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Less Exercise and More Drugs: How a Low Income Population Manages Chronic Pain

Barbara J. Turner, MD, MSEd, Natalia Rodriguez, MPH, Melissa A. Valerio, PhD, MPH, Yuanyuan Liang, PhD, Paula Winkler, MEd, Lisa Jackson, MS

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Running Head: Chronic Pain Care in Low Income Persons

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Authors: Barbara J. Turner MD, MSEd[1,2], Natalia Rodriguez MPH[2], Melissa A. Valerio PhD, MPH[2,3], Yuanyuan Liang PhD[* 2,4], Paula Winkler MEd[2,5], Lisa Jackson MS[6]

Affiliations:

1. Department of Medicine, UT Health San Antonio, San Antonio, TX

2. Center for Research to Advance Community Health (ReACH), UT Health San Antonio, San Antonio, TX

3. Department of Health Promotion and Behavioral Science, University of Texas School of Public Health in San Antonio, San Antonio, TX

4. Department of Epidemiology and Biostatistics, UT Health San Antonio, San Antonio, TX

5. South Central Area Health Education Center (AHEC), UT Health San Antonio, San Antonio, TX

6. GfK Custom Research LLC, Sunnyvale, CA

* Present Institution: Department of Epidemiology and Public Health, Division of Biostatistics and Bioinformatics, University of Maryland School of Medicine, Baltimore, MD

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Corresponding Author:

Barbara J Turner MD, MSEd, MA, MACP

Center for Research to Advance Community Health (ReACH)

UT Health San Antonio

7411 John Smith Dr, Suite 1050

San Antonio, TX 78229

Email: turner@uthscsa.edu; Telephone: 210-562-5551; Fax: 210-562-5560;

Personal: 210-562-5550

1   **Title:** Less Exercise and More Drugs: How a Low Income Population Manages Chronic Pain

2

3 **Abstract**

4 **Objective:** To evaluate chronic pain management in a multistate, low income, Hispanic

5 population and to examine predictors of exercising and prescription pain medication (PPM) use.

6

7 **Design:** Online survey administered to a representative sample of Hispanic adults in June 2015

8

9 **Setting:** Five southwestern states

10

11 **Participants:** Among all 1007 online panel members who were Hispanic, aged 35-75 years from

12 five states, representing 11,016,135 persons, the survey was completed by 516 members (51%).

13 Among these, 102 participants were identified with chronic non-cancer pain representing

14 1,140,170 persons.

15 **Intervention:** Not applicable

16

17 **Main Outcome Measures:** Exercising or using PPM for chronic pain in past year.

18

19 **Results:** Most participants reported using PPM (58%) and exercise (54%) to manage pain.

20 Compared with annual household incomes >$75,000, adjusted odds ratios [AORs] for exercising

21 were: 0.20 for <$10,000 (P=0.12); 0.40 for $10,000-34,999 (P=0.22), and 0.15 for $35,000-

22 74,999 (P=0.015). Conversely, AORs for PPM were over four-fold higher for lower income

23 groups as follows: 14.2, 4.79, and 4.85 respectively (all P<0.065). PPM users rated importance

24 of accessing a gym to manage pain lower (P=0.01) while exercisers rated feasibility of gym

25 access to manage pain higher (P=0.001).

26

27 **Conclusions:** In a Hispanic population-based sample with chronic pain, lower income groups

28 tended to exercise less but use PPM more. Barriers to gym access and use may play a role in

29 these disparities.

30

31 **Keywords:** chronic pain; Hispanic Americans; exercise, drug therapy; income

32

33 **List of abbreviations:**

34 Prescription pain medication **(PPM)**

35 Measure of size **(MOS)**

36 Probability proportional to size **(PPS)**

37 Confidence intervals **(CIs)**

38 Adjusted odds ratio **(AOR)**

39 National Health and Nutrition Examination Survey **(NHANES)**

40 Non-steroidal anti-inflammatory drug **(NSAID)**

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45   Multimodality management of chronic pain has been endorsed by the National Pain

46   Strategy of the U.S. Department of Health and Human Services[1] and the Centers for Disease

47   Control and Prevention.[2] These recommendations reflect benefits from randomized trials of

48   structured exercise, cognitive behavioral therapy, and yoga[3,4,5,6] as opposed to well-known risks

49   of long-term opioid therapy.[7] Poorer access to exercise facilities may prevent lower income

50   groups with chronic pain from engaging in exercise to manage this debilitating condition. In

51   general population studies, lack of exercise facilities reduces the probability of engaging in

52   leisure time physical activities.[8,9] Because national surveys have shown that the prevalence of

53   chronic pain is significantly greater for low income groups,[10] it is especially important to

54   evaluate their chronic pain management approaches to examine whether they may have barriers

55   to useful approaches such as exercise.

