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# Mental Health of Spanish Immigrants in Germany and the UK in Comparison to Non-Immigrants and Migration Protective Factors

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ABSTRACT

The global economic crisis of the previous decade has accelerated internal mobility in the European Union. The main objective was to analyse perceived stress and mental health among Spanish immigrants and non-immigrants, as well as gender differences, and to examine the mediation role of perceived stress in the relationship between migration protective factors and mental health. A convenience sample ($N$ = 941) was obtained by snowball sampling, contacting with social networks during 2014 and 2015. Spanish immigrants ($n$ = 719) living in Germany or United Kingdom and non-immigrants ($n$ = 222) living in Spain answered an online survey with a questionnaire about socio-demographic and migration variables (immigrants) as well as PSS-14 and GQH-28. The low level of perceived stress and mental health symptoms found were similar in Spanish immigrants and non-immigrants. Women immigrants presented slightly higher rates of prevalence of somatisation and anxiety/insomnia and higher perceived stress. A parsimonious structural equation model with two protective migration factors was obtained ($R^2$ = .58), which had direct and indirect effects on mental health through perceived stress. The migration process was not related to poorer mental health in the European context, and gender differences were small. These findings could be explained by the privileged migration conditions of Spanish immigrants.

## La salud mental de los españoles inmigrantes en Alemania y Reino Unido en comparación con los españoles no inmigrantes y sus factores protectores

RESUMEN

En la última década la crisis económica global ha acelerado la movilidad interna dentro de la Unión Europea. El objetivo principal de este estudio ha sido analizar el estrés percibido y la salud mental de los españoles inmigrantes en comparación con los no inmigrantes, atendiendo a las diferencias de género. Un objetivo complementario era examinar el papel mediacional del estrés percibido en la relación entre los factores protectores migratorios y la salud mental. Se obtuvo una muestra de conveniencia ($N$ = 941) a través del muestreo de bola de nieve contactando con redes sociales en el periodo 2014-2015. Españoles inmigrantes (719 residentes en Alemania o Reino Unido) y no inmigrantes ($n$ = 222) respondieron en internet a un cuestionario sobre variables sociodemográficas y migratorias (inmigrantes), así como a los instrumentos PSS-14 y GHQ-28. Los bajos niveles de estrés percibido y los síntomas de salud mental encontrados fueron similares en la población española inmigrante y no inmigrante. Las mujeres inmigrantes presentaban tasas de prevalencia ligeramente más elevadas en somatización, ansiedad e insomnio que los hombres inmigrantes. Se obtuvo un modelo de ecuaciones estructurales parsimonioso que incluía dos factores migratorios protectores ($R^2$ = .58), con efecto directo e indirecto en la salud mental a través del estrés percibido. El proceso migratorio estudiado no se relaciona con peor salud mental en el contexto europeo y las diferencias en función del sexo son muy pequeñas. Estos resultados pueden explicarse por las condiciones privilegiadas migratorias de la población española en otros países de la Unión Europea.

Since 2008, the Spanish economic crisis has reduced job opportunities and has made access to the labour market difficult, especially for young people and despite high educational levels. Thus a wave of Spanish people has emigrated toward other European Union countries (EU) for economic reasons and the desire to find greater professional and social recognition, despite the fact that mobility does not always guarantee that planned expectations will be met (Alaminos, Albert, & Santacreu, 2010).

By October 2017, 16% of Spain's active population was registered as being unemployed, with a slightly higher percentage of women (18% women and 15% men) (INE, 2017b). This rate was lower than in previous years in the same period (2016, 19%; 2015, 21%; 2014; 24%) and is the lowest since October 2008. However, Spain has the EU's second highest unemployment rate and the third highest percentage of underemployed part-time workers who wished to work more (51%) (Eurostat, 2017). Further, in December 2016 the second highest rate of youth unemployment was observed in Spain (43%) (Eurostat, 2017). Spaniards born in Spain who emigrate to Europe (mostly Germany and the UK) and to the USA (Izquierdo, Jimeno, & Lacuesta, 2016) have a high level of education (see Izquierdo, Jimeno, & Lacuesta, 2014). In September 2017, Europe's second and fourth lowest unemployment rates were recorded in Germany (4%) and the UK (5%), with Germany having the lowest rate of youth unemployment (Eurostat, 2017). It is important to highlight that Spaniards do not need permission to work legally in EU countries. The fact that there are many Spanish people in Germany and the United Kingdom facilitates the creation of emigrant networks. These networks offer support to new emigrants and play a role in the decision to migrate and in the process of psychological adaptation in the host country (Maya, Martínez, & García, 1999).

