Table 1

Korean Immigrants Health and Healthcare

Author, Design, & Sample	Purpose	Results	Limitations
Bernstein et al., (2011). Cross-sectional *n* = 304 KIs living in New York City	Examine the prevalence of depressive symptoms among KIs in New York City and its relation to self-reported discrimination and acculturation.	13.2% of KIs demonstrated some depressive symptoms. Variables of living alone, marital status, education, years in the US, and income impacted depression scores. Multiple regression analysis revealed proficiency in the English language ($p < .05$) and discrimination ($p < .001$) were significant predictors for depression after controlling for socio-demographic factors, years in the US, and acculturative stress.	1. Causal inferences are not possible with cross-sectional studies. 2. Self-reports could bias results. 3. Convenience sampling minimizes the generalizability of the findings. 4. Majority of the participants had high level of education, which could bias the results; therefore, could not be generalizable. 5. The Acculturative Stress Scale used was not specific to KIs, but rather to Latinos and Asian Americans; this could bias the results.
Choi et al. (2011). Cross-sectional n = 197 KI women living in a large metropolitan area and midsized towns in the Midwest	Identify patterns for job, transportation, household, and leisure time physical activity; examine the differences in patterns for KIs' non-leisure and leisure time physical activity to the demographic characteristics.	Patterns of inactivity were more prevalent in all domains except for household physical activity. Job related: inactive pattern 49%. Transportation related: inactive pattern 78.7%. Household related: inactive pattern 26.4%. Leisure time related: inactive pattern 46.7%. Demographic related: Age related to inactive job pattern was younger (p = .008). Marital and age statuses related to inactive transportation pattern were unmarried (36%) and	1. Self-reported studies could bias results. 2. Results might not be generalizable to other KI women living in other US regions. 3. Causal inferences are not possible with cross-sectional studies.

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		older (p < .001) respectively.	
Donnelly and Kim (2008). Cross-sectional n = 79 older-aged KIs in NE metropolitan area	Examine the prevalence of depressive disorders using translated Korean version of the PHQ-9 K instrument.	Depression scores among five of the nine items were high with little interest or pleasure in doing things being the dominant factor (60.54%). 51% (n = 40) experienced some difficulty at home or interpersonal relationships due to depression.	1. Results might not be generalizable to all KI elderlies. 2. Causal inferences are not possible with cross-sectional studies. 3. Self-reports could bias results. 4. Findings might not be generalizable to KIs living in rural area.
Eun et al. (2009). Cross-sectional N = 187 KI women in metropolitan area of Illinois n = 73 older n = 114 younger	Identify the differences of health beliefs between older and younger KI women using HBMS-K instrument); Determine how health beliefs affect breast cancer screening rates between the two groups.	Health beliefs differed on all four HBMS-K subscales between older (>/= 65 years old) and younger (40 and 64 years old). Older KA women reported a significantly higher level of seriousness than the younger generation for breast cancer screening (p = .003).	1. The results might not be generalizable among KIs living in rural area. 2. Telephone surveys could bias the results since not all Korean women have phones or have Korean surnames, therefore missing potential participants. 3. Self-reports could bias results. 4. Causal inferences are not possible with cross-sectional studies.
Han et al. (2007). Retrospective analysis n = 14 studies conducted in the Baltimore-	Describe barriers to recruitment of KI for health promotion research; identify community facilitators who	Barriers and recruitment strategies at the individual (4 barriers, 4 strategies) and community (5 barriers, 6 strategies) levels were identified.	1. Interviewing team members years after the studies could bias the recollection of events.

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Washington area	could increase recruitment efforts.		
Han et al. (2010). Longitudinal (12 month duration) N = 360 middle-aged KIs, living in Baltimore-Washington area n = 182- More intensive n = 178 – Less intensive	Examine the effect of bilingual nurse-delivered telephone counseling in controlling hypertension and compare the key behavioral outcomes by the amount of counseling.	Both groups showed improvement to the intervention (telephone counseling) on hypertension management. Overall success rate for the intervention was 80.3%. The behavioral outcomes (being on medication, alcohol consumption, exercise) were significant during the counseling period ($p < .05$ for within-group). Smoking behavior did not improve significantly ($p > .05$ for within-group). Behavioral outcomes, except being on medication ($p < .05$), did not differ significantly between the more intensive and the less intensive group.	1. Self-reports could bias results. 2. No true control group was utilized; it might not be possible to determine if telephone counseling is better than usual care. 3. Findings might not be generalizable to other population of KIs, especially among less-educated and those living in rural area.
Hofstetter et al. (2010). Cross-sectional n = 2,085 adult	Correlate church attendance with smoking prevalence,	13% of the sample was currently smoking and 50% reported daily exposure to environmental tobacco smoke. Church attendance was a significant predictor to all	1. Self-reports could bias results. 2. Findings might not be generalizable to KIs who do not have access to Korean organizations and/or churches.

