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Social Disconnection and Metabolic Syndrome Score among Cambodian Americans with Depression

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Abstract

Aims: Migrants experience social disconnection and also have high risk for metabolic syndrome (MetS). This study explored associations of social alienation, social isolation, and social support with MetS among Cambodian Americans.

Methods: We conducted secondary data analysis on baseline assessments from a diabetes prevention trial for Cambodian Americans with depression and high risk for diabetes. Participants were aged 35–75, Cambodian or Cambodian-American, Khmer speaking, lived in Cambodia during the Pol Pot regime, lived in the northeastern U.S. at the time of study, endorsed elevated risk factors for diabetes and met criteria for depression by medication for depression and/or elevated depressive symptoms. They completed surveys and provided anthropometric and blood pressure measurements and fasting blood samples.

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Conflict of interest

Outside of the current work, Orfeu M. Buxton discloses that he received subcontract grants to Penn State from Proactive Life LLC (formerly Mobile Sleep Technologies) doing business as SleepScape (NSF/STTR #1622766, NIH/NIA SBIR R43-AG056250, R44-AG056250), received honoraria/travel support for lectures from Boston University, Boston College, Tufts School of Dental Medicine, New York University and Allstate, and receives an honorarium for his role as the Editor in Chief of Sleep Health (sleephealthjournal.org).

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Results: In multiple linear regressions, greater social alienation was associated with increased risk for MetS. The social alienation-MetS association was stronger in men than women. Associations were not better accounted for by crude indicators of social isolation such as marital status and number of people in the household. Social support was not associated with MetS and did not buffer the deleterious association between social alienation and MetS.

Conclusions: Decreasing social alienation may mitigate risk for MetS among migrant populations.

Keywords

metabolic syndrome; social alienation; social support; depression; Cambodian; diabetes

1. Introduction

Metabolic syndrome (MetS) is a strong predictor of mortality including among east Asians and individuals without diabetes [1]. Moreover, the likelihood of vascular mortality increases as the number of MetS components increases. Immigrants and refugees have been shown to have higher risk for metabolic syndrome (MetS) compared to individuals without migration history [2]. The factors that put migrants at increased risk for MetS are not well elucidated. Psychosocial variables common to the migrant experience such as symptoms of trauma exposure and depression, as well as the medications used to treat them, are associated with MetS in non-migrant populations [3, 4]. Less is known about risk conferred by other psychosocial vulnerabilities common to migrants including disruption to social connection. This study conducted secondary data analysis to explore associations of social alienation with MetS among resettled Cambodian Americans with depression.

Social disconnection is a public health priority in the United States [5] because social disconnection worsens mental and physical health and hastens mortality while social relationships and social support promote mental and physical health [6]. Social disconnection is multifaceted and be deconstructed into various forms. Social alienation is a type of social disconnection that refers to interpersonal and societal estrangement. Different operationalizations have been applied to social alienation but common features include withdrawal from relationships, detachment from others, a lack of openness to relationships, loneliness and feeling isolated [7, 8]. Social alienation has been consistently linked to a history of victimization, though this has primarily been studied in college-aged populations and children [7, 9]. Victimization and trauma among migrants is commonplace [10, 11] and they, too, may experience social alienation [8] that increases their risk for poor outcomes [12]. Social isolation is a different but related form of disconnection that refers to a low number of social connections and infrequent contact. Social isolation also increases mortality risk [13]. Social support is multifaceted and may include support that is instrumental, informational, emotional, and meets needs for companionship and affection.

Social disconnection may be an important factor for understanding the disproportionate rates of cardiometabolic disease among migrants. Self-reports of social disconnection are high in Cambodian American communities, particularly among older members, teens and young adults [14, 15]. The current study examined the relationships between social alienation and

MetS among Cambodian Americans who have depression and elevated risk for diabetes. Specifically, we asked: 1) Is social alienation associated with increased MetS score and is that association better accounted for by social isolation or symptoms of depression or post-traumatic stress? 2) Do these relationships vary by sex? 3) Does greater social support reduce risk for MetS? And, 4) Does social support buffer any deleterious association between social alienation and MetS?

2. Methods.

2.1 Design

Secondary data analysis was conducted on baseline assessments from a diabetes prevention trial for Cambodian Americans with depression, the Diabetes Risk Reduction through Eat, Walk, Sleep and Medication Management (DREAM) trial ([clinicaltrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT02502929) identifier NCT02502929).