## Migratory Process, Acculturation, and Adjustment to Host Society

Different migratory groups exist, and their variety is primarily due to three factors: voluntariness, mobility, and permanence (Berry, 1997). It can be assumed that migration is usually voluntary, and that it is made to another country with the idea of settlement. However, sometimes people are forced by necessity (refugees, asylum seekers, and indigenous population), have no cross-cultural relocation (indigenous population and established ethno-cultural communities), or are only on a temporary stay (students and sojourners). These factors would partly explain the variability in the way immigrants adjust. Current Spanish migration to Europe is made voluntarily, to similar countries, and in the main the situation is temporary and without legal barriers for crossing the border. This wave of Spanish migration (non-refugees) is not considered as being dramatic due to the fact that these immigrants have higher levels of education and intercultural skills, and today's new forms of communication facilitate their continued contact with family and friends (Alaminos & Santacreu, 2010).

Migration is understood to be a transitional process whereby people move to another country, with the subsequent exposure to a new physical and socio-cultural context. The changes that take place due to contact with culturally dissimilar people, groups, and social influences have been defined as acculturation (Gibson, 2001). Acculturation requires socio-cultural and psychological adjustment (Ward & Kennedy, 1999). Socio-cultural adjustment is defined by behavioural competences and skills to interact adequately in the host country in areas like family, work, educational system, and intergroup relationships. Psychological adjustment is the degree of wellbeing shown by immigrants as a result of cultural contact and adjustment. In psychological adjustment research, variables such as stress, depression, anxiety, somatisation, mental health in general, or satisfaction with life have been measured (e.g., Birman, Simon, Chan, & Tran, 2014; Castaneda et al., 2015; Searle & Ward, 1990).

## Acculturation Stress vs. the Immigrant Health Paradox

According to the theoretical model of Berry (1997), the long-term psychological consequences of the acculturation process depend on social (political, socioeconomic, and demographic characteristics of the society of origin and the attitudes and social support in the host society) and individual factors (personal and acculturation experience variables prior to and during acculturation). In the migration process, if a person feels that acculturation process events are undesirable, unpredictable, or uncontrollable, these are more likely to cause acculturative stress. A prolonged period of such perceived stress along with a lack of coping strategies in reducing stress lead to immigrants becoming vulnerable to developing clinical internalizing symptoms (somatisation, anxiety, and depression) and externalizing symptoms (social dysfunction and delinquency) (Berry, 1997; Katsiaficas, Suárez-Orozco, Sirin, & Gupta, 2013; Kiang, Grzywacz, Marín, Arcury, & Quandt, 2010; Singhammer & Bancila, 2011). The complexity of events experienced during migration coupled with the inability to cope with them can lead to situations involving high levels of stress which is associated with mental health problems (Singhammer & Bancila, 2011). This relation between acculturation, stress, and health has been defined as the *acculturation stress hypothesis* (Berry & Sam, 1996).

Nevertheless, there is evidence against this hypothesis when we look at the fact that the mental health of immigrants has been found to be the same as or better than that of the native population (destination country) (Amponsah, 2010). Consistent with these findings, the hypothesis of the *immigrant health paradox* (Markides & Coreil, 1986) asserts that the physical and psychological health of the immigrant population, despite poorer socio-economic conditions, is as good as or better than that of the native population, according to the studies based on the Mexican population living in the USA (e.g., Cuellar, Bastida, & Braccio, 2004). Consistent with this hypothesis, studies based on the adult immigrant population in European countries showed mental health to be similar to the origin country population (Elgorriaga, Ibabe, & Arnoso, 2016; Erlinghagen, 2011; Glaesmer et al., 2009).

It is not clear at present whether the immigrant paradox is due to the acquisition of receiving culture, the loss of heritage culture, or both (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). On the one hand, some studies suggest that better mental health can be explained by the better political situation in place in the host country in comparison to the country of origin (Glaesmer et al., 2009), or by the existence of protective socio-cultural factors, such as the social support provided by collectivist cultures or religious beliefs (Vega et al., 1998). On the other hand, the World Health Organisation (WHO, 2010) states that the different results found in the scientific literature on the mental health of immigrants may be due to two reasons: the diversity of situations and conditions that occur in the migratory processes as well as the different comparison groups used in those studies (native population, refugees, other immigrants in the destination country, international students, non-immigrants in the origin country, or a mixture of people with different characteristics). In order to prevent these types of methodological problems, some authors have recommended a comparison between the mental health of immigrants and those who remain in the country of origin (Mirsky, 1997) and the control of variables such as immigration status, gender, educational level, or employment status (Berry, 1997). For example, high-effort coping with demanding psychosocial stressors (e.g., financial/occupational concerns, discrimination) among immigrants with low socio-economic status (SES) could compromise their health more than among immigrants with higher SES (James, 1994).