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KIs in CA	cessation, exposure to environmental tobacco smoke and household smoking bans among Korean immigrants.	four variables (p < .05). Church attenders were less likely to smoke (5.37%), be exposed to tobacco smoke (6.57%), resume smoking (11.63%), and allow smoking in the homes (7.24%) than non-attenders.	3. Amount of church attendance was not measured; therefore, correlation to the "dose effect" of church attendance and tobacco use might not be possible. 4. Causal inferences are not possible with cross-sectional studies.
Hwang and Zerwic (2006). Descriptive n = 119 KIs in a Midwestern metropolitan area	Assess knowledge of stroke symptoms and risk factors among Korean immigrants.	Cluster analysis revealed two distinct groups: Women in cluster one (n = 83) were more knowledgeable in stroke symptoms, were younger, married, and less likely to have hypertension. Women in cluster two (n = 36) were less knowledgeable in stroke symptoms but more knowledgeable in non-stroke symptoms, were older, less likely to be married, and have had hypertension. Women in cluster one (n = 63) were more knowledgeable in the stroke risk factors but women in cluster two (n =56) were more knowledgeable in the identifying non-stroke risk factor except for one factor (varicose veins). Same participants (94%) were in cluster one for both stroke symptoms and stroke risk factors.	1. Self-reports could bias results. 2. Results might not be generalizable to KIs who do not have access to community centers. 3. Small sample size might not allow generalization.
Jang et al. (2005). Cross-sectional n = 230 older KIs in two cities in Florida	Assess predictive models of subjective perception of health, healthcare utilization, and satisfaction with healthcare service.	Participants who were older, female, and less educated were significant predictors (p < .05) for negative health perceptions. Participants with chronic conditions and functional disability were significant predictors (p < .001) for negative health perceptions. Participants who were female, had poor health	1. Causal inferences are not possible with cross-sectional studies. 2. Small sample size could prevent generalizability. 3. Findings might not be generalizable to KIs living in rural area.

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		perceptions, have chronic conditions, and have health insurance were significant (p < .05) for healthcare utilization.	4. Self-reports could bias results.
		Enabling factors of lack of insurance, racial discrimination, poorer English speaking, and distrust of Western medical care were significant (p < .05) in decreasing healthcare satisfaction.	
		Being treated with disrespect due to ethnicity was not a significant factor on health perception; however, 25% did experience disrespect or other ethnic discrimination in healthcare settings.	
Jang et al. (2012). Cross-sectional n = 672 older KIs adults in two metropolitan cities in Florida n = 539 without diabetes	Examine subjective perceptions of health as a potential mediator in association between diabetes and depressive symptoms.	Participants with diabetes (n = 133, 20%) were significant for more medical comorbidity and functional disability, depressive symptoms, and poorer health perceptions (p < .01). Having diabetes significantly impacted health perceptions and symptoms of depression.

Final model in hierarchical regression model, poorer health perceptions were significant (p < .001) to having diabetes, poorer financial status, longer US residency, more medical comorbidity and functional disability.

Higher depressive symptoms were significant (p < .05) with young unmarried KI, greater functional disability, and poorer health perceptions. | 1. Causal inferences are not possible with cross-sectional studies.
2. Generalization of the results might not be possible among KIs in other geographically located region.
3. Self-reports could bias results.
4. Limited confounding variables were limited (did not consider alcohol consumption, body mass index, and smoking). |
| Jo et al (2008) Cross-sectional n = 151 KI adults in Los | Gain knowledge on predictors, facilitators, barriers, and intervention | 13/22 participants' characteristics were significant predictors (p < .05) for screenings rates.