2.2 Participants and sampling

Data for this study are from participants who enrolled in a diabetes prevention trial designed for Cambodian Americans with depression. Participants were recruited from social service agencies, medical and mental health clinics, temples and churches, and Cambodian businesses. Inclusion criteria were: 1) aged 35–75; 2) Cambodian or Cambodian-American; 3) Khmer speaking; 4) currently living in Connecticut, Massachusetts, or Rhode Island (northeastern U.S.); 5) had lived in Cambodia during the Pol Pot regime (1975–1979); 6) ambulatory; 7) consumed meals by mouth; 8) elevated risk for diabetes per the American Diabetes Association Risk Test [16] modified for this population; and, 9) met criteria for depression by a) current antidepressant medication, and/or, b) elevated depressive symptoms indicative of likely major depressive disorder on the Khmer language Hopkins Symptom Checklist [17] on two occasions that were two weeks apart during a study screening and eligibility period. Exclusion criteria were: type 2 diabetes; seeing or hearing problems that would interfere with group sessions; major medical problems requiring intensive treatment; pregnancy or planning pregnancy; serious thinking or memory problems (e.g., from schizophrenia or dementia); has spent 3 or more days in a psychiatric hospital in the past 2 years; has tried to harm self in the past 2 years. Data were drawn from the baseline assessments which were conducted from March 2016 to March 2019.

2.3 Procedures

All procedures were approved by the UConn Health institutional review board. Participants signed written informed consent forms in their preferred language (Khmer or English). All survey, blood pressure, and anthropometric data were collected by bilingual Cambodian-American community health workers. Assessments were conducted in a private setting at a location of the participant's choice, either in-home or at a local clinic or social service agency. To facilitate verbal survey administration to this low-literacy, low-numeracy population, the community health workers showed participants pictograms displaying response options for each measure, as we have done in previous studies [18].

Following recommended procedures [19], weight was measured on a hard floor surface using the calibrated electronic Seca (Chino, California) digital scale with an accuracy of 0.1 kg, after removing heavy clothing, pocket items, and shoes. Height was measured with the Seca portable stadiometer, to the nearest 1.0 cm with the participant's head positioned in the Frankfurt horizontal plane, after removing heavy clothing, pocket items, and shoes. The average of two trials was used for both weight and height, unless measures were separated by a minimum of 1.0 cm or 0.5 kg, in which case, one additional measure was taken. Body mass index was calculated as $BMI = \text{kg}/\text{m}^2$. Waist circumference was measured twice at the umbilicus with an inelastic tape to the nearest 0.1 cm. Following recommended procedures [20], blood pressure was measured twice with calibrated digital sphygmomanometer (Omron, Hoffman Estates, IL). For all biometrics, discrepant values triggered a third measurement and the two closest values were averaged. On a separate day, participants presented to a nearby Quest Diagnostics to provide a fasting blood sample. Participants were paid \$10 USD each for completing the surveys and the blood draw (\$20 total) in gift cards to a local pharmacy.

2.4 Measures

Demographic Characteristics—Demographic Characteristics included in modeling were age, sex, education attainment, employment status, income, religion, and insurance status. Demographic indicators of social isolation included marital status (married vs not), living alone (yes vs no), and number of people in the household.

Social Alienation—Social Alienation was measured with items that tap into domains of subjective detachment, withdrawal, isolation, loneliness, and lack of openness. We selected one item from the Khmer language version of the Harvard Trauma Questionnaire [21] regarding “feeling detached or withdrawn from people”; and one item from the Khmer language version of the Hopkins Symptom Checklist [17] regarding “feeling lonely”; response options were on a 4-point scale with higher scores indicating greater intensity. We translated one item from PROMIS test bank [22] that asks about “feeling isolated from other people” and one item from the Khmer language *baksbat* questionnaire [23] regarding loss of openness to others; response options were on a 5-point scale with higher scores indicating greater frequency. Responses were converted to z-scores and combined into a summary ‘social alienation’ score. Factor analysis supported a single factor with eigenvalue=2.1 that explained 53% of the variance, and coefficient alpha=0.69.