56

57   We report an online-based survey of a representative sample of Hispanics with chronic

58   non-cancer pain from five states about non-pharmacologic and pharmacologic approaches to

59   manage chronic pain used in the past 12 months. We hypothesized that exercising to manage

60   chronic pain would differ by household income. We also examined attitudes about the value of

61   having gym facilities available. This population-based study offers unique insights into current

62   pain management practices of low income Hispanics with chronic pain and highlights the need

63   for policymakers to define and address barriers to their engaging in exercise to manage chronic

64   pain.

65

66

67   **Methods**

68   *Study Sample*

69   The sample was drawn from GfK's KnowledgePanel[®a], the largest nationally

70   representative online panel.[11] As described elsewhere, KnowledgePanel[®] members are recruited

71   using probability-based sampling with random digit dialing and address-based sampling from the

72   United States Postal Service's Delivery Sequence File to yield a nationally representative

73   sample.[10] Starting in 2009, Census Block Groups with high-density minority communities were

74   oversampled and, in 2010, sampling was further modified to target high-density Hispanic areas.

75   KnowledgePanel[®] membership includes hard-to-reach individuals, such as minority groups, by

76   providing computer hardware and internet capability to households lacking these services.

77

78   In June 2015, we offered the online survey to all KnowledgePanel[®] members who were

79   Hispanic adults, aged 35-75 years and residing in five states (California, Texas, Arizona,

80   Nevada, and New Mexico). Findings from surveying KnowledgePanel[®] members without

81   chronic pain regarding their knowledge of this condition have been previously reported.[12] Using

82   GfK's KnowledgePanel[®] profile data, persons with chronic pain were identified if they had been

83   diagnosed by a doctor with conditions such as low back pain, neck pain, or fibromyalgia (N=217

84   or 21% of all eligible members). To assess for current chronic pain, the member was asked: "Do

85   you suffer from pain that bothers you on most days?" If affirmative, the member answered three

86   statements[13] about their pain on a four-point Likert scale: "My pain has been bothering me on

87   most days or nights for at least three months"; "My pain limits what I can do, like playing with

88   kids, walking, driving, household work"; and "The pain I feel comes and goes but always seems

89   to come back." If a member replied that any of these statements did not describe their pain well,

90   they were considered to not have chronic pain. Other exclusions included: cancer pain diagnosed

91   by a health care provider; severe disability due to limitations to exercise, and speaking a

92   language other than English or Spanish.

93

94   *Survey Development and Administration*

95   For persons with chronic pain, the survey asked about pain characteristics including:

96   location, duration, impact on work or quality of life, and intensity.[14] The survey asked about

97   treatments received for pain in the past 12 months as well as ratings of helpfulness (4-point

98   Likert-type scale). Respondents were also asked about the importance and feasibility of

99   accessing specific non-pharmacologic pain management services and facilities. Pilot testing was

100 completed by 38 Hispanic KnowledgePanel® members. Pilot study data were used to abbreviate

101 the survey and reframe some items. The survey was translated into Spanish and back-translated.

102 The median survey completion time was 24 minutes.

103

104   All study protocols were reviewed by the [Institution blinded to maintain the integrity of

105 the review process] Institutional Review Board and determined to be non-regulated research or

106 exempt prior to data collection. [Institutional Review Board Number blinded to maintain the

107 integrity of the review process]

108

109 Dependent variables

110   The outcome measures were two chronic pain management strategies used in the past

111 year: 1) exercising to manage pain, and 2) taking prescription pain medication (PPM) for pain.