With respect to gender differences in mental health, research results indicate that immigrant women suffer more from stress-related disorders, such as internalizing symptoms, compared to immigrant men (Aroian, Norris, Gonzalez de Chavez Fernandez, & Averasturi, 2008; Dalgard & Thapa, 2007; Singh, McBride, & Kak, 2015; Singhammer & Bancila, 2011). It is known that constraints and opportunities differ for men and women in both the origin and the host society, and therefore, demands made on immigrants may be more or less salient for a particular gender (Aroian et al., 2008). Generally, immigrant women are exposed to more social, health,

economic, labour, and legal problems (Darvishpour, 2002; Dion & Dion, 2001), are more likely to suffer multiple discrimination (against women, immigrants, and sometimes members of an ethnic group) (Haberfeld, Semyonor, & Cohen, 2000; Parellá, 2003), and have to face changes and/or an overload of roles and values (Aroian, Norris, & Chiang, 2003). In addition, according to Magaña and Hovey's (2003) study, women's mental health is more related to family-related experiences, whereas men's mental health is more influenced by work and economic factors.

## Migration Predictors of Perceived Stress

The difficulties experienced in the social adaptation to a new society have implications for psychological adaptation and would justify the description of migration as being stressful (Berry, 1997). The predictive stress factors among the immigrant population in general includes economic problems (Cuellar et al., 2004), absence of social support (Singh et al., 2015), cultural distance, and discrimination (Ward & Kennedy, 1999), language barriers (Jasinskaja-Lahti, Liebkind, & Perhoniemi, 2006), or new intergroup contacts (Berry, 1997), among other variables. The effect of these factors on stress may vary from one cultural group to another and from one context to another (Berry, 1997).

Fulfilment of migration expectations could be especially relevant in understanding the psychological adjustment to the host society. There is empirical evidence in favour of socio-cultural and psychological adjustment being supported by the fulfilment of economic or achievement expectations (Kiang et al., 2010) and social expectations (family relations, friendships, hobbies, and free time) (Mähönen, Leinonen, & Jasinskaja-Lahti, 2013). Moreover, a recent study by Elgorriaga et al. (2016) based on Spanish immigrants living in other European countries (including international students, working immigrants, employment seekers, and family regroupings) found unfulfilled migration expectations and precarious employment conditions to be the best predictors of perceived stress in immigrants among several migration variables analyzed, such as pre-migration job status, post-migration job status, quality of residence, networks of contact and support, or perceived basic needs. These factors are also found in studies with other immigrant groups and contexts (Berry, 1997; Jasinskaja-Lahti et al., 2006; Ward, Bochner, & Furnham, 2001), and these findings would indicate that unfulfilled migration expectations are associated with lower psychological adjustment.

Employment status and underemployment (when individuals' education, skills, work experiences, and abilities are underutilized in their present job) are especially relevant in understanding the migratory motives and psychological adjustment to the host society. It is known that unemployment and labour instability are a source of stress, internalizing symptoms (anxiety, depression and somatisation), and low satisfaction among both the general (Pinto-Meza et al., 2013) and the immigrant population (Dean & Wilson, 2009). Underemployment has received much less attention than unemployment, even though studies with Russian-speaking refugee adults in the U.S. (Vinokurov, Trickett, & Birman, 2017) or with Spanish immigrants in the United Kingdom and Germany have shown that the degree of underemployment is substantial among the immigrant population (e.g., Vallejo-Martin, 2017; Vinokurov et al., 2017). For example, underemployment rates among immigrants in the U.S. are estimated to be over fifty percent (Terrazas, 2011). Moreover, there is some empirical evidence on the potential risk of underemployment for psychological maladjustment. Some studies based on immigrants of different countries including Spain have found that underemployment is related to stress, internalizing symptoms, and low life satisfaction (De Castro, Rue, & Takeuchi, 2010; Dean & Wilson, 2009; Elgorriaga et al., 2016; Reid, 2012; Vallejo-Martín, 2017).

