Published in final edited form as:

Am J Health Behav. 2013 September ; 37(5): 620–628. doi:10.5993/AJHB.37.5.5.

Social Support among Immigrant Latino Men: A Validation Study

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Abstract

Objective—To explore the factor structure of the Index of Sojourner's Social Support (ISSS) within a sample of Spanish-speaking immigrant Latino men.

Methods—We explored the factor structure and calculated correlations to examine associations between the ISSS subscales and self-esteem, mastery, and depression.

Results—Mean age of the 244 participants was 26.9 years old and most were from Mexico, had less than high school educational attainment, and worked in construction. The ISSS did not perform as well as expected.

Conclusions—Although the ISSS may prove useful as we begin to conceptualize the role and meaning of social support within the context of immigration, more research is needed to develop meaningful measures of constructs among immigrant Latinos in the United States.

Keywords

Hispanic; Latino; community-based participatory research; CBPR; measurement; social support

Social support is an important factor in predicting the physical health and psychological wellbeing of individuals across the lifespan. Social support also has been shown to buffer the physical and mental health effects of stressful life events. Moreover, individuals with higher levels of social support, compared to those with lower levels, tend to have higher levels of physical and mental health regardless of stress.¹⁻⁴ Despite linkages between social support and health status, little is known about social support among immigrant populations,^{5,6} and most measures of social support do not incorporate the unique context of immigration.⁷

For immigrant populations, the challenges of homesickness, language difficulties, and unfamiliar customs and cultural expectations, may not be captured sufficiently in existing measures of social support (eg, Interpersonal Support Evaluation List;⁸ The Social Provisions Scale;^{9,10} Multidimensional Scale of Perceived Social Support;¹¹ and Inventory of Socially Supportive Behaviors¹²). Furthermore, immigrant populations, by definition, may experience immediate loss of existing social support structures while at the same time their need for social support may increase. Immigrants may need informational support such as finding a place to live and work; emotional support such as physical comfort, listening, and empathizing; tangible support such as help with childcare or a problem being faced; and esteem support such as encouragement and expressions of confidence.

The Index of Sojourner Social Support (ISSS) was developed to assess social support within the context of immigration.¹³ Items for the ISSS were generated by English-speaking individuals (N=37 men and 17 women) who were in Singapore studying or working. All were originally from other parts of Asia, Europe, North America, or Oceania. Subsequently, a scale construction and validation study included 314 international participants for the initial establishment of the ISSS and 112 for cross-validation. Participants were in Singapore; all were originally from Africa, other parts of Asia, Europe, the Middle East, North America, or Oceania. From this scale construction and validation study, investigators identified an 18-item, two-factor structure as fitting both subsamples (n=314 and n=112). The two factors were Perceived Socio-emotional and Perceived Instrumental Support. Factor loadings for the 18 items ranged from .66 to .82, and the entire ISSS had excellent internal consistency ($\alpha=.95$); each factor had excellent internal consistency ($\alpha=.93$). Furthermore, greater Perceived Socio-emotional Support and greater Perceived Instrumental Support were associated with a higher sense of mastery and self-esteem and lower feelings of depression.

International students (n=85 men and n=142 women) taking under- and postgraduate courses at universities in New Zealand participated in the cross-cultural adaptation study. Within this sample, the two-factor structure was validated, and the entire ISSS had excellent internal consistency ($\alpha=.95$); each factor had excellent internal consistency ($\alpha=.92$).¹³

Although the ISSS has been used in a variety of populations, including adult foreign nationals in Russia,¹⁴ Korean women living in North America with their spouses living in Korea,¹⁵ German nationals working overseas,^{16,17} and international students at Irish universities,¹⁸ research is needed to examine the factor structure of the ISSS among samples of immigrant Latinos, including Latino men. We sought to explore the underlying factor structure of the ISSS in a sample of recently arrived, Spanish-speaking, less-aculturated

immigrant Latino men and examine the relationships between ISSS factors and variables that have been shown to be related to social support previously.