112

113 Independent variables

114   The main predictor of interest is annual household income categorized as: <$10,000,

115 $10,000-34,999, $35,000-74,999, $\geq$$75,000. The lowest income group is poverty level for an

116 individual or any size family[15] (<$10,000) and the remaining income levels each comprised

117 approximately 30% of the sample ($\geq$$10,000). Other predictors were demographics: age, gender,

118 language preference (English or Spanish preference based on profile data), and employment

119 status (full-time or part-time versus unemployed). The level of pain on most days in a typical

120 week was evaluated on a 4-point Likert scale, with responses ranging from "hurts just a little bit"

121 to "hurts as much as possible."

122

123 <u>Weighting and Analysis</u>

124   Sample weights were calculated by GfK to ensure that resulting samples behaved

125 according to an equal probability selection method. This methodology starts by weighting the

126 entire KnowledgePanel® to the detailed geodemographic benchmarks of U.S. adults from the

127 latest March supplement of the Current Population Survey.[16] This approach ensures that the

128 weighted distribution of the KnowledgePanel® accurately matches that of U.S. adults. Using the

129 weights as the measure of size (MOS) for each panel member, a PPS (probability proportional to

130 size) procedure is used to select study-specific samples. The application of the PPS methodology

131 with the MOS values produces fully self-weighted samples, for which each sample member can

132 carry a design weight of unity. Because the study design required oversampling of specific

133 subgroups, the corresponding design weights were adjusted using the Current Population Survey

134 benchmarks serving as reference distributions. KnowledgePanel® has been used for many

135 population-based studies of health-related topics.[17,18,19]

136

137   Respondents' characteristics were summarized by means and standard errors (SEs) for

138   continuous variables as well as proportions and SEs for categorical variables while taking into

139   account design weights. The design weights provided by GfK employ an iterative proportional

140   fitting (ranking) procedure to ensure that final weights are simultaneously aligned in regard to

141   benchmark distributions and adjusted for nonresponse as well as under- or over-coverage

142   imposed by the study-specific sample design. To account for the survey's sampling design,

143   weighted proportion and corresponding SEs were computed to describe proportions of

144   respondents who used each pain management approach in the past 12 months. Additionally,

145   weighted means with SEs were computed to summarize the mean helpfulness of each pain

146   management approach reported.

147

148   Separate weighted logistic regression models were used to examine the adjusted

149   association of household income with exercising and using PPM to manage pain in the past year.

150   All models adjust for demographics and pain level. After analysis of unadjusted associations

151   with the outcomes, the pain measure was examined in final models as low and high to reduce

152   degrees of freedom used. We also adjusted for exercise in the PPM model to examine whether

153   participants who exercised were more likely to use PPM for pain and vice versa. Finally, post-

154   hoc analyses were conducted of ratings on importance of having gym facilities available in their

155   community and ratings on feasibility of having these gym facilities accessible and available for

156   chronic pain. All presented data are from weighted estimates (proportions with their SEs, means

157   with their SEs and odds ratios with 95% confidence intervals [CIs]) to account for the sampling

158   design of this survey. Descriptive and multiple regression analyses were conducted using

159   Stata/SE.[b]

160

161

162 **Results**

163   The entire sampling frame of 1,007 members of GfK's KnowledgePanel® represents

164 11,016,135 Hispanics aged 35-75 and residing in five southwestern states. Responses were

165 received from 516 (51.2%) members. Analysis of respondents versus non-respondents in regard

166 to demographics, work status, and language preference showed only one significant difference

167 for the mean age, which was younger for non-respondents than respondents (50.0 versus 52.9

168 years, respectively, P=<0.001) (Appendix).

169

170   Of survey participants, 486 (94%) had valid responses for more than 75% of the

171 questions. Of these, 102 (21%) participants were identified as having current chronic non-cancer

172 pain. Based on sampling weights, this group was estimated to represent 1,140,170 persons with

173 chronic pain. In weighted analyses, this population had a mean age of 53.2 years, 53.5% were

174 female, 40.9% preferred Spanish language, and 63.9% were unemployed. Annual household

175 incomes were skewed towards low income, with 11.3% earning <$10,000,[15] while an additional

176 28.5% earned <$35,000 (Table 1). Thirty percent of study participants reported that their pain

177 hurts a whole lot or as much as possible on most days of the week, while 26% reported pain that

178 hurts a little bit.