## Goals and Hypotheses

The first purpose was to analyse whether the migration process is related to more perceived stress and poorer mental health in the European Union context, and also to gender differences. In this regard, the level of perceived stress and the prevalence and level of clinical symptoms (somatisation, anxiety/insomnia, severe depression, and social dysfunction) among Spanish immigrants in European Union countries were expected to be similar to that of the population of origin (e.g., Glaesmer et al., 2009 (Hypothesis 1). In this study Spanish female immigrants were expected to display slightly higher levels of perceived stress and mental health symptoms than Spanish male immigrants (Singhammer & Bancila, 2011) (Hypothesis 2).

A second objective focused on the immigrant population involved by analyzing the mediational role of perceived stress in the relationship between the protective factors of migration and mental health, using meditational structural equation models. On the one hand, we are already aware that the degree of fulfilment of migration expectations (e.g., Kiang et al., 2010) and good working conditions (e.g., Vallejo-Martín & Moreno-Jiménez, 2016) will be predictors of lower perceived stress (Hypothesis 3). On the other hand, perceived stress during the adjustment process will predict mental health problems (e.g., Katsiaficas et al., 2013) (Hypothesis 4). The mediational stress model will be essentially equivalent for men and women, although it may differ in trivial ways because women may have a greater susceptibility to surrounding stress and mental health problems (Sandanger, Nygard, Sorensen, & Moum, 2004) (Hypothesis 5).

## Method

### Participants

The immigrant group (Spanish people living in the European Union) did not include refugees or students but immigrants seeking employment. The non-immigrant group (Spanish people in Spain) was equivalent in relation to educational level, sex, employment situation, and employment quality perception. Specifically, the sample was made up of a group of Spanish immigrants in Germany and United Kingdom ($n$ = 719) and an equivalent control group of Spanish non-immigrants ($n$ = 222). The total sample size was 941 adults (non students) of Spanish nationality, aged between 18 and 55 ($M$ = 29.2, $DT$ = 5.4) and of both sexes (65% women and 35% men).

When comparing the immigrant population to the non-immigrant population, it was observed that there were no significant statistical differences according to sex, $\chi^2(1, N = 941)$ = 1.47, $p$ = .13, educational level, $t(940)$ = 0.573, $p$ = .447, employment situation (employed vs. unemployed), $\chi^2(1, N = 941)$ = 0.306, $p$ = .327, and employment quality, $t(940)$ = 0.845, $p$ = .398. The group of non-immigrants was therefore considered to be a properly controlled group for making comparisons with the immigrant group. Moreover, in the immigrant group there were no differences between men and women with respect to education level, $t(445.07)$ = 0.978, $p$ = .329, employment situation, $\chi^2(1, N = 719)$ = 0.396, $p$ = .529, or employment quality perception, $t(567.58)$ = 1.792, $p$ =.074.

### Procedure

Data collection was carried out from September 2014 to September 2015. A questionnaire was designed in Spanish in web survey format to allow it to be completed online. A convenience sample was selected using the snowball technique (Taylor & Bodgan, 1986). First, we contacted immigrants by establishing contact with people through other acquaintances. With the immigrant population the chain began with 7 people in the case of the Spanish population living in Germany

(Berlin and Munich) and with 20 people for the Spanish population in United Kingdom (London, Manchester, Bristol, Cambridge, and Oxford). Data were collected in these cities because they are important centres for the Spanish immigrant population and because we had contacts there. The difficulties of access to the immigrant population and the lack of knowledge of their characteristics and real size make the snowball technique appropriate (Heckathorn, 2011). Snowball sampling is a non probability approach to the sampling design and inference used with hard-to-reach or hidden populations because sampling these populations is difficult. However, this technique has the drawbacks of low representativeness and similarity bias. To reduce the bias of this technique and make contact with persons in others cities, a call for participation was made on 22 social network groups of Spanish immigrants (for example, *Españoles en Alemania: en Colonia, en Leipzig, en Munich, en Stuttgart o en Hannover; Españoles en Inglaterra: en Newcastle, en Manchester, en Sheffield, en Bristol, en Oxford o en Liverpool*). Recent research with a Spanish immigrant population to Europe has shown that the web survey system is a method of collecting data that offers the same guarantees as face-to-face or by telephone (Gómez-Frías, 2017). Inclusion criteria were being a Spanish national, being born in Spain, having emigrated for lack of work in Spain, and being aged between 18 and 65. Spanish immigrants who have been immigrants for more than 10 years and migrated for other reasons were excluded. In all cases, information was provided on the objectives of the research, permission to use the data was requested, and anonymity and confidentiality were assured. The procedures were in accordance with institutional, national, and international (APA) ethics guidelines.