METHODS

Setting and Sample

Immigrant Latinos comprise a rapidly growing community in the United States. Latinos account for 16 percent of the population, and by 2050, it is estimated that Latinos will constitute 30% of the population. The Latino population is less concentrated than in 2000 and has grown more dramatically in states that traditionally had smaller immigrant populations (ie, southeastern United States). North Carolina has one of the fastest growing Latino populations in the United States and has seen a major population increase in areas with no history of Latino migration;^{19–21} this immigrant population tends to be: more likely male, younger, less acculturated, and more recently arrived; and have lower educational attainment than immigrant Latino populations in other regions in the United States.^{20–23}

Data used in this analysis came from the baseline assessment of a large lay health advisor intervention study entitled “The Latino Partnership” in North Carolina. This ongoing study is designed to test an enhanced version of the **HoMBReS** intervention, an efficacious community-level social network intervention designed to increase condom use and HIV testing among heterosexual immigrant Latino men who are members of soccer teams.^{24–27} The enhanced intervention, known as **HoMBReS: Por un Cambio**, includes the recruitment, training, and ongoing support of lay health advisors (known as Navegantes [Navigators]) from soccer teams to provide health information and referrals, distribute prevention resources including condoms, promote testing for HIV and sexually transmitted diseases, and reframe negative and bolster positive socio-cultural expectations about risk and prevention.

From a total of about 200 soccer teams in three leagues that span multiple counties in northwest North Carolina, with more than 3,600 adult Latino men, 20 teams were selected and recruited to participate. The study was presented during league and team meetings. Each team that was approached chose to participate. We collected data from each Navegante (N=20) and a random sample of 12 of his soccer teammates. Inclusion criteria for participation were self-identifying as Latino or Hispanic and greater comfort speaking in Spanish (as opposed to English); being a member of a soccer team that was selected to participate; being 18 years of age or older; and providing informed consent. To assess comfort speaking in Spanish we asked, “In which language do you feel most comfortable communicating?” Response options included “Only Spanish”; “More Spanish than English”; “Both equally”; “More English than Spanish”; and “Only English”. Those who would reply “More English than Spanish” or “Only English” would not be eligible; however, because of the context of the teams, 100% of teammates were Spanish speaking.

The participation rate was 100%. Data were collected for a total of 262 teammates (1 Navegante and 12 teammates per team). We collected data from two extra teammates, a result of multiple data collectors recruiting participants and collecting data simultaneously in

the field. Each participant was compensated \$30 for his time completing the baseline assessment.

Three trained native Spanish-speaking Latino male interviewers collected data using an interviewer-administered assessment that took about 90 minutes to complete. Audio Computer Assisted Self-Interview (ACASI) was not used given formative data^{21,28,29} that suggested that participants were more likely to engage with a well-trained interviewer who could establish rapport and trust. This approach was thought to be culturally congruent given that some Latinos value *personalismo*, which is a cultural feature that emphasizes the importance of friendly interactions and interpersonal engagement.^{30,31} Furthermore, utilizing an interviewer-administered assessment overcame both poor literacy and vision. The interviewers also were experienced in survey research and sexual health research within Latino communities.

Measurement

The assessment included 170 items with predefined response categories. Response categories for each item used binary, categorical, or Likert-scale responses to facilitate administration. It assessed a variety of characteristics, psychosocial constructs, and behaviors. Items pertinent to this analysis included demographic characteristics (eg, age, country of origin, educational attainment, employment status, monthly income, and sexual orientation). We also assessed mastery, self-esteem, and depression. Mastery over life's circumstances was measured using an established measure³² that we have used previously with immigrant Spanish-speaking Latino men.^{24,33} We assessed self-esteem using the widely used six-item Rosenberg Self-Esteem scale³⁴ and depression using the Center of Epidemiological Studies Depression (CES-D) Scale. The CES-D is a valid and widely used 20-item scale based on self-report.³⁵ For each of these measures, higher scores indicated greater adherence to or amount of the construct measured.

We also used the 18-item Index of Sojourner Social Support (ISSS). Items are provided in Table 1. Responses were on a 5-point Likert scale. Response options were: 0= "No one would do this"/"Nadie haría esto"; 1= "Someone would do this"/"Alguien haría esto"; 2= "A few would do this"/"Algunos harían esto"; 3= "Several would do this"/"Varios harían esto"; and 4= "Many would do this"/"Muchos harían esto".