Social Support (SS)—Social Support (SS) was measured with four items from the PROMIS test bank [22] that tap into domains of instrumental, informational, emotional, and companionship support as well as one item from the Enriched Social Support Instrument [24] which taps into love and affection. Responses were on a 5-point scale with higher scores indicating greater social support. Responses were summed; factor analysis supported a single factor with eigenvalue=2.5 that explained 51% of the variance, and Cronbach's alpha = 0.76.

Mental Health—To examine whether any effects of social disconnectedness were better accounted for by mental health problems, we assessed symptoms of Post-Traumatic Stress

Disorder (PTSD) with the 16-item symptom subscale of the Khmer language version of the Harvard Trauma Questionnaire [21] and symptoms of depression with the 15-item depression subscale of the Khmer language version of the Hopkins Symptom Checklist [17]. Participants also responded yes or no to an item asking whether they took medications prescribed by a doctor for depression or other emotional problems such as post-traumatic stress disorder, *baksbat*, or ‘thinking too much’ (a Cambodian idiom of emotional distress).

Metabolic Syndrome (MetS)—Metabolic Syndrome (MetS) was defined by International Diabetes Federation criteria applying Asian-specific cutpoints [25]: waist circumference ≥ 90 cm for men and ≥ 80 cm for women or body mass index >30 kg/m², plus any 2 of: triglycerides (TG) ≥ 150 mg/dL, high density lipoproteins (HDL) <40 mg/dL (men) or <50 mg/dL (women), systolic blood pressure ≥ 130 or diastolic ≥ 85 , and fasting glucose ≥ 100 mg/dL. At Quest Diagnostics, fasting glucose, triglycerides, and HDL were measured with spectrophotometry. A MetS continuous score of 0–7 was created from summed number of criteria met as in previous studies including Asian populations [26].

2.5 Data Analysis

Checks were performed for assumptions of normality, skewness, linearity, and homoscedasticity and undue influence of outliers, and were found to be adequate. A series of multiple linear regression were performed to test associations of social alienation, social isolation, and social support with MetS score. Interaction terms for social alienation * sex and social alienation * social support were created and entered along with main effects into the equation. Follow-up regressions controlled for demographic and clinical characteristics. Data analysis was conducted in SPSS v21.

3. Results

3.1 Participants

Participants (n=187) were age M=55.2 (SD 8.8) years, 78% women, 50% married, 87% Buddhist, modal household income $< \$20,000$, approximately one third employed (32% full-time and 4% part-time), education M=6.9 years, and 87% spoke Khmer at home (see Table 1). Their mean MetS score was 2.1 (SD 1.2) and 125 (67%) met criteria for having MetS.

3.1 Social Connectedness and MetS

In correlations, MetS score was significantly correlated with social alienation, $r=0.17$, $p=.020$ (see Table 2). A linear regression model with social alienation as the independent variable, age and sex as covariates, and MetS score as the dependent variable, resulted in social alienation being a significant predictor of MetS score ($\beta=0.17$, $p<.05$) with higher social alienation associated with greater number of MetS components (see Table 3 for regression results). Neither age nor sex were significant predictors, $p>.10$. Adding a social alienation * sex interaction term to the model resulted in a significant interaction ($p<.05$). Subsequent simple effects analysis revealed the relationship between social alienation and MetS score was stronger among men ($\beta=0.40$, $p<.05$) than women ($\beta=0.11$, $p>.10$). When the social isolation variables marital status (married vs not), living alone (yes vs no), and number of people in the household (continuous) were entered into the model, the effect

for social alienation remained significant ($\beta=0.16$, $p<.05$). In this model, marital status, living alone, and number of people in the household were not significantly related to MetS score and the social alienation * sex interaction remained significant ($p<.05$).

In correlations, MetS score was not significantly related to social support, $r=-0.09$, $p>.10$ (Table 2). A regression model with both social support and social alienation controlling for age and sex resulted in no significant effect for social support ($\beta=-0.04$, $p>.10$) but a significant effect for social alienation ($\beta=0.16$, $p<.05$). Adding a social alienation * social support interaction term resulted in no significant effect ($p>.10$).

In correlations, MetS score was not significantly related to symptoms of PTSD, symptoms of depression, or use of psychiatric medications, all $p's>.10$.

