Positive Influences of Social Support on Sense of Community, Life Satisfaction and the Health of Immigrants in Spain

1 **1 Introduction**

2 Migration to new environments in search of better life opportunities is a pervasive
3 phenomenon that occurs worldwide, and with significant variations within various
4 regions of the world. In the process of migration, migrants settle in local communities
5 or neighborhoods, many of which consist of diverse multicultural environments. An
6 immigrants' reception and their process of integration into a new community constitute
7 important factors that affect migrants' health and well-being (Brydsten et al., 2019;
8 Chen et al., 2017; Giacco et al., 2018; Millán, et al., 2019; Rapp et al., 2018; Vitale and
9 Doherty, 2018). This process of adjustment is complex and often stressful because of
10 the multitude of changes and various losses that migrants experience (Sutherland,
11 2007).
12
13 According to González and Requena (2005) during the past decade, there has been a
14 steady increase in number of migrants coming to Spain. From 2000 to the present, Spain
15 has emerged as a prioritized host country for migration from Africa, Latin America,
16 Asia, and Eastern Europe. Spain, and specifically the city of Malaga, is an attractive
17 multicultural setting for migration based on its geographical location as a "gateway to
18 Africa," its links with Latin America, and its employment opportunities for working
19 within the tourism industry (Pernía and Narváez, 2003). In Spain, the rights and
20 citizenship of migrants are subject to work and residence permits along with compliance
21 with a several requirements (Albertín, 2016). The recent global economic crisis has
22 significantly affected vulnerable immigrants from Spanish territories, who have been
23 exposed various forms of discrimination. In light of worldwide socio-political changes
24 that affect the plight of immigrants, further study is needed to obtain a better
25 understanding of current effects of this process of international migration, integration,
26 and social adaptation, as they affect the health and well-being of immigrants (Hildegard,
27 2012).
28
29 The study of stressors and adaptation to new environments is important to identify the
30 most salient factors that affect the physical and mental health of diverse cohorts of
31 international immigrants. In particular, migration to distant and culturally different
32 environments often introduces stressors that fragment and can destabilize the nuclear
33 family. With this social displacement and separation from family (Hao and Johnson,
34 2000; Malone and Dooley, 2006), along with exposures to stressful and often dangerous
35 situations and environments, migrant populations often exhibit high prevalence rates of
36 psychopathological disorders, primarily involving anxiety, depression, and somatization
37 (Zarza and Sobrino, 2007). Mental health and well-being are often affected by difficult
38 social conditions that include economic problems encountered during migration
39 (Tunstall et al., 2015). Thus, for understanding the well-being of migrants the effects of
40 economic and social insufficiencies should be examined for their effects on immigrants'
41 physical and mental health (Skaff et al., 2003).
42

43 As noted, international immigrants often face highly stressful challenges within a new
44 settlement community, thus increasing their risks of developing mental and physical
45 disorders (Bak-Klimek et al., 2015; Bhugra, 2004; Font et al., 2012; Garcini et al.,
46 2016). Immigrants, who experience chronic and elevated levels of stress are at greater
47 risks of developing diagnosable psychiatric disorders, including anxiety and depressive
48 disorders, as well as post-traumatic stress disorder (PTSD) (Bamishigbin et al., 2017;
49 Buchegger-Traxler and Sirsch, 2012; Calzada and Sales, 2019; Thibeault et al., 2018).
50
51 Regarding physical health, some studies have clearly shown that immigrants exhibit
52 lower levels of health when compared with natives (Jonnalagadda and Diwan, 2005). In
53 particular, immigrants may suffer from headaches and symptoms of exhaustion, which
54 have been interpreted as physical responses to the cognitive overload resulting from
55 migration (Kirkcaldy et al., 2005). Cumulative exposures to chronic stress with greater
56 time of residency within a new environment have been shown to contribute to a
57 deterioration in health among immigrants adjusting to new living conditions within their
58 settlement community (McClure et al., 2015; Prapas and Mavreas, 2016).
59
60 Studies have shown that the great number changes involved in the process of migration
61 are associated with higher levels of stress. In turn, these stress levels are associated with
62 the onset of physical and mental disorders, particularly when exacerbated by the lack of
63 social supports and community integration (Tunstall et al., 2015; Xu and Chi, 2013).
64
65 Studies on the social integration and well-being of immigrants have thus focused on
66 indicators of subjective well-being (Amit, 2010; McMichael and Manderson, 2004).
67 Support supports constitute human resources that appear to serve as an important factor
68 that affects immigrants' well-being (Kristiansen et al., 2006), their sense of community,
69 and their life satisfaction (Hombrados-Mendieta et al., 2013; Sonn, 2002). Community
70 integration is associated with effective interactions with local community residents, and
71 with the development of local sources of social support. In turn, among immigrants,
72 each of these may constitute resource factors that are associated with high life
73 satisfaction (Carpentier and de la Sablonnière, 2013; Safi, 2010).
74
75 Nonetheless, few studies have examined an integrated model of the role of social
76 support and the *sense of community* (SOC) as protective factors that can promote
77 immigrant well-being and health. In addition, few studies have taken a
78 multidimensional approach in the assessment of social supports, with the aim of
79 identifying the distinct sources of support that are most strongly associated with the
80 well-being of immigrants. Accordingly, the main objective of the present study was to
81 investigate the systemic association between social support, the SOC, and immigrant
82 satisfaction with life and health.
83
84 We propose a model in which perceived social support from close sources, as mediated
85 by the SOC and life satisfaction, would be positively associated with mental and
86 physical health. In the past, multivariate models that have examined the association of
87 both of these factors on life satisfaction and health-related outcomes have yielded
88 limited results. The present study aims to clarity the association between types of social
89 support and the SOC, and their effect on life satisfaction, mental health problems, and
90 physical illness within an international immigrant population.

2 Social support, well-being and health of immigrant populations

Social support is a complex multidimensional construct (Lynch, 1998). Having social support appears important for international immigrants as social capital that can facilitate their adaptive adjustment within a new community also aiding in the development of the SOC within the new community environment (Hernández et al., 2005). There are many definitions of social support, with one of the most comprehensive provided by Lin et al. (1986). They describe social support as the provision of *real* and *perceived* support, both *instrumental* and *expressive*, as received from the *community*, *social networks*, and *close friends*. Most authors identify three types of social support: *emotional support*, which refers to the feeling of being loved and the security of being able to trust someone; *instrumental support*, which refers to having direct help available; and *informational support*, which consists in the provision of advice or guidance (Taylor, 2006; Wills and Fegan, 2001; Wong et al., 2007). These dimensions describe important resources that can satisfy specific needs, while promoting a sense of wellness.