Each measure either existed in Spanish or was translated into Spanish by a Latino-owned company using a "committee approach". This approach addresses weaknesses in traditional translation/back-translation by using a committee whose members have skills beyond those of a translator.^{36,37} The approach entails convening individuals with complementary skills (eg, translators, subject matter specialists, a questionnaire design expert). Multiple translators independently translate the items and then convene the committee to work together to iteratively create a reconciled version. The reconciled version was pretested with four Latino men who represented the target population but were not included in the study. They provided feedback on the nature of the questions, including wording and comprehension. After pretesting, the committee met again to make final decisions that resulted in a final instrument ready for implementation.

Statistical Methods

The statistical analyses comprised several phases. First, we explored sample demographics using descriptive statistics, including frequencies and percentages or means, and standard deviations (SD). We then examined the underlying factor structure of the items comprising the ISSS in two stages as described below.

Factor Analyses

In the first stage, we conducted a confirmatory factor analysis (CFA) to test the two-factor structure of social support for the ISSS presented in Ong and Ward (2005) using the PROC CALIS procedure in SAS version 9.2. In terms of model specification, the model identified by Ong and Ward (2005) has two latent factors with items 1–9 of the ISSS loading on the first factor (Perceived Socio-emotional Support), and items 10–18 loading on the second factor (Perceived Instrumental Support). The variances of the latent factors were fixed at 1.0 as is common practice.³⁸ The latent factors were allowed to freely covary and hence were estimated from the data. We used maximum likelihood estimation. We assessed CFA model fit using five fit indices: comparative fit index (CFI), non-normed fit index (NNI), normative fit index (NFI), the root mean square error of approximation (RMSEA), and the chi-square test. CFI, NNI and NFI values of 0.90 or greater represent acceptable model fit while RMSEA values of 0.06 or less represent acceptable model fit.³⁹ The chi-square describes similarity of the observed and expected covariance matrices. Acceptable model fit is indicated by a chi-square probability greater than or equal to 0.05.

Following the initial rejection of the Ong and Ward (2005) two-factor model on the basis of the CFA results, we used EFA to determine an alternative factor structure. For EFA, we used a principal factor analysis. The first step in EFA was to determine how many factors to retain. Although the default in most software packages is to retain factors with eigenvalues greater than 1.0, there is broad consensus in the literature that it is among the least accurate because retaining all factors with eigenvalues greater than 1.0 results in the retention of too many factors.⁴⁰ An alternate test that is more widely accepted is the scree test which involves examining a graph of the eigenvalues and identifying the natural break point in the data where the curve flattens; the number of data points before the break is usually the number of factors to retain.⁴¹ A third method of factor retention is parallel analysis.⁴² In parallel analysis, the average eigenvalues from multiple randomly generated datasets are compared to eigenvalues from the real data. Factors corresponding to actual eigenvalues that are greater than the parallel average random eigenvalues are retained. Actual eigenvalues less than or equal to the parallel average random eigenvalues are considered due to sampling error.^{42–44}

After determining the number of factors using the scree test, we used PROMAX oblique factor rotation (ie, allowing the factors to be correlated) and examined the factor loadings for each item. An acceptable factor structure is one with item loadings above 0.30, no item cross-loadings, and no factors with fewer than three items.^{45,46}

Subscale Associations

We calculated Spearman correlations to examine associations between the resultant ISSS subscale scores and other variables, specifically self-esteem, mastery, and depression because these variables were used in the original validation of the ISSS.¹³ Spearman's rank correlation coefficients were used to allow for non-normality of the variables involved.⁴⁷

Human subject oversight was provided by the Institutional Review Board of Wake Forest Health Sciences.

RESULTS

In the current sample of immigrant Latino men, four were below the inclusion criterion of at least 18 years old and 14 of the remaining 258 participants had missing data on at least one of the 18 social support items. These 18 were excluded from the analysis for a final sample of 244 participants. Demographic characteristics of the sample are provided in Table 2. Mean age of participants was 26.9 years old. Most participants reported being from Mexico (81.9%), and smaller percentages reported being from Guatemala (5.7%) and Honduras (2.6%). The majority of participants reported being heterosexual (98.3%); four reported being transgender. Most participants reported not having completed high school or obtaining a GED (77.2%); 17% of participants completed high school or earned a GED and 5.4% earned a two-year college degree. One participant completed a four-year college degree.

Most participants reported being employed year round with most in construction or factories. Nearly 13% of participants reported being unemployed. About half (47.4%) of participants reported monthly income from all sources less than \$1,000.