This was followed by obtaining a sample of non-immigrants using the procedure described above, through 26 people from different autonomous communities of Spain. In this case inclusion criteria were being a Spanish national, born in Spain, aged between 18 and 65. The immigrant group (Spanish people living in the European Union) included people seeking employment but not refugees or students. The non-immigrant group (Spanish people in Spain) was equivalent in relation to educational level, sex, employment situation, and employment quality.

## Variables and Instruments

All participants responded to socio-demographic and psychological adjustment issues. Immigrants also responded to questions about the characteristics of the migratory process. The characteristics of the migratory process have been defined based on Berry's model of acculturation stress (Berry, 1997). As indicators of psychological adjustment, we analyzed perceived stress (Perceived Stress, PSS-14) and mental health problems (Mental Health, GHQ-28). These two scales are non-specific to measuring the acculturation process but were chosen in order to compare the immigrant and the non-immigrant population.

**Socio-demographic characteristics.** An ad hoc questionnaire was administered to collect information on socio-demographic characteristics, including sex, age, educational level, and employment characteristics in origin country.

**Migratory characteristics.** The group of immigrants were asked to respond to questions related to the length of their stay abroad, the reason for having emigrated, their level of English/German, and their employment situation in the host country. Two main migration protective factors were also assessed: fulfilment of migration expectations and employment quality.

**Fulfilment of migration expectations.** This was measured by two questions: "To what extent have you achieved the objectives that you set prior to emigrating?" with 5 response options (1 = *not at all,* 5 = *significantly*) and "How is your current situation compared to what you hoped it would be prior to emigrating?" with 5 response options

(1 = *much worse*, 5 = *much better*). Cronbach's alpha for fulfilment of migration expectations was .70.

**Employment quality.** This was also calculated, taking into account the need for improvement of their employment situation based on one item ("To what extent do you need to improve your current employment situation?"), using a 5-point Likert response format (5 = *not at all,* 1 = *significantly*).

**Perceived stress.** Perceived Stress Scale (PSS-14, Cohen, Kamarck, & Mermelstein, 1983; Spanish version, Remor, & Carrobles, 2001). This scale measures the extent to which life events are undesirable, unpredictable, or uncontrollable. It is composed of 14 items (e.g., "In the last month, how often have you felt that you were unable to control the important things in your life?") with 5 response options (0 = *never,* 4 = *very often*). Cronbach's alpha was .86.

**Mental health.** General Health Questionnaire (GHQ-28, Goldberg, 1972; Spanish version, Lobo, Pérez-Echevarría, & Artal, 1986). This consists of 28 items (e.g., "Have you been getting scared or panicky for no good reason?") for detecting mental health problems suffered recently. The questionnaire is grouped into four sub-scales: somatic symptoms, anxiety/insomnia, severe depression (three clinical internalizing symptoms), and social dysfunction. Each sub-scale consists of 7 items with four progressively worsening response options with Likert scores (0, 1, 2, 3). The GHQ scores (0, 0, 1, 1) are used to identify the *prevalence of clinical symptoms.* A score of 0 is assigned to responses 0 and 1, and 1 to responses 2 and 3. The cut-off score is 5/6 (no case/case). Cronbach's alpha for the total scale has been excellent ($\alpha$ = .92) and acceptable for all sub-scales (somatic symptoms, $\alpha$ = .85, anxiety/insomnia, $\alpha$ = .89, and severe depression, $\alpha$ = .74, social dysfunction, $\alpha$ = .82).

## Data Analysis

Data analysis was carried out using the SPSS program, version 23. The percentages and mean values of the socio-demographic characteristics of the group of immigrants were obtained first. The Student's *t* test was applied to compare certain socio-demographic characteristics (education level, host language competence, employment quality in host and origin countries) between men and women. This was followed by an analysis based on contingency tables with a full sample to establish any significant differences in the prevalence of clinical symptoms (dichotomous variable: case, no case) according to the immigrant condition or sex. The chi-square test of independence was used to determine if there was a significant relationship between each pair of variables, while a contingency coefficient was obtained to calculate effect size. However, Student's *t*-test was applied to compare stress perceived as a function of immigrant condition and sex.

A multivariate analysis of covariance (MANCOVA) was conducted, with the immigrant condition as the independent variable and two covariates (female sex and unemployment condition) and the scores of mental health (social dysfunction and three clinical internalizing symptoms) and perceived stress being the dependent variables. Wilks' lambda was used to test whether the mean score of immigrants and non-immigrants is the same across four variables regarding mental health and perceived stress simultaneously, after adjusting for the effect of female sex and unemployment condition.

