures with accelerometer-based MVPA and sedentary time before and after adjustment for sociodemographic variables are shown in Table 2. Compared with Latinas with strong orientation to the Latino culture only (separated group), assimilated/bicultural women had significantly lower MVPA ($\beta = -18.42$, $p = .03$) and higher percent sedentary time ($\beta = 2.24$, $p = .002$), independent of length of residence in the United States. These associations remained even when length of residence was removed from the models (data not shown).

Associations of Acculturation With Self-Reported Domain-Specific PA

Associations of acculturation and each self-reported domain-specific PA outcome are shown in Table 2. Longer residence in the United States was significantly associated with lower odds of reporting any transportation PA (odds ratio [OR] = 0.79, 95% confidence interval [CI; 0.68, 0.93]), any occupational PA (OR = 0.85, 95% CI [0.73, 1.00]), and meeting MVPA recommendations (OR = 0.86, 95% CI [0.74, 1.00]), independent of BAS scores. For example, for every 5-year increase in residence in the United States, there was a 21% reduction in reporting any transportation PA. The associations held even after removing the BAS variable from the models (data not shown).

Discussion

Among our sample of predominantly immigrant Latinas, higher acculturation was adversely related to activity levels, regardless of how it was measured. Specifically, longer residence in the United States was inversely related to reporting any transportation or occupational PA and meeting MVPA recommendations. Based on the accelerometer data, bicultural/assimilated Latinas had significantly less MVPA and higher sedentary time than their lower acculturated counterparts (separated group). Our findings underscore the complexity of acculturation and the importance of using multiple measures of acculturation to better understand its relationship with PA.

Acculturation as assessed by length of residence in the United States was associated with lower odds of reporting any transportation or occupational PA. These findings are consistent with previous research (Ham et al., 2007; Marquez & McAuley, 2006). Reductions in these two PA domains may be the result of changes to one's environment and access to resources. It is possible that Latinas in our sample relied more on walking in their communities of origin to get to and from destinations. One study suggested PA among Mexican adults may be more strongly driven by necessity (transportation) than by choice (leisure; Salvo et al., 2015). Conversely, communities in the United States may be more sprawled and potentially perceived as less safe, thereby creating greater reliance on motorized transportation (e.g., public transportation and vehicle access) and a reduction in transportation PA. Moving to a new environment may also influence employment, such that women shift from physically demanding occupations (e.g., agriculture) to those that require less activity (e.g., office jobs) or they become homemakers.

A novel aspect of this study is that we examined associations between acculturation as assessed by BAS scores with accelerometer-based PA and sedentary time. We found that assimilated/bicultural Latinas (who scored high on the Anglo domain of the BAS), had significantly higher accelerometer-based sedentary time and lower MVPA than their lower acculturated counterparts. To our knowledge, no other study has reported on the relationship between bidimensional acculturation measures and accelerometer-based intensity-specific activity. Two previous studies that assessed the relationship between acculturation and accelerometer-based PA, based on activity or step counts, found no relationship (Marquez & McAuley, 2006; Vella et al., 2011). Our findings are not necessarily comparable to those two studies because we used different acculturation measures and accelerometer-based PA indicators; however, the current study contributes to the literature by being one of the first to demonstrate an inverse association between a bidimensional acculturation measure and accelerometer-based MVPA as well as a positive relationship with sedentary time. These findings suggest acculturation to U.S. culture has a potentially negative effect on Latinas' overall activity. The reductions in MVPA may be due, at least in part, to reductions in transportation and occupational PA, which have been shown to make up most of Latinos' self-reported PA (Arredondo et al., 2016). Our study supports this hypothesis with our finding that longer residence in the United States was related to a reduced likelihood of reporting any transportation and occupational PA.