179

180   The most common pain management approaches reported by participants were taking an

181 over-the-counter pain medication (63%), taking prescription pain medication (58%), and

182 exercising (54%) (Table 2). Other common non-pharmacologic approaches for managing pain

183   were massage (44%) and physical therapy (23%) but <10% of respondents used: yoga,

184   biofeedback, acupuncture, or hypnosis. In regard to helpfulness, uncommonly used approaches

185   (i.e., yoga, traction, and injections) received the highest ratings while more commonly used

186   approaches (i.e., prescription pain medication, exercise, and massage) were somewhat less highly

187   rated. Physical therapy and biofeedback received the lowest ratings on helpfulness.

188

189   After adjustment, a report of engaging in exercising for pain in the past 12 months (Table

190   3 left columns) differed significantly by household income, with an adjusted odds ratio (AOR) of

191   0.15 for participants with incomes from $35,000 to $74,999 compared with $\geq$$75,000 (P=0.015).

192   Odds of exercising for lower income groups were also consistently reduced by at least 60% but

193   did not achieve statistical significance. In regard to taking prescription pain medication, the

194   adjusted odds ratio for participants with <$10,000 was 14.2 (P=0.057) versus those with incomes

195   $\geq$$75,000 and the odds of using PPM was also over four-fold greater for incomes from $10,000

196   to $74,999 (P=0.053 and 0.065, respectively). In addition, odds of using exercise were reduced

197   by over 70% on all sex-language preference categories versus men who preferred English but

198   these effects were all non-significant. The odds of using PPM were more than tripled for women

199   who preferred English versus men who preferred English (P=0.11).

200

201   Ratings of importance on a four-point Likert scale of having a gym available for persons

202   with chronic pain in the community where the participant resides were significantly lower for

203   persons who used PPM to manage pain than other respondents (2.15 vs. 2.89, P=0.01).

204   Conversely, persons who reported exercising to manage pain gave higher ratings for how

205 feasible it would be for a gym to be available and accessible for people with chronic pain in their

206 community compared with other respondents (2.94 vs. 2.12, P=0.001).

207

208

209 **Discussion**

210   In a five-state population-based sample representing over one million Hispanics with

211 chronic non-cancer pain, self-reported management of chronic pain with prescription pain

212 medications and by engaging in exercise differed markedly by annual household income. This

213 sample was skewed towards lower income, with 11% reporting an annual household income

214 <$10,000 which is well below the poverty level[15] and 40% with an income <$35,000 compared

215 with 35% nationally.[20] As hypothesized, we observed a consistent pattern for lower income

216 participants to be less likely to use exercise as a way to manage chronic pain. Participants with

217 incomes less than $75,000 had AORs of 0.40 or less for exercising to manage chronic pain

218 compared with those whose incomes were at least $75,000. In terms of effect size, the observed

219 odds ratios of 0.40-0.15 for exercising in lower income groups versus high income are moderate

220 to large effects based on equivalent Cohen's d.[21] On the other hand, lower income participants

221 had markedly higher adjusted odds of taking prescription pain medications, ranging from 4.5- to

222 14-fold greater compared with participants with high incomes. These odds ratios are equivalent

223 to medium and to large effects.[21] Furthermore, the consistency of these associations, lower for

224 exercise and higher for prescription pain medication, is compelling although, after weighting

225 most results did not reach statistical significance. Certainly, these novel findings highlight the

226 importance of considering household income in efforts to understand how large segments of the

227 U.S. population, such as Hispanics, currently manage chronic pain.

228

229   Although little is known about exercising to manage chronic pain in other populations,

230   studies of community-dwelling adults show similar income differences in exercising and fitness.