The EQS 6.2 program (Structural Equation Program) was also used to evaluate the suitability of the proposed model of psychological adjustment in immigrants, and equivalence is based on the analysis of covariance structures. The following latent variables were included in the model: migration protective factors (indicators: fulfilment of migration expectations and employment quality), and internalizing symptoms (indicators: somatisation, anxiety-insomnia, and severe depression). Moreover, three observed variables were included: perceived stress, social dysfunction, and female sex. Perceived stress

was also included in the model as a meditational variable between protective migration factors and internalizing symptoms or social dysfunction. Adjustment indexes were based on the robust method owing to the non-normal nature of the multivariate distribution (Mardia's standardised coefficient = 12.66). Although it was then thought that a RMSEA (root mean square error of approximation) value lower than .08 is considered a good fit (MacCallum, Browne, & Sugawara, 1996), more recently, a rigorous upper limit of .07 (Steiger, 2007) seems to have become the general consensus amongst experts in this area. The practical indexes used were CFI (comparative fit index), NNFI (non-normed fit index), and IFI (incremental fit index); a value above .90 was expected for these indicators (Bentler 2006). CFI is one of the most popularly reported fit indexes given that it is one of the measures least affected by sample size (Fan, Thompson, & Wang, 1999), with a value of CFI ≥ .95 currently established as sign of good fit (Hu & Bentler, 1999).

Multigroup equivalence across two groups (men and women) was tested following the procedure of Byrne (2006). The assessment strategy to determine evidence of invariance in multigroup structure involves the $\Delta\chi^2$, and the Satorra–Bentler scaled chi-square difference test was also calculated ($\Delta$S-B$\chi^2$). However, this value is as sensitive to sample size and non-normality as the $\chi^2$ statistic itself, and researchers thus consider it to be an impractical and unrealistic criterion on which to base evidence of invariance (e.g., Cheung & Rensvold, 2002). For this reason, two additional criteria were considered, as recommended by Cheung and Rensvold (2002): (a) the difference in CFI ($\Delta$CFI) that should be equal or lower than .01 and (b) the difference in RMSEA ($\Delta$RMSEA) that should be equal or lower than .015.

## Results

### Socio-demographic and Migratory Process Characteristics of the Immigrant Group

This is a recent wave of migration, with around 90% having emigrated in Europe fewer than 3 years. Prior to emigrating, 27% had been unemployed, while only 12% were currently out of work. Table 1 presents socio-demographic and migration process variables by sex among Spanish immigrants. Women immigrants were younger than men immigrants and had higher level of English or German. However, there were not differences in the educational level or current employment quality of women.

### Migration Process, Mental Health and Sex Differences

Table 2 presents data analyzing the prevalence of clinical symptoms as a function of immigrant condition and sex. On the one hand, there were no differences between immigrants and non-immigrants in regard to the prevalence of clinical symptoms: somatisation, $\chi^2(1, N = 941) = .21$, $p = .833$; anxiety/insomnia, $\chi^2(1, N = 941) = 1.19$, $p = .27$; depression, $\chi^2(1, N = 941) = 1.16$, $p = .28$; social dysfunction, $\chi^2(1, N = 941) = .63$, $p = .43$; and perceived stress, $t(426.54) = .83$, $p = .35$. On the other hand, we can see that in the group of immigrants, women

presented a slightly higher prevalence of somatisation (8%) and anxiety/insomnia (16%) compared to men (3% and 10%, respectively) ($p < .05$). The finding that perceived stress level was higher in women immigrants ($M = 1.84$) than men immigrants ($M = 1.66$), $t(717) = 3.45$, $p < .01$, was consistent with this result. When women were selected, women immigrants showed more anxiety/insomnia symptoms (16%) than women non-immigrants (9%), $\chi^2(1, N = 608) = 4.16$, $p = .04$, $r = .08$.

Furthermore, the overall effect of being an immigrant was determined by performing a MANCOVA, with immigrant status being considered as a between-subject factor after adjustment for female sex and unemployment. The results showed significant effects for the covariate female sex, Wilks' $\lambda(4, 934) = 8.82$, $p < .001$, $\eta^2 = .032$, and for unemployment, Wilks' $\lambda(4, 934) = 7.79$, $p < .001$, $\eta^2 = .036$. However, the multivariate effect for immigrants was not significant, Wilks' $\lambda(4, 934) = .72$, $p = .575$.