4 Discussion

MetS is a significant risk for early mortality, including among Asians and those without extant diabetes [1, 27], and mortality risk rises as the number of MetS components increases. The main findings from this study are that 1) social alienation is associated with increased MetS score among Cambodian Americans, 2) the social alienation-MetS association is stronger among men than women, and, 3) social support is not associated with MetS score and does not buffer the deleterious association between social alienation and MetS score.

Social alienation is a common and potent experience for many first generation and later waves of migrants [8]. Social alienation among migrants may stem from cultural differences between their home country and country of resettlement [12], difficulties integrating into the new society [28, 29], and experiences of racism, discrimination and bullying in the country of resettlement [30, 31]. Moreover, when Cambodians arrived in the U.S., with the exception of communities in Massachusetts and California, they were resettled in geographically dispersed locations which made it difficult for cohesive communities to form in some locales. Evidence suggests that higher neighborhood immigrant density protects against social alienation [32].

Social alienation among Cambodian Americans specifically may have additional antecedents. History of victimization in Cambodia under the Pol Pot regime included experiencing, witnessing, and in some cases being forced to perpetrate, atrocities. In addition, endorsement of social alienation by Cambodian Americans may signal withdrawal and detachment from their *own* immigrant community, not just mainstream American culture. Some families experience intergenerational disconnection and conflict because of parental migrant and trauma background [33]. Cambodian American communities suffer from division and discord going back to geopolitics in the mid-20th century that persist in current day religious and business spheres. Relationships even - or especially - within the Cambodian American community may be fraught with complex fractures and alliances.

Social alienation, i.e., withdrawal and detachment, exerts unique effects above and beyond social isolation, i.e., a limited number of contacts. Mechanisms linking social alienation to MetS score are open for hypothesis. Social disconnection is associated with biological perturbations such as inflammation, hypercortisolemia, sympathetic nervous system

activation and reduced quality and duration of sleep [34]. Social alienation is also associated with health risk behaviors such as substance abuse [35]. Further research should explore the mechanisms that link social alienation to MetS score.

Further study is also needed to understand why the relationship between social alienation and MetS score was stronger in men than in women. In our work with Cambodian Americans, we have observed that men may be more politically oriented than women. The community suffers from harsh and divisive politics regarding the government in the home country. We speculate that noxious social interactions and fear of reprisal for political affiliation or opinion may lead to men's withdrawal and detachment from other Cambodian men. We also speculate that men may 'lose face' due to joblessness in the U.S. and withdraw from social life [36]. Mastery of the new cultural environment has been shown to dampen physiological responses to stressors among immigrant men [37].

In this sample, social support was not found to buffer the deleterious association between social alienation and MetS. Social support items tap into having someone available to meet one's own various needs. Yet, one study found that *fulfilling* social roles is protective against mortality, with the feeling of 'being needed' the most protective factor for reduced mortality [38]. Social support reflects the degree to which an individual has access to helpful relationships. It does not, however, reflect the perception of *being* helpful, needed, or of value to society. This may explain similarly counter-intuitive findings that among Japanese men, higher social support is associated with greater risk for MetS [39]. Brainwashing during the Pol Pot regime was infamous for the phrase, "to kill you is no loss, to keep you is no gain", deliberately eroding any sense of being of value to society and promoting social alienation. In one study, social alienation, feeling like a burden to others, and feeling that one 'does not matter', predicted suicidality [7].

Notwithstanding these points, our findings are in contrast to much of the literature on the relationship between social support and MetS with Western populations that show that higher social support is associated with lower risk for MetS or components of MetS [40]. Perceived social support has been found to be associated with psychological well-being and health [41], including in Cambodian refugee adolescents exposed to war trauma outside of the United States and community violence in the United States [42]. Additionally, some research finds that social support buffers the harmful effect of stress on health and health behaviors [43].

Similarly, previous research has found associations between MetS and symptoms of depression and PTSD [3] that were not observed in our study. However, some studies that have examined ethnic differences show that the depression-MetS association is weaker among Asians than westerners [3]. Because all participants in our study had either elevated depressive symptoms or took medications for depression, we were not able to examine whether *presence* of depression was associated with MetS. Thus, our findings may reflect either a relatively weaker association among Asians, a restricted range in symptoms of depression and PTSD in this sample that was selected for depression, and/or our relatively small sample size. We also hypothesize that standard mental health measures that have been

translated into Khmer are limited in their ability to capture some cultural expressions of emotional distress.