231   In a sample of Mexican American and European American community-dwelling adults, higher

232   income was significantly associated with better physical fitness based on walking speed.[22] In

233   addition, in a National Health and Nutrition Examination Survey (NHANES) study of seniors,

234   higher income groups and non-Hispanic whites engaged in significantly more leisure-time

235   physical activity than lower income groups or other racial-ethnic groups.[23] Therefore, studies in

236   general populations support the validity of our findings in a population-based sample of

237   Hispanics regarding income and exercise to manage chronic pain.

238

239   To our knowledge, this is the first study to demonstrate a higher likelihood of using

240   prescription pain medications for chronic pain among low income Hispanics. These results are

241   consistent with a study reporting that continuing to receive opioid analgesics long-term after

242   major surgery was significantly more likely for low income groups.[24] In addition, among

243   Medicare enrollees nationally, those who were lower income or living in a lower-educational

244   area were significantly more likely to receive long-term prescription opioids.[25]

245   Likewise, a qualitative study of low income Hispanics with chronic pain found that they

246   received little support or education from health care providers about this condition.[26] In these

247   circumstances, it may be that prescribing a pain medication, be it an opioid or another drug such

248   as prescription strength non-steroidal anti-inflammatory drug (NSAID), would be the most

249   expeditious approach for clinicians, especially if there are few available alternative resources for

250   pain management.[27]

251

252   As a likely barrier to exercising, we also explored participants' attitudes about having

253   gyms to exercise. Participants using prescription pain medications rated the importance of a gym

254   in their community significantly lower than other participants, whereas those who exercised gave

255   significantly higher ratings to the feasibility of having a gym available for persons with chronic

256   pain. As in other studies of low income minority groups, [28] these results probably reflect the fact

257   gym memberships are costly[29] and covered only by specific private insurance plans and

258   Medicare plans.[30,31] In addition, lack of insurance coverage is a barrier to non-pharmacologic

259   treatments such as massage.[32] On the other hand, the least costly way to manage pain may be for

260   a patient to take pain medications because part or all of the cost of prescribed medications are

261   often covered by insurance plans.

262

263   In addition, lower income groups may believe that the physical activities required of

264   blue-collar jobs would obviate the need for a gym membership. Yet repetitive activities such as

265   lifting in many blue-collar jobs increases the risk of low back pain which, in turn, has been

266   reported to be managed with poorer quality of care.[33] Because gyms can supplement physical

267   therapy for chronic pain, access to this resource could be important adjunct for low income

268   groups with jobs requiring demanding physical activities.

269

270   Yet social and cultural norms may also underlie greater use of medications and lower use

271   of exercise by lower income groups. For example, low income groups experience profound

272   stressors such as holding down multiple jobs and no childcare that inhibit ability to take the time

273   to exercise to manage chronic pain. In low income communities, exercising is also influenced

274   by: unsafe neighborhoods, traffic conditions, poor access to parks and recreational facilities, lack

275   of time, poor health, and lack of social support for exercise.[34] In a population-based survey of

276   middle-aged California residents, the adjusted odds of engaging in vigorous exercise three days a

277   week were only 0.28 for Hispanics with limited English proficiency but 0.73 for English-

278   proficient Hispanics versus non-Hispanic whites.[35] These data are consistent with lower adjusted

279   odds of exercising among participants in our survey who preferred Spanish.

280

281   Participants rated both exercise and prescription pain medications relatively high on a

282   helpfulness scale. However, massage was the other frequently reported pain management

283   approach, by over 40% of participants, that was also rated highly on helpfulness. This common

284   use of massage therapy is encouraging given national data that non-Hispanic whites are more

285   likely to use massage than other racial-ethnic groups[36] and recent evidence supporting the

286   effectiveness of massage therapy for chronic pain.[37]

287

288   *Study Limitations*

289   The study has a number of limitations to consider. First, the number of participants with

290   chronic pain was relatively small and the response rate was only 51% but we employed

291   rigorously developed sampling weights to ensure the representativeness of our results. This

292   relatively small sample along with weighting our analyses reduced our ability to find statistically

293   significant results. Second, prescription pain medications may include effective drugs such as

294   anticonvulsants for neuropathic pain along with drugs with weaker effectiveness such as high

295   dose NSAIDs and opioids.[38] However, even if pain responds to medications, exercise is required

296   to maintain function that associated with longevity.[39] These approaches are complementary.

297 Third, we asked about approaches used for chronic pain in the past year and found that they may

298 have been used only transiently. However, all participants were currently affected by chronic

299 pain, so it is unlikely that they have discontinued these common management strategies.