The assertion that social support has a beneficial effect on well-being and health has received wide support within the literature (Caplan, 1974; Cassel, 1974; Cobb, 1976; Cohen and Syme, 1985; House, 1981; Vaux, 1988). Feeling loved and supported by others makes us feel good, also re-framing life's challenges in new ways (Cutrona, 1986). Social support can also buffer the negative effects of stress (Thoits, 1982). Individuals who have greater levels of support exhibit a lower incidence, prevalence, and severity of illness, whether assessed with general health indicators or by the presence of chronic illness (Asher, 1984; Monroe and Johnson, 1992; Uchino et al., 1996). By contrast, a lack of support, isolation, and a limited social network have been associated with impaired physical and psychological health and a higher risk of death (Kennedy et al., 1990).

Social support has been shown to provide various benefits. The resources provided by others also facilitate direct action and effective coping. Social support aids in a realistic assessment of resources, allows stressors to be re-appraised as less threatening, and assists in the development of problem-solving strategies (Cohen and Syme, 1985). The presence of social networks and contact with others also appears to facilitate the development of a SOC and can provide positive experiences that influence well-being (Vaux, 1988). Integration in social networks can also promote the perception that support is available when needed, leading to greater comfort and reduction of perceived stress. In summary, positive psychological states can promote healthy behaviors that in turn can produce enhanced health outcomes (Hombrados, 2013).

Conversely, the loss of social support networks appears to be a major stressor that immigrants often experience, whereby several studies have found a positive association between social support and physical and mental health and well-being (Guruge et al., 2015; Kung et al., 2003). Highlighting the importance of social supports in well-being, international immigrants face highly stressful challenges in adapting to a new community environment, thus increasing their risks of developing mental disorders (Bak-Klimek et al., 2015). Ample evidence exists on a positive association between supportive social relationships and the mental well-being (Oppedal and Røysamb, 2004; Peirce et al., 2000; Xu and Chi, 2013). By contrast, in immigrant populations, several

139 studies have highlighted the protective effects of social support networks in
140 safeguarding against mental disorder (Levecque et al., 2009; Salinero-Fort et al., 2015;
141 Tieu and Konnert, 2014). The social supports have aptly been described as a buffer
142 against depression and anxiety (Martínez et al., 2001; Shin, 1994) and against
143 schizophrenia in immigrant populations (Bhugra, 2004).
144
145 Regarding physical health, the presence of social support and effective social inclusion
146 has been shown to be instrumental in promoting preventive and health-maintaining
147 behaviors, in relation to: diabetes self-management (Chun et al., 2011; Njeru et al.,
148 2016), the management of hypertension (Beune et al., 2010), and reducing the risk of
149 cardiovascular disease (Zlotnick et al., 2015). Several studies have examined health
150 behaviors among immigrants, such as physical activity and maintaining a healthy diet.
151 Among immigrants, a lack of time, limited resources, and insufficient social supports,
152 as well as immigration stressors have been identified as the major barriers to physical
153 activity, often leading to more sedentary lifestyles, weight gain, and obesity (Allen et
154 al., 2014; Nobari et al., 2013; Ramos et al., 2016). In addition, immigrants are often
155 affected by poor sleep quality, leading to a deterioration in physical health (Jackson et
156 al., 2014). Interpersonal relationships also appear as facilitators of the initiation and
157 maintenance of several risk behaviors that include smoking, drinking, drug misuse, and
158 their co-occurrence (Viner et al., 2006).
159
160 Studies on social support among immigrants have focused on factors that influence
161 subjective well-being (e.g., Amit, 2010; McMichael and Manderson, 2004). Generally,
162 a positive association has been found between social support and well-being (Davis et
163 al., 1998; Zhou and Lin, 2016). Support resources have been identified as an important
164 predictor of well-being (Kristiansen et al., 2006). Fernández et al. (2015) have
165 suggested that social support operates as a protective resource for promoting well-being
166 among immigrant populations. In general, studies have found an association between
167 greater life satisfaction and perceived support. However, other studies have found life
168 satisfaction to be a mediator of the effect of perceived support on psychological
169 adjustment (e.g., Birman et al., 2014). Further, several studies have found that life
170 satisfaction mediates the relationship between stressful life events and problem
171 behaviors and unhealthy outcomes (Cava et al., 2018; Li et al., 2019; McKnight et al.,
172 2002; Reyes et al., 2016; Singhal and Rastogi, 2018).
173
174 The results of these studies suggest that life satisfaction is a precursor of healthy
175 outcomes. Life satisfaction can be conceptualized as a cognitive variable serving as a
176 mediator of the link between environmental exposures and healthy behavioral responses
177 (Proctor et al., 2009). Nonetheless, few studies have analysed the dual role of life
178 satisfaction as a positive outcome in response to perceived social support, yet also as a
179 mediating variable occurring between antecedent variables and positive health
180 outcomes.
181
182 In general, the availability of social support is associated with immigrant health and
183 well-being. Nonetheless, Thoits (1982) suggested that the amount of social support
184 received is not the only relevant aspect of social support; rather, the source of social
185 support is also crucial to a positive appraisal of social support. In this regard, the most
186 relevant sources of social support among migrants have been identified as the nuclear
187 family and the extended family. Both can confer positive effects on health and life

satisfaction (Ayón and Naddy, 2013; Guo et al., 2019). Another source of social support is friendships, whose influences have been associated with life satisfaction and stress reduction (Klein et al., 1989). However, few studies have differentiated between support from immigrant and native friends, Moreover, among these studies, their results have been contradictory.

Some researchers have suggested that immigrants tend to establish a large number of positive relationships with other immigrants, while establishing a limited number of supportive relationships with the native residents from the host country (García et al., 2002). Other studies have highlighted the more potent beneficial effects of the social support received from native-born community residents (García-Cid et al., 2017). Some studies have shown an association between social support that is received from members of the immigrant's culture of origin, with high levels of stress and depression (Falavarjani et al., 2019). In one study, an association was suggested between having friendships with native friends and a decreased sense of discrimination, although the results of this study remain unclear (Domínguez-Fuentes and Hombrados-Mendieta, 2012).

Understanding the differential effects of various forms of social support based on the source that provides it, is most important. Distinguishing between the different sources of social support that occur within a given settlement community can improve our understanding of the effects of these distinct sources on immigrants' health and well-being. Which sources of social support are most beneficial for international immigrants? This issue may be especially salient among international immigrants, whereby in their new settlement community immigrants can maintain multiple relationships, although these may develop primarily among family and friends. Having trusted people with whom international immigrants can confide their emotions, problems, or difficulties, to experience "being heard and accepted," has been shown to have a strong effect on the individual's ability to cope effectively with stressful situations (Lin and Ensel, 1989).