Our findings suggest that to better understand the acculturation experience and its effects on domain-specific PA, we need to examine the context in which acculturation takes place (Cabassa, 2003). Our sample was predominantly composed of Mexican immigrant Latinas, thus assessing their context and PA behaviors prior to and after immigration can lead to a better understanding of the effects of acculturation on their PA behaviors. In addition, there is increasing recognition of acculturation as a process in which change in behaviors and/or values are assumed (Benitez et al., 2016); thus, cross-sectional studies that rely on data from a single point in time may not be reflective of actual behaviors and documentation of changes over time may be needed in future studies.

Limitations and Strengths

Our focus on Latinas reporting low levels of leisure-time PA may have limited our sample to include a higher proportion of women of lower acculturation; thus, our study should be replicated with a sample representing a wider range of acculturation and activity levels. Nevertheless, this focus also allowed us to examine PA patterns among a population that may be more likely to benefit from a PA intervention. Another limitation is that the findings may not be generalizable to non-churchgoing Latinas, Latino men, or other geographical contexts. The cross-sectional nature of our study also limits examination of cause and effect relationships.

A key strength of this study is the use of two measures of acculturation—one that implies exposure to the United States and the other assessing how one balances their new culture and culture of origin. These measures capture different dimensions of the acculturation process. In addition, our analysis of self-report and accelerometer-based PA outcomes was novel and provides insight on the association between acculturation and domain-specific and overall PA as well as sedentary time.

Implications for Practice

Findings from this study may have important implications for interventions. Much of the early work examining the role of acculturation on PA among Latinas focused specifically on leisure-time PA, which led to a general consensus that Latinas of lower acculturation were less active than those of higher acculturation (Afable-Munsuz et al., 2010; Benitez et al., 2016; Berrigan et al., 2006; Chasan-Tabar et al., 2007; Evenson, Sarmiento, & Ayala, 2004). To date, most PA interventions have been delivered in Spanish language format, thereby attracting mostly Latinas of lower acculturation (Pérez-Escamilla, 2011). Latinas of higher acculturation were found to be the least active overall in our study, suggesting interventions may need to be tailored to the acculturation levels of Latinas to help address the disparities in their PA and sedentary behaviors. Furthermore, in addition to increasing leisure-time PA, promoting transportation PA may be another important target to help increase the proportion of Latinas meeting PA guidelines.

Acknowledgments

The authors would also like to acknowledge the *Fe en Acción* research team for their assistance in the project data collection efforts.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the National Cancer Institute of the National Institutes of Health (R01CA138894).

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Table 1Descriptive Characteristics of Latina Sample; *Fe en Acción*; San Diego, CA (2011–2013).

Characteristic	Mean (SD) or %
Sociodemographics	
Age, years	44.3 (9.7)
BMI, kg/m ²	30.3 (6.3)
# of children living in household	1.6 (1.3)
# of adults living in household	3.0 (1.3)
# of cars per household	2.0 (1.0)
Married/living with partner	77.1
Monthly household income <\$2,000 ^a	58.5
Less than high school education	53.4
Employed	65.4
Country of birth	
Mexico/other Latin American country	91.9
United States	8.1
Age of arrival to the United States ^b	23.3 (9.7)
Length of residence in the United States	21.1 (10.3)
BAS categories ^c	
Separated (strong orientation to Latino culture only)	67.1
Assimilated (strong orientation to Anglo culture only)	1.0
Bicultural (strong orientation to both Latino and Anglo culture)	32.0
Accelerometer-based PA	
MVPA (minutes/week)	103.2 (64.0)
% sedentary time ^d	75.9 (6.1)
Self-report PA ^e	
Any leisure-time MVPA	44.2
Any transportation PA	32.4
Any occupational MVPA	42.4
Household MVPA >300 minutes/week ^f	47.3
Meets MVPA recommendations ^g	31.7

Note. N = 410. BAS = Bidimensional Acculturation Scale for Hispanics; BMI = body mass index; MVPA = moderate-to-vigorous physical activity; SD = standard deviation; PA = physical activity; MET = metabolic equivalent.

^aMissing n = 29.