The strongest barriers toward cancer screenings included lack of insurance (41%), cost prohibitive | 1. Small sample size might not allow generalizability of the findings to other KIs.
2. Findings might not be generalizable to other KIs since the characteristics of the sample |

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Angeles	preferences with respect to colorectal cancer screening.	(11%), language barriers (25%), lack of knowledge (30%), and fear of being a burden (21%). Interventional preferences included educational seminars (42%) with group seminars being overwhelmingly popular (94%), Korean media (30%), and printed materials (20%).	population were mostly uninsured. 3. Causal inferences are not possible with cross-sectional studies. 4. Self-reports could bias results.
Jo et al. (2010) Qualitative Exploratory n = 58 leaders from 23 faith and 3 non-faith based organizations in Los Angeles	Gain an in-depth understanding of Korean American churches with respect to conducting future health intervention research.	Data saturation of themes was achieved. Six major themes emerged: congregational health: Beyond spiritual; looking after the flock: meeting health and social needs; health needs of the Korean church memberships; barriers to adequate health care among Korean American church-goers; how can Korean American churches participate in health research; and suggestions for health interventions and research strategies. Korean churches and leaders seek to meet a variety of social and health needs of their congregation and the surrounding community. However, many leaders felt overwhelmed and frustrated stating they were not equipped with clinical knowledge or aware of available resources to help KIs health and healthcare needs.	1. Community leaders were known by the author or were referred by leaders who had already completed the interview, which could bias participating numbers and results. 2. Primary author conducted all the interviews, which could prevent the community leaders from fully expressing themselves during the interview.
Kim, (2011). Cross-sectional n = 64 mothers and n = 35 fathers living in Pacific Northwest	Explore the relationships between Korean American parental depressive symptoms and parenting; explore how the influence	No significant differences for depressive symptoms between mothers and fathers (p > .05). Multiple regressions showed that maternal depressive symptoms had a significant positive correlation to neglect, explaining 14% of variance (p < .05). Paternal depressive symptoms had a significant negative influence toward affection, explaining 35%	1. Self-reports could bias results. 2. Study used two self-reports which might result in false correlations. 3. Results might not be generalizable among KIs who do not have access to Korean organizations. 4. Reliabilities for the three control measures

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	of parental depressive symptoms differ between mothers and fathers.	of variance ($p < .001$) but had a positive influence toward hostility, neglect and undifferentiated rejection, explaining 31-35% of variance ($p < .001$).	were low, which could influence how parents interact with their adolescent children.
Kim, and Menon (2009) Prospective, repeated-measures, quasi-experimental N = 300 KI women > 40 years old in Chicago, IL Group I: Pre-contemplation (n = 21) Group II: Contemplation (n = 38) Group III: Relapse (n = 241)	Assess differences in acculturation, knowledge, beliefs, and stages of readiness for mammograms using pre- and post-interventions (GO EARLY educational session).	Group I women were younger, worked outside of the home, lacked health insurance, and did not have regular physician. Group III have resided in the US longer than the other groups. No significant differences were seen with interventions related to the stages of readiness for mammograms. In acculturation, knowledge, and beliefs, Group II had significantly lower knowledge scores than Group III ($F = 2.996$, $p < .05$); but Group I significantly perceived mammograms as not necessary as Group II or III ($F = 15.263$, $p < .01$). Post-intervention: significant positive changes were noted in Group III for acculturation ($p < .05$), knowledge, obstacles, self-efficacy, fear, modesty, and fatalism ($p < .001$) while Group I and Group II significant positive changes include knowledge, obstacles, and fatalism ($p < .001$). Additionally, Group II also had significant positive score on self-efficacy ($p < .001$).	1. Findings might not be generalizable among KI women who have been diagnosed with breast cancer. 2. Findings might not be generalizable to KIs living in rural areas nor those who can afford mammography screenings. 3. Self-reports could bias results.
Kim et al. (2011) Longitudinal (15 months)	Determine the sustainability in lowering blood pressure with short-term education via	More intensive group received biweekly telephone counseling while less intensive group received monthly telephone counseling. No significant improvements in more intensive and	1. No true control group could bias results. 2. Interventions were multi-faceted preventing precise conclusions for the two interventions (counseling versus home blood pressure