3 Sense of community (SOC), well-being and the health of immigrant populations: The role of the SOC as mediator

Studies have supported the "concept of community" beyond community when defined by spatial localization. That is, the effects of social networks and social interaction as indicators of "community," can be more broadly conceived. According to McMillan and Chavis (1986), a ''*sense of community* is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together'' (p. 9). Integral to attaining a sense of community is a feeling of emotional safety created by membership, and a sense of belonging to and identification with a larger community. They proposed a multidimensional structure for the construct of *sense of community*, as one that consists of four dimensions: needs fulfilment, group membership, influence, and emotional connection.

The process of immigration and adaptation to a new country implies that this major relocation disrupts and diminishes this sense of community as linked to one's culture of origin. This discontinuity also prompts the need to re-establish a new sense of

235 community as part of the process of integration into the new cultural environment that
236 exists within a new settlement community (Bathum and Baumann, 2007). In this
237 process, immigrants must also develop new adaptation strategies (Downie et al., 2007).
238 Thus, among international immigrants, this sense of community gains special relevance,
239 because it can facilitate social integration into the new settlement community, perhaps
240 also promoting enhanced health and well-being (Albanesi et al., 2007; Cicognani et al.,
241 2008).
242
243 The degree of interaction and social integration among and between immigrants and
244 with the rest of the settlement community are core elements for promoting immigrant
245 health and well-being (Foroughi et al., 2001; Jasinskaja-Lahti and Liebkind, 2007;
246 Townley and Kloos, 2011). Low levels of a SOC may compromise health and wellness,
247 from the absence of people with whom to share daily problems, and as this can lead to
248 the development of high stress levels (Antonovsky, 1979). By contrast, this SOC can
249 promote sound mental and physical health through the process of social integration and
250 the establishment of positive relationships that mobilize social support, increase shared
251 resources, and build social and human capital. Furthermore, socially integrated
252 individuals often exhibit better quality in their social interactions and have more diverse
253 support resources from which to draw when coping with stressful situations (Cohen et
254 al., 2000).
255
256 In summary, several studies have found significant associations: (a) between sense of
257 community (SOC) with depression and mental illness (Huang et al., 2016; Li et al.,
258 2011; Terry et al., 2019); (b) SOC and good health (Anderson et al., 2016; Carpiano and
259 Hystad, 2011; Johnson et al., 2011); as well as, (c) SOC and life satisfaction (Farrell et
260 al., 2004; Huang and Wong, 2014; Kutek et al., 2011; Ng and Fisher, 2016; Rugel et al.,
261 2019; Yao et al., 2018).
262
263 Several studies have also found a positive association between social support and SOC
264 (Oh et al., 2014; Vieno et al., 2007). Most of these studies have found that social
265 support is a good predictor of SOC because this type of support helps individuals to
266 meet their daily needs and fosters relationships with others in the community. Thus, the
267 development of social networks promotes connections between people in the
268 community and strengthens their SOC (Huang et al., 2016; Vieno et al., 2007).
269 Community participation based on supportive relationships fosters connections within
270 that community. This outcome can encourage individuals to access positive social
271 networks, as a means of enhancing their well-being (Dalton et al., 2001).
272
273 Theoretically, SOC may function as a mediating factor within this nexus that can be
274 strengthened through social support networks (Pretty et al., 1996). SOC can moderate
275 the negative effects occurring during the immigrant's adaptation process, although most
276 prior studies have investigated the mediating role of the SOC in other populations.
277 Among military spouses, SOC has been examined as a mediator: (a) between social
278 support and psychological well-being (Wang et al., 2015); (b) between social support
279 and participation in youth-based community organizations, and outcomes relevant to
280 adolescent development (Lardier et al., 2019); (c) between the transgender identity and
281 overall well-being (Barr et al., 2016). Terry et al. (2019) found that sense of community
282 is an important mediator of community participation and mental health. Despite the

importance of these findings, among immigrants, few studies have been conducted that analyse the mediating effects of SOC on physical health and mental well-being.

4 Present Study

As noted, several studies have highlighted social support and the SOC as variables that are positively associated with health and life satisfaction among immigrant populations. However, there is a lack of studies that have concurrently investigated the association between both variables using structural model analysis and the contributing effects of the multi-dimensional factor of social support. As one limitation of prior research, despite the multidimensional nature of social support, researchers have generally used measures that do not distinguish between various sources of immigrant social support. However, other studies have emphasized the relevance of differentiating between sources of support in order to identify those that are most relevant to the welfare of the population under study (Procidiano and Heller, 1983). Furthermore, studies on sources of immigrant support have obtained contradictory results (García et al., 2002; García-Cid et al., 2017). This aspect is particularly relevant in immigrant populations because social networks can provide resources that are adapted to their needs, also facilitating their social and community integration and their well-being. Therefore, as suggested by ecological and systemic models, it is essential to analyse social support as obtained from different sources and settings (Levitt, 2005). Among immigrants this networking occurs through microsystems, that include family and friends who exist within a specific setting.

There are few studies on the SOC and its associations with satisfaction with life, mental health problems, and physical illness in immigrant populations. Thus, the present study investigated SOC as a mediating variable between social support and these outcome variables. By including the SOC and satisfaction with life (SWL) as mediating elements between social support and immigrant health, this study contributes to the establishment of an ecological approach that makes it possible to investigate the person-environment relationship in the host setting by analysing both interpersonal and contextual factors, as suggested by some authors (Tang et al., 2017).

We thus propose a model, for an immigrant population, in which perceived social support from the closest sources (family and friends) (see Figure 1) is positively associated with a sense of community, and that produce positive health outcomes. This model will test the following general hypothesis: (a) higher scores in the antecedent variable (perceived social support from family and friends) will have a positive effect on the sense of community and on satisfaction with life (SWL), and a negative effect on mental health symptoms and illness.

Specifically, we tested the following hypothesis:

H1: Social support from family and native friends will be positively associated with the sense of community (SOC).

H2: Social support from family and native friends will be positively associated with satisfaction with life (SWL) and with health.

H3: Social support from family and native friends will have indirect effects on mental health symptoms and illness via their association with higher levels of SOC and SWL.

330 H4: SOC will be positively associated with SWL, thus associated with a lower level of
331 mental health symptoms and illness.
332 H5: SWL will be positively associated with mental health symptoms and illness.
333
334 [Insert Figure 1 About Here]
335
336 In summary, few studies have analysed the role of different forms of social support and
337 the sense of community in immigrant populations, although prior empirical evidence
338 has shown that both variables can have a beneficial effect on well-being. In addition, as
339 examined among immigrants, limited evidence exists from multivariate models that
340 concurrently examine the effects of both factors on satisfaction with life and health-
341 related outcomes.
342

343 # 5 Material and method

344 ## 5.1 Participants

345 The participants consisted of 1131 immigrants from Eastern Europe (Ukraine, Romania,
346 Bulgaria, and Russia), Africa (Maghreb) and Latin America (Paraguay, Argentina,
347 Colombia, and Venezuela), 49% were men and 51% were women. The age range was
348 18 to 70 years (M = 33; SD = 12). They had lived in Malaga (Spain) for an average of
349 8.77 years (SD = 6.49) and 53.7% were employed. This distribution is representative of
350 the distribution of immigrants in the city in which this study was conducted, as
351 referenced by the 2017 census data.