^bAmong foreign-born only (n = 367).

^cSeparated defined as high scores (≥ 2.5) on *Hispanic* domain and low (<2.5) on Anglo domain. Assimilated defined as high scores (≥ 2.5) on *Anglo* domain and low (<2.5) on Hispanic domain. Bicultural defined as high scores (≥ 2.5) on *both* domains.

^dOut of total wear time.

^eAny activity defined as reporting ≥ 10 consecutive minutes of activity.

^fCutoff based on median split of distribution.

^gRecommendations: 150 minutes/week moderate PA, or 75 minutes/week vigorous PA, or 600 moderate-to-vigorous MET minutes in leisure-time and transportation PA domains.

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Table 2

Associations of Acculturation Measures With Accelerometer-Based and Self-Reported Physical Activity Among Latinas; *Fe en Acción*; San Diego, CA (2011–2013).

Physical activity outcome	Acculturation measure			
	Length of residence in the United States (5-year increments)		Assimilated/bicultural ^d	
Accelerometer-based	β (SE)	<i>p</i>	β (SE)	<i>p</i>
MVPA minutes/week				
Model 1 ^b	−2.71 (1.58)	.09	−17.64 (6.91)	.01
Model 2 ^c	−0.46 (2.05)	.82	−18.42 (8.22)	.03
% Sedentary time				
Model 1 ^b	−0.15 (0.15)	.31	2.94 (0.65)	<.0001
Model 2 ^c	−0.04 (0.18)	.84	2.24 (0.73)	.002
Self-reported ^d	OR (95% CI)	<i>p</i>	OR (95% CI)	<i>p</i>
Any leisure time MVPA				
Model 1 ^b	1.00 (0.91, 1.11)	.94	1.02 (0.65, 1.58)	.95
Model 2 ^c	1.01 (0.88, 1.15)	.93	0.97 (0.57, 1.65)	.90
Any transportation PA				
Model 1 ^b	0.80 (0.71, 0.91)	.0004	0.79 (0.48, 1.29)	.34
Model 2 ^c	0.79 (0.68, 0.93)	.004	0.93 (0.51, 1.69)	.80
Any occupational MVPA				
Model 1 ^b	1.00 (0.91, 1.11)	.97	1.23 (0.80, 1.91)	.35
Model 2 ^c	0.85 (0.73, 1.00)	.04	0.95 (0.53, 1.71)	.87
Household MVPA (>300 minutes/week)				
Model 1 ^b	0.96 (0.87, 1.07)	.48	0.80 (0.51, 1.25)	.32
Model 2 ^c	0.92 (0.80, 1.06)	.23	0.88 (0.51, 1.53)	.65
Meets MVPA recommendations ^e				
Model 1 ^b	0.85 (0.76, 0.96)	.007	0.94 (0.58, 1.50)	.78
Model 2 ^c	0.86 (0.74, 1.00)	.05	0.97 (0.54, 1.72)	.91

Note. BAS = Bidimensional Acculturation Scale; CI = confidence interval; MVPA = moderate-to-vigorous physical activity; OR = odds ratio; SE = standard error; PA = physical activity; MET = metabolic equivalent. Bold *p* values are significant at the 0.05 level.

^aIncludes Latinas with scores ≥ 2.5 on the Anglo domain and either high or low scores on the Hispanic domain of the BAS. Reference is the separated group, that is, those with scores ≥ 2.5 on the Hispanic domain only.

^bMixed effects or generalized linear mixed effects model adjusted for clustering effects of the church only ($N = 410$). Both acculturation measures included in the model.

^cModel 1 further adjusted for age, vehicle access, number of children in household, marital status, employment, education, and household income ($n = 360$).

^dAny activity defined as reporting ≥ 10 consecutive minutes of activity.

^eRecommendations: 150 minutes/week moderate PA, or 75 minutes/week vigorous PA, or 600 moderate-to-vigorous MET minutes in leisure-time and transportation PA domains.

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