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N = 359 middle-age KI living in Baltimore-Washington Metropolitan area More intensive (n =182) Less intensive (n = 177)	home tele-monitoring and regular counseling by bilingual nurses.	less intensive groups at 3, 6, 12, and 15 months (p > .05); however, both groups were able to sustain the lower blood pressure at 15 months with the more intensive group showing greater control (68.86%) than the less intensive group. Scores for depression, self-efficacy, and blood pressure knowledge improved in the two groups but were not significantly different.	monitoring). 3. All participants not reporting same number of required blood pressure reports could skew the findings. 4. Variety of participants' demographics (56.8% worked full-time, 94.4% married, <40% lacked insurance, among other demographics) could skew the findings.
Kim, Kim, et al. (2009) Cross-sectional n = 118 KI adult male smokers in Northeastern US n = 93 at one-month follow-up	Examine the psychometric properties of a Smoking Abstinence Self-Efficacy Scale with Korean American men (SASES).	Cronbach's α for all instruments were > .70. The item-to-item and item-to-total correlations of the SASES were significant except for "when you feel happy and celebrate" (p > .05).	1. Results might not be generalizable to KIs living in other geographical locale. 2. Self-reported measurements could bias results. 3. Results might not be generalizable since the participants were not a representative sample of KIs. 4. Large attrition rate (n = 25) could bias results. 5. Test-retest validity might not be valid with long interval (1 month).
Lee, Eun, et al. (2011) Quantitative using telephone survey N = 189 KI women in	Compare the socio-demographic and healthcare related characteristics, knowledge, and health beliefs with receiving cervical cancer screening	There were significant differences in health beliefs between the older and younger groups of women. Older women had significantly higher perceptions of the seriousness, benefits, and barriers than younger women. Older women were more likely to obtain Pap test with decreased perceived barriers (p <.0001) and	1. Results might not be generalizable to KIs living in rural locale. 2. Self-report could bias results. 3. Significance level for the predictors was 0.10 which can skew the findings report. 4. Telephone recruitment could introduce

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Midwestern US 40-64 years old (*n* = 117) ≥ 65 years old (*n* = 72)	based on the Health Belief Model (HBM).	increased perceived benefits (*p* = .005); whereas, younger women were more likely to obtain Pap test when perceived barriers were decreased (*p* < .0001). Cervical cancer screenings were significant between the older (66.7%) and younger groups (95.7); Younger KI have had a pap test (*p* < .001). Younger KIs received pap test in the preceding three years (78.6%, *p* < .0001) compared to older KI (44.4%).	sample selection bias. 5. Results might not be generalizable to the general population of KIs. 6. Potential participants could have been overlooked in telephone recruitment (KIs who do not have Korean surname).

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Lee et al. (2009) Cross-sectional $N = 100$ adult KI women in Maryland history of mammogram ($n = 51$) no history of mammogram ($n = 49$)	Examine the correlations of mammogram use among Korean American women.	Women who had mammogram in the past were significantly older ($p < .001$) with mean age 58.5 years old and perceived benefits were significantly higher ($p < .05$) than those who never had a mammogram. Cultural factors with significant association include perceived susceptibility ($p < .05$) and perceived benefits ($p < .05$). *Post hoc* analysis revealed English competency (little or no skills) were significant barriers in obtaining mammograms ($r = .42, p = .001$).	1. Self-reports could bias results. 2. Causal inferences are not possible with cross-sectional studies. 3. Convenience sampling could prevent generalizability of the results.
Lee & Yoon (2011) Cross-sectional	Explore factors that influence the general well-being of low-income KI	Lack of English proficiency was a significant predictors for all six subscales of GWBS ($p < .001 – p < .05$). Length of residence in the US was significant predictor for all subscales except for	1. Purposive sampling could prevent generalization of the results. 2. GWBS instrument was not tailored