352 ## 5.2 Procedure

353 This study was conducted in Malaga, which is divided into 11 Municipal Districts.
354 Municipal Districts are large territorial divisions whose boundaries are set by the city
355 council; these divisions are subdivided into neighborhoods. This involved sampling
356 from the 11 Malaga Districts having largest concentration of immigrants.
357
358 Data were collected using a *random-route sampling* and survey methodology. The
359 interviewer takes a randomly chosen route from a point of origin in an area and,
360 following the established route, must randomly select the sample units. Boundaries
361 were established for each of the neighborhoods selected, and random route sampling
362 was used to designate the blocks, streets, sidewalks, and so on, in each neighborhood.
363
364 Carefully trained interviewers administered the surveys. The questionnaires applied to
365 the non-Spanish-speaking people were translated into their language of origin (i.e.
366 English, French, Russian, and Arabic) by native speakers who had a full command of
367 Spanish. The surveys were conducted in immigrant associations, businesses, meeting
368 places, and Social Service Centers located within each district. All participating
369 immigrants were volunteers and signed an informed consent. No incentives were
370 offered for their participation. The ethical commission of the University of Malaga
371 (CEUMA) determined the suitability of the protocol.

372 ## 5.3 Measures

Mental health symptoms. The Spanish version of the Goldberg General Health Questionnaire (GHQ-12) was used (Villa et al., 2013). This questionnaire has been shown to be an effective tool for the evaluation of mental health symptoms in clinical patients and the general population. This questionnaire consists of 12 items. The items are answered on a 4-point Likert-type scale (0-3) ranging from (0) = *Not at all*, to (3) = *Much more than usual,* (e.g. “Have you felt constantly overwhelmed and stressed?”). The scale has a Cronbach's $\alpha = 0.817$.

Satisfaction with life. The 5-item Satisfaction with Life Scale (SWLS), developed by Pavot and Diener (1993). It was used to assess life satisfaction or the cognitive component of well-being. The items are answered on 7-point scale that ranges from 1 = *completely unsatisfied* to 7 = *completely satisfied* (e.g. “I am satisfied with my life”). The scale has a Cronbach's $\alpha = 0.879$.

Social support. Questionnaire on the Frequency of and Satisfaction with Social Support (García et al., 2016). This instrument measures the frequency of and satisfaction with social support received from the family (family in the host country and the country of origin), immigrant friends (those whom have also immigrated to the new host country), and native friends (those who are native-born residents of the new host country). Social support is divided into three domains: (a) *emotional support* (“Give you love and affection and listen to you when you want to talk and express your feelings”), (b) *instrumental support* (“Willing to do you a favour or do specific things for you; lend you money, accompany you to the doctor, etc.”), and (c) *informational support* (“Give you useful advice and information to resolve doubts, problems, or things you have to do on a daily basis”). We assessed the frequency of and satisfaction with the three types of support (emotional, instrumental, and informational) from each source (family, immigrant friends, and native friends). This instrument consists of 18 items. Frequency of support is measured using a 5-item Likert-type scale (1 = "*Rarely*", 5 = "*Always*"). Degree of satisfaction with the support received is also measured using a 5-item Likert-type scale (1 = "*Unsatisfied*", 5 = "*Very satisfied*"). The results of the assessment of the frequency of and satisfaction with the three types of support were used to construct the three indexes (each of which comprised six items) involving different sources of social support (family, and native and immigrant friends). Cronbach's α was 0.904 for social support from the family, 0.931 for social support from native friends, and 0.94 for social support from immigrant friends.

Sense of Community Index SCI-2. (Chavis et al., 2008). The SCI-2 is a reliable measure. This instrument is based on the SOC model provided by McMillan and Chavis (1986), which assesses need fulfilment, group membership, influence, and emotional connection. This questionnaire consists of 24 items that are measured on a Likert-type scale: (1 = *Not at all,* 2 = *Somewhat*, 3 = *Mostly*, 4 = *Completely*). (e.g. “I get important needs of mine met because I am part of this community”). Based on the recommendations of the authors, the total Sense of Community Index was used (Chavis et al., 2008). The SOC Global Index has a Cronbach's $\alpha = 0.932$.

Illness questionnaire. (Instituto Nacional de Estadística, 2017). This questionnaire consists of a list of 28 illnesses or health problems (hypertension, diabetes, headaches, allergies, etc.). Participants are asked if they have experienced any of them during the last 12 months ("Have you had this problem in the last 12 months?"), if a doctor has

422 diagnosed them ("Has a doctor told you that you have this problem"), and if they
423 needed medication ("Are you taking or have you taken medication for this problem in
424 the past 12 months?"). Based on the answers to the three questions, three indicators
425 were calculated that represent the state of health and any problems (number of illnesses
426 or health problems) that the participants have experienced during the past 12 months.
427 The maximum number of illnesses experienced is 27. Item 26 (prostate problems)
428 excludes women, and item 27 (menopause problems) excludes men. The number of
429 illnesses experienced during the last 12 months ranged from 0 to 15 (mean = 1.97), the
430 number of illnesses diagnosed by a doctor ranged from 0 to 13 (mean = 1.35), and the
431 number of participants who needed medication ranged from 0 to 11 (mean = 1.18).
432
433 **5.4. Analytical Strategy**
434 Structural Equation Modeling (SEM) path analysis techniques were used. This study
435 consists of a cross-sectional design, and thus examined correlations among variables
436 rather than temporal relationships. This cross-sectional study analysed the hypothesized
437 associations between the variable domains using the LISREL 9.30 software package
438 (Jöreskog et al., 2016). The model parameters were estimated using the maximum
439 likelihood (ML) method. A structural equation model was used to determine whether
440 there was a positive association between social support from different sources (family,
441 native friends, and immigrant friends) and the SOC, and whether higher levels of SOC
442 will be positively associated with SWL and negatively with mental health symptoms
443 and illness. A latent variable structural equation modelling approach requires the
444 specification of a measurement model as the basis for specifying a structural model.
445 This measurement model was based on the conceptual model presented in Figure 1.
446
447 All the measurement items described above were used to calculate a single
448 measurement model, which includes all the latent exogenous and endogenous variables.
449 Regarding the exogenous variables, the observed variables were drawn from the 18
450 items that assessed the frequency of and satisfaction with emotional, informational, and
451 instrumental support as provided by the three sources of social support. These three
452 sources were used to identify the latent variables. The endogenous latent variables were
453 constructed from the 24 items of the SCI-2, the five items of the SWLS, the 12 items
454 from the questionnaire on mental health symptoms, and three items from the illness
455 questionnaire. Confirmatory factorial analysis was used to test the measurement model.
456 The results of this measurement model were used to calculate the factorial loading
457 scores of the exogenous and endogenous variables.
458
459 The proposed structural model consists of three exogenous variables (family support,
460 support from native friends, and support from immigrant friends) and four endogenous
461 variables (the SOC, SWL, mental health symptoms, and illness). Figure 1 shows the
462 network of hypothesized relationships between the latent factors/variables. This model
463 hypothesizes that there will be direct effect pathways from the three sources of social
464 support (exogenous variables/factors) to four variables/factors (endogenous variables:
465 the SOC, SWL, mental health symptoms, and illness). Within the context of this cross-
466 sectional study, a positive association was hypothesized between the sources of social
467 support and SOC and SWL, and a negative association between these sources and
468 mental health symptoms and illness. In addition, it was hypothesized that there would
469 be a direct and positive association between the SOC and SWL and a negative
470 association between the SOC and mental health symptoms and illness. A direct