Increasing social connectedness should be a priority. Typically, such strategies are aimed at increasing social support. If replicated, our findings suggest that instead (or in addition), strategies should aim to decrease social alienation. This is a subtle but important difference. A wide network of contacts that are available to provide support will be of limited benefit as long as the individual remains withdrawn, detached, and closed off to relationships. We recommend a community-based, participatory approach to understanding social alienation and designing culturally-based, trauma-informed interventions. Bilingual and bicultural community health workers who are imbedded in multidisciplinary teams are particularly well suited to undertake this work. One such intervention is *Eat, Walk, Sleep*, which was developed with a community based participatory approach. It was specifically designed to be delivered by community health workers for the prevention of cardiometabolic disease and has shown promising results [44]. Gender specific groups could be implemented to provide an environment particularly suited for Cambodian men.

Broader policy changes could also promote integration into the society of the host country. Some host countries have drafted integration policies that promote work-related language acquisition, contact with citizens of the host country, and carefully consider locale of resettlement, as well as the needs of elderly, low-educated, illiterate and disabled migrants. Other countries are developing ‘welcoming’ programs that aim to enhance integration through intercultural community centers, welcoming festivals, and cross-cultural exposure among children [45].

4.1 Limitations

Several limitations should be considered. First, data were collected cross-sectionally so temporal precedence and causation cannot be established. It remains plausible that increased MetS score directly or indirectly increases risk for social alienation. For example, a high BMI may lead to experiences of weight-based discrimination or social distancing that may lead to social alienation. Alternatively, both conditions might be linked by an underlying third factor, such as genetic predisposition. The association between social alienation and MetS could also be bidirectional. To determine bidirectionality and/or temporal precedence, future studies should follow migrant samples prospectively from early in the migration trajectory. We performed secondary data analysis, so lack of findings for social support and symptoms of depression and PTSD are subject to type II error. Whereas our measure of social alienation had the benefits of using Khmer idioms and showed preliminary evidence for face, concordant, factorial, and predictive validity as well as adequate psychometric properties, it was not specifically designed a priori to assess social alienation. More research is needed to evaluate its validity. Future studies should employ structured measures of social alienation. Such measures should employ cultural idioms like the *baksbat* questionnaire does. The measure of social support consisted of 5 widely used items combined from 2 existing measures and would also benefit from validity and reliability testing. Finally, findings may not generalize to other populations. This sample is a unique group of long-resettled southeast Asian migrants, most of whom arrived as refugees, and who currently

have depression and high risk for diabetes. Lack of generalizability may be particularly germane for the findings that mental health symptoms and medications are unrelated to MetS score. These limitations are generally outweighed by strengths including testing competing influences of both social alienation and social support, a measure of alienation that includes important cultural idioms, strict adherence to MetS criteria, an enriched sample of participants with depression and high risk for diabetes, and an understudied population.

4.2 Conclusion

Among Cambodian Americans with depression and diabetes risk, social alienation was associated with increased MetS score and this relationship was stronger in men than women. Given the serious potential consequences of MetS, efforts to treat or prevent the development of alienation and MetS should be a priority.

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Table 1.

Demographic and clinical characteristics

| Characteristic | Frequency (%) or Mean \pm SD |
|-----------------------------------------|--------------------------------|
| Years of Education | |
| Mean \pm SD | 6.9 \pm 5.0 |
| Employment Status | |
| Working | 68 (36%) |
| Retired | 18 (10) |
| Unemployed | 5 (3) |
| Disabled | 58 (31) |
| Homemaker | 16 (9) |
| Other | 23 (12) |
| Household Income | |
| Under \$20,000 | 83 (44%) |
| \$20,000–\$30,000 | 41 (22) |
| \$31,000–\$40,000 | 17 (9) |
| Over \$40,000 | 27 (14) |
| Don't Know/Refused | 20 (11) |
| Religion | |
| Buddhist | 164 (87%) |
| Christian | 15 (8) |
| Other | 2 (1) |
| None | 4 (2) |
| Don't Know/Refused | 3 (2) |
| Health Insurance | |
| Medicare | 45 (24%) |
| Medicaid | 62 (33) |
| Private | 64 (34) |
| Other | 8 (4) |
| Don't Know/Refused | 9 (5) |
| Waist circumference (cm) total | 91.4 \pm 13.2 |
| Men | 93.5 \pm 12.3 |
| Women | 90.8 \pm 14.0 |
| Body Mass Index (kg/m ²) | 27.0 \pm 4.3 |
| Triglycerides (mg/dL) | 138.7 \pm 7.0 |
| High Density Lipoproteins (mg/dL) total | 52.9 \pm 15.5 |
| Men | 44.0 \pm 13.7 |
| Women | 55.4 \pm 15.1 |
| Systolic Blood Pressure (mmHg) | 126.4 \pm 20.3 |
| Diastolic Blood Pressure (mmHg) | 81.2 \pm 11.1 |
| Fasting Glucose (mg/dL) | 88.8 \pm 11.4 |