CFA Findings

Although most of the fit indices indicated acceptable, or close to acceptable, model fit, (CFI=0.92, NNI=0.91, NFI=0.89); the RMSEA=0.10 was larger than the suggested 0.06 or less criteria for acceptable fit. The chi-square probability also indicated unacceptable fit ($\chi^2=479.0$, degrees of freedom [df]=134, $p<0.0001$). Thus, we conducted an EFA to examine further the structure of the ISSS for these Spanish-speaking Latino men.

EFA Findings

In the first stage of the EFA, one factor emerged with an eigenvalue greater than 1.0 (eigenvalue=11.6), accounting for a total of 88.9% of the variance. However, both the scree plot and parallel analysis (data not shown) suggested a second factor was plausible, explaining an additional 6.9 % of the variance (eigenvalue=0.90). After PROMAX oblique factor rotation of the two-factor solution as shown in Table 1, the structure was consistent with the two-factor structure reported in Ong & Ward (2005). However, the factors were not as clearly separated which may explain the initial unacceptable CFA fit statistics. Items #6, 8, and 9 that loaded on Ong and Ward's Perceived Socio-emotional Support factor cross-loaded on the Perceived Instrumental Support factor with loadings above the 0.30 cutoff on both factors. Although the internal consistency (or reliability) of each subscale is high,

suggesting the items ‘hang together’ ($\alpha=0.94$ and 0.96 , respectively), the cross-loadings within this sample raise concerns about discriminant validity.

We then removed the three items that cross-loaded (items #6, 8, and 9) on both factors and applied CFA to the two-factor model identified by Ong and Ward (2005) to determine whether this would improve the model fit. The removal of these items improved three of the four fit indices to within acceptable fit ranges (CFI=0.94, NNI=0.93, and NFI=0.91); however, the RMSEA (RMSEA=0.10) and the chi-square probability ($\chi^2=302.3$, $df=89$, $p<0.0001$) still indicated unacceptable fit.

We tried one final model. A one-factor model based on all 18 items had a significantly poorer fit (CFI=0.87, NNI=0.85, NFI=0.84, RMSEA=0.13, and $\chi^2=708.4$, $df=135$, $p<0.0001$). Because removal of the cross-loading items did not improve the fit significantly and both a one and three factor model were not supported by the data, we accepted the two-factor model outlined in Ong and Ward (2005).

Correlations

In Table 3 we present the correlations between the two factors (Perceived Socio-emotional and Instrumental Support) and the three criterion variables (ie, mastery, self-esteem, and depression). The Cronbach alphas for the three criterion variables were $\alpha=0.64$, 0.63 and 0.82 , respectively. Perceived Socio-emotional Support was marginally positively correlated with mastery ($\rho=0.118$; $p=0.065$), and self-esteem ($\rho=0.134$, $p=0.051$) and negatively correlated with depression ($\rho=-0.162$; $p=0.078$). No significant correlations were found between Perceived Instrumental Support and the criterion variables. Removal of the three cross-loading items from Perceived Socio-emotional Support did not improve the correlations with the criterion variables (data not shown) providing further evidence for the inclusion of these three items in the Perceived Socio-emotional Support scale.

DISCUSSION

The need to better understand and measure social support is particularly salient for men overall because prospective studies investigating the effect of social support on morbidity and mortality have identified a stronger health-protective effect of social support for men than for women.³ This is particularly key because the health promotion and disease prevention needs of minority men have been traditionally neglected.^{48–50} Despite decades of research, measurement of social support remains limited.⁴ This validation study provides evidence for the potential of the ISSS as a measure of social support for Spanish-speaking populations.

Social support is often conceptualized as including four key types of social support: emotional support (eg, trust, empathy, and love); instrumental support (eg, helping behaviors such as giving time, money, and skills); informational support (eg, providing information, advice, and guidance); and appraisal support (eg, offering positive evaluative feedback). Although these types of social support may not be exhaustive, they tend to be considered to account for most social support.^{51,52} Although the original ISSS does not load on to these types of social support, these four types of social support were included in the first step of

the development of the ISSS: the item-generation phase.¹³ Thus, the ISSS is based on what has been uncovered about social support over time and may in fact be more relevant to the experiences of social support among immigrants.