300

301

302 **Conclusions**

303   To our knowledge, this is the first study to examine the association of annual income with

304 aspects of self-reported management of chronic pain in population-based sample representing

305 over one million persons. We observed a consistent pattern for participants with a household

306 income less than \$75,000 to have lower likelihood of exercising but higher likelihood of using

307 prescription pain medications to manage pain. Despite moderate to large estimated effect sizes in

308 this five-state representative sample of Hispanics with chronic pain, most did not reach statistical

309 significance. Yet these data are consistent with national data demonstrating disparities by

310 income level in shorter average lifespans for lower income Americans.[40] Contributing factors

311 include unhealthy behaviors such as lack of exercise as well as a myriad of life stressors and

312 health disparities.

313   Given the national recommendations by federal agencies to emphasize chronic pain

314 management using non-pharmacologic approaches and evident benefits of exercise for reducing

315 frailty,[41] it is incumbent upon policymakers and health care providers to examine and address

316 barriers for lower income Americans to engage in exercise and other evidence-based non-

317 pharmacologic approaches to manage chronic pain. Ideally, these facilities need to be available

318 in community health centers or other subsidized settings. In facilitated group meetings with rural

319 Hispanics with chronic pain, high priority was given to having a community center with special

320 resources such as exercise facilities for persons with chronic pain.[42] To engage low income

321 persons with chronic pain, community health workers could be trained to promote use of

322 exercise facilities safely and effectively. Evaluating the impact of these or other initiatives on

323 function and pain outcomes of low income persons with chronic pain as well as cost-

324 effectiveness should be a high research priority.

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450   **Suppliers**

451   a. GfK KnowledgePanel[®]; GfK Custom Research North America, 200 Liberty Street, 4th

452   Floor, New York, NY 10281

453   b. Stata/SE version 14; StataCorp LP, 4905 Lakeway Dr, College Station, TX 77845

Appendix: Characteristics of Respondent and Non-Respondent Samples

Characteristic	Respondent N (%)	Non-Respondent N (%)	Total N (%)	P value
Total	**486 (100)**	**521 (100)**	**1007 (100)**	
Age, mean ± SD (years)	52.88 ± 10.6	50.02 ± 10.6	51.4 ± 10.7	< 0.001[1]
Sex				0.47[2]
Female	265 (54.5)	296 (56.8)	561 (55.7)	
Male	221 (45.5)	225 (43.2)	446 (44.3)	
Language Preference				0.77[2]
English	234 (48.25)	246 (47.22)	480 (47.67)	
Spanish	252 (51.85)	275 (52.78)	527 (52.33)	
Education				0.46[2]
Less than High School	161 (33.1)	174 (33.4)	335 (33.3)	
High School	130 (26.8)	132 (25.3)	262 (26)	
Some College	109 (22.4)	136 (26.1)	245 (24.3)	
Bachelors Degree or Higher	86 (17.7)	79 (15.2)	165 (16.4)	
Employment status				0.038[2]
Paid Employee	234 (48.1)	285 (54.7)	519 (51.5)	
Not Working	252 (51.9)	236 (45.3)	488 (48.5)	
Household Income				0.88[2]
Less than $10,000	55 (11.3)	52 (9.9)	107 (10.6)	
$10,000 to $34.999	181 (37.2)	203 (38.9)	384 (38.1)	
$35,000 to $74,999	129 (26.5)	140 (26.9)	269 (26.7)	
$75,000 or more	121 (24.9)	126 (24.2)	247 (24.5)	
Internet access				0.90[2]
Yes	335 (68.9)	361 (69.3)	696 (69.1)	
No	151 (31.1)	160 (30.7)	311 (30.9)	
Marital Status				0.34[2]
Married	310 (63.8)	317 (60.8)	627 (62.3)	
Not Married	176 (36.2)	204 (39.2)	380 (37.7)	
Chronic Pain				0.52[2]
Yes	147 (30.2)	148 (28.4)	295 (29.3)	
No	339 (69.8)	373 (71.6)	712 (70.7)	