association was hypothesized between SWL and mental health and illness in immigrants. Social support from the three sources was also hypothesized to be positively associated with SWL and negatively associated with health problems via the SOC. The SOC leads to a lower occurrence of health problems via SWL.

We used two models to sequentially test these hypotheses. The first model conceptualizes SOC as a mediating variable between the three predictor variables and SWL, mental health, and illness. This model was used to analyse direct associations of the three sources of social support and the indirect ones via the SOC. In the second model, SWL was added to the SOC as a mediating variable. This approach makes it possible to distinguish the direct effects of the three sources of social support on the two health variables from the indirect effects via SOC and SWL.

6 Results

6.1 Measurement model

Table 1 and Table 2 show the factor loadings from each measured variable on the latent factor. Table 1 shows each of three latent factors that distinguish different sources of social support. It also shows the mean and standard deviation next to each of the items, the R^2 values of the items — which can be interpreted as reliability indicators (Bollen, 1989) — and the factor loading scores of each item according to their respective dimension of social support. The factor loading scores of the family social support indicators are high (i.e., all scores are around 0.80). The reliability scores of each item are also high (i.e., >0.60). The R^2 values and the factor loading scores of the items corresponding to social support from native friends are higher, and the indexes corresponding to social support from immigrant friends are even higher. These results indicate that each of the latent factors was well identified from its respective measured variables.

[Insert Table 1 About Here]

Table 2 shows the results of the endogenous variables. It shows that all 24 indicators of the SOC had high factor loading scores. In only one case was the score less than 0.50. The R^2 values were also high. Satisfaction with Life is represented by five indicators. The factor loading scores and R^2 values show that the five items had a good fit to this construct. The items of the mental health symptoms dimension obtained lower scores, although in only three cases were they less than 0.40. Finally, the illness dimension obtained very high scores for each of the three indicators used to measure it.

[Insert Table 2 About Here]

6.2. Descriptive statistics and correlations

Table 3 shows the descriptive statistics and correlations between variables. It should be noted that the descriptive variables are the factorial scores derived from the measurement model. A positive correlation was found between the three types of social support and the SOC and SWL. To different degrees, a negative correlation was found between the three sources and mental health symptoms and illness. A negative correlation was found between the SOC and mental problems, and a small positive

518 correlation between the SOC and illness. A negative correlation was found between
519 SWL and the two indicators of health problems.
520
521 [Insert Table 3 About Here]
522
523 **6.3. Structural model**
524 Table 4 shows the results of the two structural models. The global adjustments and
525 explained variance (R^2) of each of the variable criteria improved from model 1 to model
526 2. The final values were: NFI = .967, CFI = .970, IFI = .970, GFI = .991, AGFI = .935,
527 RMR = .003, SRMR = .031, RMSEA = .086, R^2 SOC = .062, R^2 SWL = .250, R^2 MHS
528 = .10, and R^2 ILL =. 032. This table shows the statistically significant associations (p
529 <.05).
530
531 The first model introduced SOC as a mediating variable. The mediating role of this
532 variable can be seen in the indirect effects. A significant positive association was found
533 between family social support and SWL (γ = .504) and a negative association between
534 this source and mental health symptoms (γ = -.018) and illness (γ = .213). A positive
535 association was also found between social support from native friends and the SOC (γ =
536 .131) and SWL (γ = .436). No significant association was found between social support
537 from immigrant friends and the criterion variables. Table 4 shows that the SOC
538 exhibited a small mediating effect. This is shown by the greater positive association
539 between support from native friends and SWL (γ = .085). The SOC exhibits a very
540 small mediating effect between support from native friends and mental health symptoms
541 (γ = -.001). It is noteworthy that the SOC exhibits a small positive effect between
542 support from native friends and illness (γ = .047). Table 4 shows a strong association
543 between the SOC and SWL (β = .648); however, the SOC exhibited a weaker
544 association with mental health symptoms (β = -.009) and illness (β = .359). The
545 association between the SOC and illness was positive, in contrast to the original
546 hypothesis.
547
548 The second model included SWL as the second mediating variable. The association
549 between family support and mental health symptoms was mainly mediated by SWL (γ =
550 -.006) and not by SOC (γ = -.000). Similarly, the association between support from
551 native friends and mental health symptoms was mediated by SWL (γ = -.005) and not
552 by SOC (γ = -.001). Family support was associated with lower levels of illness via SWL
553 (γ = -.076) rather than via the SOC (γ = .008). Life satisfaction mediated the indirect
554 effect of SOC on mental health symptoms (β = -.008) and illness (β = -.111). A direct
555 negative association was found between SWL and mental health symptoms (β = -.012)
556 and illness (β = -.171).
557
558 Finally, the second model was recalculated and paths that were not statistically
559 significant (t-value <1.96, p > .05) were eliminated. Its global adjustment indexes are
560 good (NFI = .955, CFI = .966, IFI = .966, GFI = .987, AGFI = .977, RMR = .018,
561 SRMR = .037, and RMSEA = .051). Figure 2 shows the standardized coefficients.
562 Social support from the family and native friends explained greater SOC and SWL, and
563 lower mental health symptoms and illness. No statistically significant association was
564 found between social support from immigrant friends and the remaining variables. The
565 SOC exhibited a small mediating effect, although it was associated with greater SWL,

fewer mental health symptoms, and more illness. Life satisfaction was associated with fewer mental symptoms and less illness; it also had capacity to mediate the effect of social support and the SOC.

[Insert Table 4 About Here]

7 Discussion

The main objective of this study was to investigate the association of social support and the sense of community with satisfaction with life and immigrant health. We proposed a model in which perceived social support from the closest sources, would be as mediated by the SOC and life satisfaction, which in turn would be positively associated with mental and physical health.