This analysis identified a measure of two components of social support: Perceived Socio-emotional and Perceived Instrumental Support. Based on the ISSS, we found three items that cross loaded. One explanation for these cross loadings may be that these items may be interpreted differently by Spanish-speaking Latino men. For example, items #6 and 8 (“Accompany you to do things whenever you need someone for company” and “Accompany you somewhere even if he or she doesn’t have to” may not be clear to some men. These items have intended to imply socio-emotional support, but for some immigrant Latino men these items may imply instrumental support, such as actually “taking one there” or accompanying to provide instrumental support (eg, showing the way, providing interpretative services). The other item that cross loaded (#9; “Reassure you that you are loved, supported and cared for”) may not capture the way in which this sample of Latino men would conceptualize or communicate about support, particularly within the context of machismo.²¹

Despite the cross loadings, the full model as originally developed and validated by Ong and Ward (2005) seemed to be the best fitting model within this sample. However, the ISSS was not correlated to the variables in the same manner as in the original validation study. In this sample, Perceived Instrumental Support was not associated with mastery, self-esteem, or depression; and Perceived Socio-emotional Support was not associated with depression. However, we identified four potential explanations. First, the criterion variables were not measured precisely in the same manner in our study as they were in the original validation study. For example, mastery was measured using an adapted version of the scale; Ong and Ward (2005) adapted the original scale³² to anchor responses to the situational context of sojourning. If we had made similar changes, we may have seen stronger associations. Furthermore, Ong and Ward (2005) measured depression using the Zung Self-Rating Depression Scale;⁵³ we used the CES-D Scale,³⁵ which has been shown to produce varied results when used among Latinos and in particular immigrants.⁵⁴

Second, the translation of the items used to measure these variables requires exploration and perhaps further revision. Although the criterion variables have been used previously as translated, it could be that further research is needed on how populations of Latino men, who do not comprise a homogenous group, understand and interpret the items that define psychosocial latent constructs; the way in which they understand items may vary.

It also could be that previous studies of the ISSS included populations with higher levels of educational attainment. Over three-quarters of our sample had less than a high school education while previous studies of the ISSS include college students and those with college degrees.^{14–18} Although we did not conduct cognitive interviewing, such an approach would have been beneficial to better understand the thought processes that participants used to interpret and answer items.

Finally, although we have formative data^{21,28,29} that suggested that participants were more likely to engage with a well-trained interviewer who could establish rapport and trust, it could be that there is a level of response bias. Further research is warranted to compare modes of assessment administration within various cultural contexts.

Compared to Latinos in states with well-established Latino populations (eg, California, New York, Texas), immigrant Latinos in North Carolina resemble those in the Southeast more generally; they tend to be male, come from rural communities in southern Mexico and Central America, report lower educational attainment, and have arrived more recently and without families.^{19–23} As this population grows, there will be continued need to advance measurement to improve our understanding of health and associated variables. Currently, there are no recommended measures of social support for immigrant Latinos. Although the ISSS may prove useful as we begin to conceptualize the role and meaning of social support within the context of immigration, more research is needed to develop meaningful measures of constructs among immigrant Latinos in the US.

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Table 1

Promax-rotated factor loadings with a two-factor solution with descriptive statistics for each item in English and Spanish (N=244)