**Table 1.** Percentages and Means of Socio-demographic and Migration Variables of the Immigrant Group

| | Women ($n = 457$) | Men ($n = 262$) | $\chi^2/t$ | $p$ |
|---|---|---|---|---|
| Age | 27.98 | 30.06 | $t(712) = -4.62$ | .000 |
| **Time as immigrant** | | | | |
| 0-1 year | 62.4% | 63.2% | | |
| 1-3 years | 24.6% | 28.0% | $\chi^2(4) = 6.13$ | .105 |
| 3-5 years | 5.1% | 5.4% | | |
| More than 5 years | 8.0% | 3.4% | | |
| **Education** | | | | |
| Education level | | | | |
| Primary school | 0.7% | 2.7% | | |
| Secondary school | 2.9% | 5.8% | | |
| Vocational training | 14.9% | 16.7% | $\chi^2(4) = 9.81$ | .054 |
| University graduates | 78.7% | 71.7% | | |
| PhD | 2.9% | 3.1% | | |
| Level of English/ German | 6.29 | 5.74 | $t(712) = 3.33$ | .001 |
| **Employment** | | | | |
| Unemployed prior to emigrating | 26.7% | 27.5% | $\chi^2(1) = 0.052$ | .443 |
| Currently work | 87.7% | 89.3% | $\chi^2(1) = 0.396$ | .308 |
| Currently work status | | | | |
| Worst | 23.6% | 20.9% | | |
| Similar | 22.1% | 20.9% | $\chi^2(4) = 1.01$ | .605 |
| Best | 54.2% | 58.2% | | |
| Employment quality | 2.34 | 2.16 | $t(712) = 1.76$ | .079 |
| Migration expectations | 3.25 | 3.30 | $t(707) = -1.04$ | .302 |

### Relationship between Migration Protective Factors and Variables Associated with Mental Health

Table 3 highlights the fact that migration expectation fulfilment was inversely correlated with perceived stress ($r = -.52$, $p < .001$) and above all with two mental health problems (from anxiety/insomnia, $r = -.39$, $p<.001$, to social dysfunction, $r = -.43$, $p < .001$). The fulfilment of migration expectation correlations were higher than the correlations associated with employment quality. Moreover, the female sex

**Table 2.** Prevalence of Mental Health as a Function of Immigrant Status and Sex

| | Non-immigrant group ($n = 222$) | | | | | Immigrant group ($n = 719$) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Women | Men | $\chi^2$ | $p$ | $r$ | Women | Men | $\chi^2$ | $p$ | $r$ |
| Social dysfunction | 5% | 4% | 1.12 | .73 | .02 | 5% | 2% | 2.44 | .12 | .06 |
| Internalizing symptoms | | | | | | | | | | |
| Somatisation | 7% | 3% | 1.75 | .19 | .09 | 8% | 3% | 5.17 | .02 | .08 |
| Anxiety/insomnia | 9% | 14% | 1.16 | .28 | .07 | 16% | 10% | 5.85 | .02 | .09 |
| Severe depression | 1% | 4% | 1.85 | .17 | .09 | 1% | 2% | 1.23 | .23 | .05 |

*Note.* r = contingency coefficient.

**Table 3.** Correlations between Observed Variables of the Model (*N* = 719)

| Variables | Min-Max | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| Migration protective factors | | | | | | | | | | |
| 1. Migration expectations fulfilment | 1-5 | 3.27 | 0.68 | - | | | | | | |
| 2. Employment quality | 1-5 | 2.28 | 1.27 | .46** | - | | | | | |
| Perceived stress and mental health | | | | | | | | | | |
| 3. Perceived stress | 0-4 | 1.77 | 0.68 | -.52** | -.35** | - | | | | |
| 4. Somatisation | 0-3 | 0.82 | 0.57 | -.27** | -.20** | .50** | - | | | |
| 5. Anxiety/insomnia | 0-3 | 0.85 | 0.75 | -.39** | -.32** | .68** | .67** | - | | |
| 6. Severe depression | 0-3 | 0.47 | 0.44 | -.38** | -.28** | .50** | .38** | .51** | - | |
| 7. Social dysfunction | 0-3 | 0.89 | 0.50 | -.43** | -.30** | .47** | .39** | .50** | .45** | - |
| Sex | | | | | | | | | | |
| 8. Female | | - | - | -.04 | .07 | .13** | .20** | .16** | .04 | .14** |

*\*p < .05, \*\*p < .01.*

was associated with greater perceived stress, somatisation, anxiety/insomnia, and social dysfunction.