Results provide support for many of the hypothesized associations between these variables, and in the predicted direction. Positive associations were found between social support from native friends and higher scores in the SOC and SWL. A positive association was also found between the SOC and SWL. Finally, a strong association was found between satisfaction with life and lower levels of the number of mental health symptoms and number of illnesses.

The results provide partial support for H1 and H2. This study design allowed us to analyse in greater depth the complexity of associations between these variables and their effects on satisfaction with life and subsequently with mental and physical health. It was important to examine three distinct sources of social support to identify the distinct effect contributed by each of these sources of social support on other factors of interest. We found a positive association between support from native friends (those born in the new host country) and the SOC, and a positive association between support from the family and native friends and greater satisfaction with life. On the other hand, no association was found between perceived support from immigrant friends and the sense of community or satisfaction with life.

The latter result may be explained by the fact that satisfaction with support is mainly determined by the needs of the individuals (Lin, 1986). This aspect is included in the Theory of Specificity by Cohen and McKay (1984), who suggested that social support is more effective when it is adjusted to the problem that needs to be addressed. It may be the case that positive interactions with native members of the community would better meet the needs of immigrants in the host society. In other words, among immigrants, a sense of community best develops from social support that is received from native residents from the host country. It has been found that psychosocial adjustment among this group of international immigrants is facilitated by the presence of native people in their social networks, and by satisfaction with the contact maintained with members of the host society (Searle and Ward, 1990). It could also be the case that native-born individuals, those from the host country, have more to offer in terms of social support. They may have more social and human capital to offer the immigrant, since they are well acquainted with the customs and practices of the host society, as

613 compared with immigrants who are still trying to acculturate and to understand the
614 customs and practices of the new host society.
615
616 In addition, other studies have shown that although immigrants can have access to
617 different sources of support, in general they experience significant disadvantages when
618 they receive support from others belonging to their own ethnic group, who often have
619 less social capital and limited resources that they can offer the immigrant person (Kim
620 and McKenry, 1998). On the other hand, positive relationships with individuals from
621 the new host society may make the immigrant feel more integrated and accepted within
622 the new the host country, and lead to an increase in perceived support and life
623 satisfaction (Domínguez-Fuentes and Hombrados-Mendieta, 2012). Conversely, among
624 immigrants, this effect also suggests the potent and detrimental effects of discrimination
625 when it is received from persons who are natives of the host society.
626
627 These results also allow us to analyse the support needs of immigrants from a dynamic
628 perspective. Support needs change as the migration process evolves (Kahn and
629 Antonucci, 1980). When immigrants first arrive in a new country they seek contact,
630 support, and validation from their compatriots, but as they settle down and integrate into
631 the host country they seek contact, support, and validation from members of the new
632 host society. From this perspective, it would be of interest to conduct an in-depth
633 qualitative interview analysis of contextual factors in social support from immigrant
634 friends, which we found to have the weakest associations as influences on sense of
635 community and satisfaction with life.
636
637 In general, many studies have found an association between perceived support and
638 mental health symptoms and illness (Dinh et al., 2009; Jibeen, 2011; Kristiansen et al.,
639 2006). In general, social relationships typically exert a positive effect on immigrant
640 health such that social support from family and friends may serve as indicators of
641 optimal levels of health (Zhang and Ta, 2009). The results of our study show that family
642 support has the strongest effect on lower levels of mental health symptoms. In this
643 model, perceived family support is the best protector of the mental health of
644 immigrants. This result is consistent with studies that have shown that family
645 relationships help immigrants to maintain appropriate health behaviors, and to avoid
646 specific risk behaviors, to improve their quality of life (Aqtash and Van Servellen,
647 2013; Gracie et al., 2012).
648
649 These findings are also corroborated by other studies that have suggested that family
650 support is the type of support associated with fewer mental health symptoms and more
651 positive well-being (Runyan et al., 1998). Moreover, the health of immigrants is
652 significantly compromised by negative experiences, including discrimination
653 experience within the host country, although there exist remarkable differences
654 involving family support and integration in the community (McClure et al., 2015).
655 Results of the present study confirm the need to examine the different sources of
656 support to better understand the actual experience of support. This approach is
657 suggested by ecological and systemic models (Bronfenbrenner, 2005) that emphasize
658 the relevance of the development of social relationships through key microsystems such
659 as family and friends.
660

661 The results of this study partly support H3, given that the SOC exhibited a small
662 mediating effect. On the other hand, SWL exhibited a stronger mediating effect than the
663 SOC. This result is of interest and demonstrates the relevance of SWL within an
664 immigrant population. In fact, few studies have analysed the dual role of life satisfaction
665 as a beneficial outcome of perceived support and as a mediating variable between the
666 variables that precede it and positive health outcomes. Some authors have suggested
667 that SWL should be considered as a significant intervening cognitive variable (Proctor
668 et al., 2009).
669
670 These study results partly support H4. A strong association was found between the SOC
671 and SWL. For international immigrants, this result suggests the beneficial effects of
672 successful integration into a new host community on immigrants' satisfaction with life.
673 A significant positive association was found between the SOC in immigrant populations
674 and their SWL. Some studies have highlighted the association between sense of
675 community and the satisfaction with life (Fugl-Meyer et al., 2002; Hombrados-
676 Mendieta et al., 2009; Moscato et al., 2014). However, although no association was
677 found between the SOC and mental health symptoms, a positive association was found
678 between the SOC and illness. This finding may be explained by the fact that controlling
679 interaction at the community level could be more difficult than at the interpersonal
680 level, which may lead to more stress when the possibility of controlling contact is
681 absent (Altman, 1975).
682
683 Another explanation is that increased contact and interaction with others may increase
684 the risk of contagion of other illnesses. This aspect may be particularly relevant for
685 immigrant populations, which must adapt to new illnesses within the host society.
686 Malgesini (2002) pointed out that the most common illnesses are reactive illness,
687 adaptive illnesses, or illnesses acquired in the community due the working conditions
688 experienced, as well as in their living conditions, that can include overcrowding and
689 poverty, which increase the risk of members of an immigrant community contracting
690 certain illnesses.
691
692 Furthermore, integration into a new community is often contingent on acquiring the new
693 customs, habits and lifestyles of members from the host society. Among international
694 immigrants, this assimilation may occur with changes that involve the acquisition of
695 unhealthy behavioral patterns, or with the acquisition of healthier behaviors. This
696 process can depend on the immigrant's particular reference group (Gordon-Larsen et al.,
697 2003). Latino immigrants, especially Mexicans who migrate to the US, are a case in
698 point. With greater length of residency and acculturation into the mainstream society,
699 many experience an increase in health problems, such as diabetes, because they
700 abandon the habits of their country of origin, adopting less healthy habits, and
701 consuming products that are inexpensive and readily available.
702
703 The SOC corresponds to a deeper level of analysis and it should be analysed to
704 determine whether community resources satisfy the needs of the immigrant population.
705 To promote the health of immigrants, it would be useful to develop resources that
706 satisfy health needs in order to strengthen the association between the SOC and
707 improved health (Hombrados-Mendieta et al., 2013). In fact, some studies have shown
708 that immigrant populations experience difficulties in accessing mental health services