1. Mann-Whitney U test
2. Chi-squared test
3. Fisher's exact test

Table 1. Characteristics of Study Sample of Hispanics with Chronic Pain

Characteristic	Weighted Results N=1,140,170 Mean (SE) for Age Proportion (SE) for categorical variables
Age, mean ± SE (years)	53.19 (1.30)
Sex	
Female	53.52 (7.12)
Male	46.48 (7.12)
Language Preference	
English	59.12 (7.00)
Spanish	40.88 (7.00)
Employment Status	
Paid employee	36.14 (7.09)
Not Working	63.86 (7.09)
Household Income	
Less than $9,999	11.33 (3.66)
$10,000 to $34.999	28.49 (5.57)
$35,000 to $74,999	29.55 (7.31)
$75,000 or more	30.64 (6.78)
Pain Level†	
It hurts a little bit	25.84 (6.73)
It hurts even more	43.80 (7.25)
It hurts a whole lot	23.97 (5.28)
It hurts as much as possible	6.39 (2.42)

† Missing data for 1 person

Table 2. Pain Management Approaches Used by Respondents with Chronic Pain from 5-State Representative Sample of Hispanics

Pain management method	Used in Past 12 Months Proportion (SE)*	Helpfulness Mean (SE)[+]
Taking a pain medicine over the counter	0.63 (0.07)	2.45 (0.14)
Pain medication prescribed by a doctor	0.58 (0.07)	2.67 (0.11)
Exercising	0.54 (0.07)	2.62 (0.14)
Massage	0.44 (0.07)	2.57 (0.16)
Physical therapy	0.23 (0.05)	1.94 (0.20)
Electrical nerve simulation (TENS)	0.21 (0.05)	2.28 (0.24)
Special diet	0.20 (0.05)	2.55 (0.19)
Injections in joints, back or tissue	0.18 (0.04)	2.80 (0.18)
Professional counseling for pain	0.16 (0.04)	2.26 (0.19)
Chiropractor	0.14 (0.04)	2.68 (0.43)
Surgery	0.08 (0.03)	2.30 (0.18)
Yoga	0.07 (0.03)	3.14 (0.32)
Traction	0.03 (0.03)	2.98 (0.13)
Biofeedback	0.03 (0.02)	1.75 (0.18)
Acupuncture	0.02 (0.01)	2.39 (0.25)
Hypnosis	0.002 (0.002)	3 (NA)[†]

*Weighted proportion of 1,140,170 Hispanics in five states aged 35-75 with chronic pain

+Helpfulness rated on a 4 point Likert scale from not helpful to very helpful

[†]Only one subject reported rating on helpfulness for this pain management method, hence standard error (SE) cannot be estimated

Table 3. Weighted Associations of Patient Characteristics with Use of Exercise or Prescription Pain Medication for Chronic Pain

| Variables | Pain Management Approach Used in Past 12 Months | | | |
| | Exercise | | Prescription Pain Medication | |
Sex-Language Preference	**Adjusted OR (95% CI)**	**Adjusted P value**	**Adjusted OR (95% CI)**	**Adjusted P value**
Women-Spanish	0.29 (0.07, 1.15)	0.078	2.45 (0.42, 14.1)	0.32
Women-English	0.29 (0.06, 1.49)	0.14	3.51 (0.74, 16.6)	0.11
Men-Spanish	0.28 (0.06, 1.26)	0.10	1.74 (0.29, 10.5)	0.54
Men-English	1	-	1	-
Age, 1-year increase	1.02 (0.97, 1.08)	0.37	0.98 (0.93, 1.03)	0.41
Working				
Yes	0.90 (0.27, 2.94)	0.86	0.69 (0.19, 2.53)	0.58
No	1	-	1	-
Household Income				
Less than $10,000	0.20 (0.03, 1.54)	0.12	14.2 (0.92, 218.7)	0.057
$10,000-$34,999	0.40 (0.09, 1.75)	0.22	4.79 (0.98, 23.4)	0.053
$35,000-$74,999	0.15 (0.03, 0.69)	0.015	4.85 (0.91, 25.9)	0.065
$75,000 or higher	1	-	1	-
Exercise to Manage Pain				
Yes	-	-	2.17 (0.62, 7.58)	0.23
No	-	-	1	-
Prescription Pain Medication				
Yes	2.16 (0.66, 7.05)	0.20	-	-
No	1	-	-	-
Pain Level*				
High	0.65 (0.20, 2.11)	0.47	1.84 (0.53, 6.37)	0.33
Low	1	-	1	-

* Pain measured on a 4 point Likert scale and dichotomized as low 1-2 versus high 3-4 (see methods for description); N= 101 due to one subject missing pain level data