Table 2.

Descriptive Statistics and Correlations

| | Mean \pm SD or % | Correlations | | | | | | | | | | |
|-------------------------------|--------------------|--------------|---------|-------|---------|--------|---------|--------|--------|--------|------|--|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| 1. Social alienation z-score | 0.0 \pm 2.9 | | | | | | | | | | | |
| 2. Social support | 13.5 \pm 4.9 | -0.24** | | | | | | | | | | |
| 3. Age | 55.2 \pm 8.8 | 0.10 | -0.02 | | | | | | | | | |
| 4. Sex (1=woman, 2=man) | 78% women | -0.17* | -0.12 | -0.01 | | | | | | | | |
| 5. Married (1=yes, 2=no) | 50% yes | 0.23** | -0.38** | 0.15* | -0.10 | | | | | | | |
| 6. Living alone (1=yes, 2=no) | 12% yes | 0.08 | -0.23** | 0.04 | -0.04 | 0.33** | | | | | | |
| 7. Number in the household | 3.5 \pm 1.7 | -0.09 | 0.19** | -0.08 | 0.03 | -0.21 | -0.52** | | | | | |
| 8. Depressive symptoms | 1.9 \pm 0.7 | 0.80** | -0.30** | 0.17* | -0.25** | 0.28** | 0.12 | -0.18* | | | | |
| 9. PTSD symptoms | 1.9 \pm 0.6 | 0.81** | -0.20** | 0.08 | -0.23** | 0.24** | 0.12 | -0.12 | 0.87** | | | |
| 10. Psychoactive medications | 28% yes | 0.19* | -0.02 | 0.05 | -0.14 | 0.03 | 0.07 | -0.11 | 0.30** | 0.30** | | |
| 11. MetS score | 2.1 \pm 1.2 | 0.17* | -0.09 | 0.12 | 0.04 | 0.13 | -0.01 | 0.00 | 0.12 | 0.12 | 0.01 | |

Note:

**
 $p < .01$;*
 $p < .05$;

PTSD = post-traumatic stress disorder; MetS = Metabolic syndrome

Table 3.

Standardized Linear Regression Models Predicting MetS Score

| Predictor | beta | t | P-Value | Model R ² |
|---------------------------------|-------|-------|---------|----------------------|
| <i>Model 1: Main Effects</i> | | | | |
| Age | .102 | 1.42 | .159 | .046 |
| Sex (Male) | .082 | 1.12 | .265 | |
| Social Alienation | .174 | 2.37 | .019 | |
| <i>Model 2: Interaction</i> | | | | |
| Age | .102 | 1.42 | .156 | .066 |
| Sex (Male) | .122 | 1.62 | .106 | |
| Social Alienation | -.278 | -1.16 | .248 | |
| Gender*Alienation | .482 | 1.98 | .049 | |
| <i>Models 3: Simple Effects</i> | | | | |
| Female | | | | .042 |
| Age | .160 | 1.94 | .054 | |
| Social Alienation | .111 | 1.35 | .180 | .159 |
| Male | | | | |
| Age | -.067 | -0.46 | .650 | |
| Social Alienation | .398 | 2.70 | .010 | |
| <i>Model 4: Additional</i> | | | | |
| <i>Covariates</i> | | | | |
| Age | .090 | 1.24 | .216 | .078 |
| Age | .128 | 1.71 | .089 | |
| Sex (Male) | .115 | 1.46 | .146 | |
| Married | -.054 | -0.62 | .537 | |
| Living Alone | .010 | 0.12 | .906 | |
| People in Household | -.304 | -1.26 | .211 | |
| Social Alienation | .489 | 2.00 | .047 | |
| Sex*Alienation | | | | |

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