709 and make less use of them (Gilgen et al., 2005; Nadeem et al., 2008; Tieu and Konnert,
710 2014).
711
712 The results of this study also support H5. Significant associations were found between
713 SWL and a lower scores in mental health symptoms and illness. When immigrants feel
714 satisfied with life in the community, there is a negative association between SWL and
715 mental health symptoms and illness. According to the model, SWL depends on having
716 support networks, mainly family and native, and being integrated into the community.
717
718 In summary, this study has demonstrated an important association between the SWL of
719 immigrants and their physical and mental health. Other studies have obtained similar
720 results (Moreta-Herrera et al., 2018).

721 **7.1 Limitation of this Study**

722 This study has a few limitations. It should be noted that results related to the migration
723 processes are strongly influenced by the setting in which a cohort of immigrants live
724 (Long and Perkins, 2007). Accordingly, generalizations arising from these types of
725 studies should be conducted with caution. This study consisted of a cross-sectional
726 design, and accordingly, the temporal sequence of events depicted in our model is
727 suggestive, and not confirmatory. We recognize that explanations involving a reversal
728 in temporal ordering in our model would also be plausible. In a future study, it would be
729 of interest to analyse all the variables over time to observe actual temporal effects in
730 how the sense of community develops, how social networks are created, and how they
731 influence the wellbeing of immigrant populations. Future studies should also identify
732 the elements that facilitate the development of the sense of community and satisfaction
733 with life in each of several diverse immigrant groups, and that analyse differences as
734 moderated by sociodemographic characteristics (e.g., age, sex, and ethnicity).

735 **7.2 Implications for Research, Practice and Policy**

736 The results of this study are relevant to research, policy, and practice. We have
737 indicated the need to analyse the migration process from a multidimensional approach
738 to social support. We consider it important to design intervention strategies that will
739 facilitate intercultural relationships between immigrants and natives of the host society.
740 In addition, we suggest that positive interaction patterns should be promoted between
741 immigrants and their friends and family, to build positive perceptions of social support.
742 Special attention should be given to immigrants who lack family support. Thus, given
743 that for large periods of time immigrants are geographically separated from their
744 families, health care professionals should work with immigrants to aid in the
745 development of their online social networks (Kogstad et al., 2013).
746
747 The present study findings suggest the need to create policies and interventions that
748 encourage the participation of immigrants in relevant community activities, to increase
749 their integration in a community and to develop their sense of community. We have
750 shown the importance of studying community resources to analyse whether they
751 actually meet the needs of the immigrant population. A fulfilment of these needs could
752 strengthen the relationship of SOC on health and well-being among members of an
753 immigrant group. This study highlights the importance of health professionals in

754 developing specific tasks that promote community health and disease prevention among
755 immigrants, the promotion of healthy habits, a protection against endemic diseases, and
756 the avoidance of unhealthy behaviors within the new host community (Cunningham et
757 al., 2008). The findings of the present study can also inform the development of
758 strategies to prevent social conflict, improve quality of life, and facilitate intercultural
759 coexistence.

760 **7.3 Conclusion**

761 This study was conducted using a large and diverse sample of international immigrants.
762 Accordingly, these study results may be applicable to similar populations, with
763 implications for the design of health promotion interventions that are applicable within
764 multicultural communities. Furthermore, these results can inform social policies that
765 advocate for the creation of social support networks, positive interactions with
766 individuals from the host community, and that promote immigrants' effective
767 integration into a local community. The principal aim in these efforts is to improve the
768 health of immigrants, and their health and life satisfaction, as these outcomes can
769 enhance intercultural relations among diverse sectors of a community.
770

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1279 **Table 1**
1280 Measurement model. Exogenous variables social support from family (SSF), native friends (SSNF), and
1281 immigrant friends (SSIF).
1282

Items	*M*	*SD*	R^2	SSF	SSNF	SSIF
Social support from family						
Frequency of emotional support	4.05	1.110	.668	.817		
Satisfaction with emotional support	4.16	1.018	.746	.864		
Frequency of instrumental support	3.95	1.160	.610	.781		
Satisfaction with instrumental support	4.15	1.063	.698	.835		
Frequency of informational support	3.97	1.138	.655	.810		
Satisfaction with informational support	4.10	1.066	.748	.865		
Social support from native friends						
Frequency of emotional support	3.58	1.195	.790		.889	
Satisfaction with emotional support	3.80	1.139	.804		.897	
Frequency of instrumental support	3.27	1.289	.654		.809	
Satisfaction with instrumental support	3.59	1.243	.710		.843	
Frequency of informational support	3.56	1.212	.731		.855	
Satisfaction with informational support	3.77	1.159	.754		.868	
Social support from immigrant friends						
Frequency of emotional support	3.53	1.252	.757			.870
Satisfaction with emotional support	3.72	1.193	.833			.913
Frequency of instrumental support	3.25	1.306	.670			.819
Satisfaction with instrumental support	3.53	1.272	.774			.880
Frequency of informational support	3.44	1.262	.727			.853
Satisfaction with informational support	3.62	1.243	.809			.900

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1285 **Table 2**
1286 Measurement model. Endogenous variables sense of community (SOC), satisfaction with life (SWL),
1287 mental health symptoms (MHS), and illness (ILL).