Item #	Item	Socio-emotional (Factor 1)	Instrumental (Factor 2)	Mean (SD)
1	Comfort you whenever you feel homesick. <i>Consolarlo cada vez que extraña su casa.</i>	0.77		2.65 (1.10)
2	Listen and talk with you whenever you feel lonely or depressed. <i>Escucharlo y hablarle cada vez que se siente solo o deprimido.</i>	0.86		2.76 (1.01)
3	Share your good times and bad. <i>Compartir momentos buenos y malos.</i>	0.65		2.97 (0.99)
4	Spend some quiet time with you whenever you do not feel like going out. <i>Pasar momentos tranquilos con usted cuando no tiene ganas de salir.</i>	0.68		2.72 (0.99)
5	Spend time chatting with you whenever you are bored. <i>Pasar tiempo conversando con usted cuando usted está aburrido.</i>	0.74		2.78 (.97)
6	Accompany you to do things whenever you need someone for company. <i>Acompañarlo a hacer cosas cada vez que necesita a alguien que lo acompañe.</i>	0.50	0.38	2.79 (1.03)
7	Visit you to see how you are doing. <i>Visitarlo para ver cómo le va.</i>	0.60		2.78 (1.05)
8	Accompany you somewhere even if he or she doesn't have to. <i>Acompañarlo a algún sitio incluso si él o ella no tiene que hacerlo.</i>	0.52	0.37	2.75 (0.97)
9	Reassure you that you are loved supported and cared for. <i>Asegurarle que usted es querido, que se le da apoyo y atención.</i>	0.43	0.47	2.99 (1.03)
10	Provide necessary information to help orient you to your new surroundings. <i>Darle información necesaria que lo ayuda a orientarse en su nuevo ambiente.</i>		0.68	2.92 (1.06)
11	Help you deal with some local institutions' official rules and regulations. <i>Ayudarlo a tratar con algunas de las normas y regulaciones de instituciones locales.</i>		0.66	2.65 (1.06)
12	Show you how to do something that you didn't know how to do. <i>Enseñarle cómo hacer algo que usted no sabe cómo hacer.</i>		0.72	2.78 (1.04)
13	Explain things to make your situation clearer and easier to understand. <i>Explicarle cosas para que entienda su situación más clara y fácilmente.</i>		0.80	2.83 (1.05)
14	Tell you what can and cannot be done in North Carolina. <i>Decirle lo que se puede y lo que no se puede hacer en Carolina del Norte.</i>		0.78	2.77 (1.03)
15	Help you interpret things you don't really understand. <i>Ayudarle a interpretar cosas que usted no entiende completamente.</i>		0.79	2.78 (0.99)
16	Give you some tangible assistance in dealing with any communication or language problems that you might face. <i>Darle alguna ayuda concreta referente a algún problema de comunicación o de idioma que usted pudiera tener.</i>		0.89	2.67 (1.02)
17	Explain and help you understand the local culture and language.		0.80	2.65 (1.00)

Item #	Item	Socio-emotional (Factor 1)	Instrumental (Factor 2)	Mean (SD)
	<i>Explicarle y ayudarle a entender la cultura local y el idioma.</i>			
18	Tell you about available choices and options. <i>Decirle sobre las opciones y alternativas disponibles.</i>		0.81	2.70 (0.98)

Note:

* Loadings < 0.30 are not reported

Table 2

Select Characteristics of Participants (N=244)

Characteristic	Mean ± SD (min-max) or <i>n</i> (%), as appropriate
Age (in years) (N=235)	26.9 (7.2)
Country of origin (N=227)	
Mexico	186 (81.9)
Guatemala	13 (5.7)
Honduras	6 (2.6)
Other	22 (9.7)
Sexual identity (N=241)	
Transgender	4 (1.7)
Heterosexual	237 (98.3)
Education (N=241)	
Less than high school diploma or equivalent (GED)	186 (77.2)
High school diploma or equivalent (GED)	34 (14.1)
Some college	7 (2.9)
2-year college degree	13 (5.4)
4-year college degree or more	1 (0.4)
Employment status (N=240)	
Employed year round	166 (69.2)
Employed in seasonal work but not year round	43 (17.9)
Unemployed	31 (12.9)
Employment type ^a (N=205)	
Construction	117
Restaurant	12
Factory	54
Furniture manufacturing	11
Animal slaughtering/processing	5
Lawncare/landscaping	16
Other (eg, Farmwork)	10
Monthly Income from all sources (N=243)	
None	48 (19.8)
\$1–\$99	9 (3.7)
\$100–\$499	25 (10.3)
\$500–\$999	50 (20.6)
\$1,000–\$1,999	99 (40.7)
\$2000–\$4,999	19 (7.8)
\$5,000 or more	2 (0.8)

Note:

^aResponse options were not mutually exclusive

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Table 3

Spearman's Rank Order Correlation Coefficient for the Two-Factor Model and the Criterion Variables

	Mastery (n=243)	Self-Esteem (n=212)	Depression (n=119) *
Socio-emotional	0.118 (p=0.065)	0.134 (p=0.051)	-0.162 (p=0.078)
Instrumental	0.059 (p=0.358)	0.092 (p=0.184)	-0.103 (p=0.264)

*
data not obtained on Wave 2 sample