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n = 206 KI elders living in Los Angeles County and Orange County	elders using the General Well-Being Schedule (GWBS).	positive well-being (p > .05). Social Support was a significant predictor for all subscales except for general health (p > .05). Depression was the only significant subscale that correlated with age (p < .01). Religious/spiritual coping was significant predictor for anxiety, depression, positive well-being, and self-control (p < .05 for all subscales).	specifically for KIs which could be misconstrued by the KIs, thereby skewing the results. 3. Causal inferences are not possible with cross-sectional studies. 4. Findings might not be generalizable to rural area.
Maxwell et al. (2010) Post-randomization consent N = 116 adult KI women in Los Angeles Koreatown Intervention (n = 58) Usual care (n = 58)	Test an intervention (appointment reminders, education, face-to-face meeting, form completion, and emotional support) to assist KI women with breast cancer screening.	No significant differences were noted in the demographics (p > .1) and health-related characteristics (p > .1) between the two groups. Self-reported completion was significant between intervention (97%) and usual care (67%) (p < .001).	1. Small sample size could prevent generalizability of the findings. 2. Large attrition (176/116) rate could bias results. 3. Self-reports could bias results. 4. Interviewers were not blinded which could bias results. 5. Single peer navigator for the intervention group could limit the generalizability of the findings. 6. Findings might not be generalizable to KIs living in rural area. 7. p value set > .05 might bias results.
Shin (2011). Cross-sectional n = 517 adult Korean Americans in	Examine the health and physical activity of Korean American adults	Korean Americans who were younger (< 41 years old), male, unmarried, and physical/mentally fit were significant for vigorous activity (p < .05). Acculturation was positively correlated with more vigorous activity (p < .05). No significant differences were seen with education,	1. Findings in Table 3 were not congruent with the narrative. 2. Findings might not be generalizable to other KIs. 3. Causal inferences are not possible with cross-

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Midwestern city		income, and employment status.	sectional studies.
Sin et al. (2010) Qualitative using photovoice $N = 20$ in Seattle $n = 7$ adults $n = 6$ teenagers $n = 7$ children 9-12 years old	Describe cardiovascular health perceptions among multi-generational Korean immigrants using photovoice.	Similar perceptions among all participants were noted. Common theme promoting cardiovascular health was exercise. Common theme promoting poor cardiovascular health was diet.	1. Not utilizing all photos taken by participants could limit data saturation; lack of data saturation could skew results. 2. Convenience sampling could bias results. 3. Gender distributions were unequal which could bias results ($n = 13$ males; $n = 7$ females). 4. Level of education was unequal between the groups which could bias results.
Sin et al. (2011) Qualitative $n = 28$ adult KI in Puget Sound region of Washington State 2 groups of 7 women and 2 groups of 7 men	Understand perceptions of depression in KIs.	Causes of depression included language barrier, lifestyle changes, different culture/food, poor economic and social status, isolation, and loneliness. Ways KIs prevented or coped with depression included being socially interactive, attending churches, and staying busy (diligent). KIs interchanged acculturation stress with depression.	1. Data saturation is unknown; lack of data saturation could skew results. 2. Results might not be generalizable to other KI population. 3. Level of education was unequal which could skew results. 4. Participants' ages (40 – 81 years old) varied widely within each group which could bias results. 5. Length of US residency was unequal which could bias results.
Yang (2007) Cross-sectional $n = 137$ adult KI women in	Determine how KI women perceived health and to identify associations	Among all variables, length of residency and participation in exercise were significant predictors to the perception of health status ($r = .226$, $p < .001$; $F = .445$, $p = .022$, respectively). 48.9% of participants rated their health as fair or poor.	1. KIs with health problems affecting mobility were excluded, which could bias the findings. 2. Nonprobability sampling might not be representative of the total population of KI, thereby results might not be generalizable to

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Central TX	between social indicators and the health of KIs.		other KIs. 3. Length of US residency and level of education could bias results.
Yoo et al. (2008) Mixed-method $n = 14$ interviews $n = 268$ surveys adult Korean Americans in large metropolitan areas in CA	Determine barriers and challenges to health service use among insured and uninsured KIs.	There were no significant differences in using health services between the two groups except for the use of traditional Korean health services such as herbalist/acupuncturist ($p = .014$), furthermore, high deductibles and premiums prevented insured participants from using available health services.	1. Data saturation is unknown; lack of data saturation could skew results. 2. Findings might not be generalizable to KIs living in rural areas. 3. Potential bias from mismatched number of interview compared to survey respondents.
Yoo and Zippay (2012) Qualitative Cross-sectional $N = 15$ elder KIs in central New Jersey $n = 13$ females and $n = 2$ males	Examine the composition and cultural context of the social networks, resources, and supports among low-income elder KIs.	Non-kin KIs and Korean organizations were the primary sources of social contacts. Most cited socialization barriers were related to Language and transportation difficulties.	1. Data saturation is unknown; lack of data saturation could skew results. 2. Findings might not be generalizable to the general population of KI population, especially those living in rural area. 3. Low number of respondents could bias results. 4. Gender inequality could bias results.