Items	*M*	*SD*	R^2	SOC	SWL	MHS	ILL
Sense of community							
My important needs are fulfilled because I am part of this neighbourhood.	2.48	.820	.422	.649			
My neighbours and I value the same things.	2.28	.787	.384	.620			
This neighbourhood has been successful in meeting the needs of its residents.	2.43	.745	.339	.582			
Being a member of this neighbourhood makes me feel good.	2.65	.810	.495	.704			
When I have a problem, I can talk to the neighbours.	2.10	.906	.441	.664			
The people in this neighbourhood have similar needs, priorities, and goals.	2.31	.801	.331	.576			
I can trust the people of this neighbourhood.	2.25	.770	.430	.656			
I can recognize most of the residents in this neighbourhood.	2.55	.870	.272	.522			
Most of the residents in this neighbourhood know me.	2.48	.865	.274	.524			
This neighbourhood has symbols and expressions such as signs and landmarks that people can recognize.	2.37	.890	.178	.422			
I put a lot of time and effort into this neighbourhood.	1.95	.848	.423	.650			
Being a member of this community/neighbourhood is a part of my identity.	2.13	.905	.561	.749			
Feeling that I belong to this community/neighbourhood is important to me.	2.36	.882	.616	.785			
This community/neighbourhood can influence other communities/neighbourhoods.	2.10	.828	.293	.541			
I care what other residents in the neighbourhood think of me.	2.06	.957	.329	.574			
I have an influence on how the neighbourhood is.	1.82	.847	.315	.561			
If there is a problem in this neighbourhood, the members can solve it.	2.31	.768	.349	.590			
This neighbourhood has good leaders.	2.04	.867	.389	.624			
It is very important for me to be part of this community/neighbourhood.	2.33	.901	.650	.806			
I spend a lot of time with other residents of the neighbourhood and I really enjoy being with them.	2.07	.931	.555	.745			
I hope to be part of this neighbourhood for a long time.	2.57	.911	.510	.714			
The residents of this neighbourhood have shared important events together, such as holidays, celebrations, or disasters.	2.32	.958	.418	.647			
I feel hopeful about the future of this neighbourhood.	2.49	.879	.493	.702			
The residents of this neighbourhood care about each other.	2.28	.802	.422	.649			
Satisfaction with life							
In most things, my life is close to my ideal.	4.39	1.382	.693		.832		
The conditions of my life are excellent.	4.26	1.423	.676		.822		
I am satisfied with my life.	4.72	1.451	.771		.878		
So far, I have achieved the things that are important to me in life.	4.71	1.490	.631		.794		
If I were to be born again, I would like everything to be the same again in my life.	4.01	1.770	.446		.668		
Mental health symptoms							
Were you able to concentrate properly on what you were doing?	1.22	.675	.124			.352	
Have your concerns caused you to lose much sleep?	1.13	.898	.286			.535	
Have you felt that you are playing a useful role in life?	1.02	.671	.208			.456	
Have you felt capable of making decisions?	.93	.687	.164			.404	
Have you felt constantly overwhelmed and stressed?	1.24	.922	.376			.613	
Have you felt that you are unable to overcome your difficulties?	.98	.861	.381			.617	
Have you been able to enjoy your normal daily activities?	1.07	.665	.244			.494	
Have you been able to address your problems adequately?	1.02	.593	.255			.505	
Have you been feeling unhappy or depressed?	.86	.872	.608			.780	

Have you lost confidence?	.55	.763	.547	.740	
Have you felt worthless?	.39	.709	.502	.709	
Do you feel reasonably happy all things considered?	.95	.610	.258	.508	
Illness					
Number of diseases or health problems. “Have you had this problem in the last 12 months?”	1.97	2.217	.801		.895
Number of diseases or health problems. “Has a doctor told you that you have this problem?”	1.35	1.872	.863		.929
Number of diseases or health problems. “Are you taking or have you taken medication for this problem in the past 12 months?”	1.18	1.682	.870		.933

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1290 **Table 3**
1291 Descriptive statistics and correlations. Variables are the factorial scores derived from the measurement model.
1292 Sense of community (SOC), Satisfaction with life (SWL), Mental health symptoms (MHS), Illness (ILL), Social support from family (SSF), Social
1293 support from native friends (SSNF), and Social support from immigrant friends (SSIF).
1294

	SOC	SWL	MHS	ILL	SSF	SSNF	SSIF
Sense of community							
Satisfaction with life	0.303^{**}						
Mental health symptoms	-0.100^{**}	-0.305^{**}					
Illness	0.064^{*}	-0.120^{**}	-0.128^{**}				
Social support from family	0.150^{**}	0.402^{**}	-0.228^{**}	-0.103^{**}			
Social support from native friends	0.244^{**}	0.379^{**}	-0.141^{**}	-0.053	0.477^{**}		
Social support from immigrant friends	0.125^{**}	0.218^{**}	-0.056	-0.083^{**}	0.389^{**}	0.377^{**}	
M	1.146	1.349	0.040	1.056	1.020	0.753	0.440
SD	0.417	1.262	0.057	1.724	0.705	0.687	0.583

1295
1296 ** $p < .01$ * $p < .05$

Table 4

Unstandardized structural coefficients, standard errors (in brackets) and t-values of the direct and indirect relationships between the predictor variables and criterion variables. In bold the significant coefficients ($p < .05$).

Social support from family (SSF), Social support from native friends (SSNF), Social support from immigrant friends (SSIF), Sense of community (SOC), Satisfaction with life (SWL), Mental health symptoms (MHS), and Illness (ILL).

		Model 1 (Mediating variable: SOC)		*Model 2 (Mediating variables: SOC+SWL)*	
Predictor variable	Criterion variable	Direct effect	Indirect effect	Direct effect	Indirect effect
SSF	SOC	.021 (.020) 1.05		.021 (.020) 1.05	
SSN		**.131 (.021) 6.40**		**.131 (.021) 6.40**	
SSI		.021 (.023) 0.91		.021 (.023) 0.91	
SSF	SWL	**.490 (.054) 9.02**	.014 (.013) 1.05	**.490 (.054) 9.02**	.014 (.013) 1.05
SSN		**.351 (.056) 6.22**	**.085 (.017) 5.01**	**.351 (.056) 6.22**	**.085 (.017) 5.01**
SSI		.028 (.062) .441	.014 (.015) 0.90	.028 (.062) 0.44	.014 (.015) 0.90
SOC		**.648 (.081) 8.04**		**.648 (.081) 8.04**	
SSF	MH	**-.018 (.003) -6.43**	.000 (.000) -0.94	**-.012 (.003) -4.32**	**-.006 (.001) -6.04**
SSN		-.003 (.003) -1.18	**-.001 (.001) -2.02**	.001 (.003) 0.25	**-.005 (.001) -5.27**
SSI		.005 (.003) 1.61	.000 (.000) -0.83	.005 (.003) 1.75	-.001 (.001) -.66
SOC		**-.009 (.004) -2.12**		-.001 (.004) -0.27	**-.008 (.001) -5.66**
SWL				**-.012 (.001) -7.95**	
SSF	ILL	**-.220 (.085) -2.59**	.008 (.008) 0.99	-.136 (.087) -1.55	**-.076 (.026) -2.98**
SSN		-.025 (.088) -0.29	**.047 (.018) 2.61**	.035 (.089) 0.39	-.013 (.026) -0.50
SSI		-.162 (.097) -1.67	.008 (.009) 0.87	-.158 (.097) -1.63	.003 (.014) 0.20
SOC		**.359 (.126) 2.85**		**.470 (.129) 3.65**	**-.111 (.033) -3.37**
SWL				**-.171 (.046) -3.70**	

Figures captions.

Figure 1
Structural equation model proposed. Path diagram of the theoretical relationships between variables.

Figure 2
Empirical model of the relationships between the variables. Statistically significant direct coefficients (total effects, in bracket) obtained for the structural equations model proposed.