## Immigrant Psychological Adjustment Model

The corresponding confirmatory factor analysis was applied in order to verify the relevance of the proposed model. All factor loadings and associations between latent variables, perceived stress, and social dysfunction were significant (*p* < .001). Furthermore, being female correlated with perceived stress (*p* < .01) and with internalizing symptoms (*p* < .001). The adjustment indexes of the measurement model were acceptable, S-B $\chi^2$(13, *N* = 719) = 63.12, CFI = .97, NNFI = .93, IFI = .97.

The model of immigrants' psychological adjustment based on the mediational effects of stress experienced is presented in Figure 1. The adjustment indexes of this model were acceptable, S-B $\chi^2$(14, *N* = 719) = 60.71, CFI = .97, NNFI = .94, IFI = .97, RMSEA = .069. The model explained 58% of the variance in internalizing symptoms. The migration protective factors predicted perceived stress (β = -.62, *p* < .001), while stress predicted internalizing symptoms (β = .68, *p* < .001). Therefore, the migration protective factors had direct effects on internalizing symptoms (β = -.13, *p* < .01) and social dysfunction (β = -.36, *p* < .001) as well as indirect effects through perceived stress (β = -.42, *p* < .001). Female sex was a significant predictor of perceived stress (β = .10,

*p* < .01), somatisation (β = .13, *p* < .001) and anxiety/insomnia (β = .07, *p* < .05).

## Equivalence of the Immigrant Psychological Adjustment Model in Men and Women

Having established configural invariance based on men's group and women's group (baseline of the multi-group model), the invariance of parameters was supported by the corresponding analyses for the measurement and structural invariance (Table 4).

In this study the ΔCFI values were lower than .01 in the CFI and RMSEA indexes in terms of measurement invariability. Furthermore, minor changes observed in the goodness-of-fit indexes are compatible with the structural invariance found in both groups. The goodness-of-fit results related to the invariant causal structure test showed a general equivalence across men and women. Evidence of non-invariance based on the Lagrange Multiplier Test was identified in two cases: factor loading of anxiety/insomnia onto internalizing symptoms latent factor (*p* < .025), and factor loading of migration expectation fulfilment onto protective migration latent factor (*p* < .017).

Summing up, based on these findings it can be concluded that, with exception of the two specified factor loadings (anxiety and expectation fulfilment), the hypothesized structural model of psychological adjustment for immigrants is equivalent across two
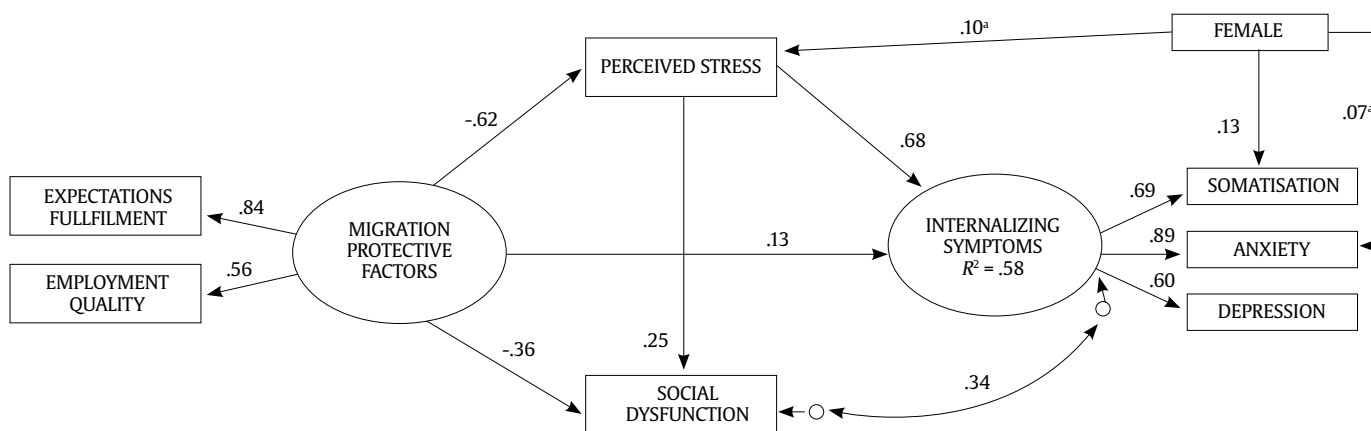


**Figure 1.** Immigrant Psychological Adjustment Model
*Note.* Fit indexes for structural model: S-B $\chi^2$(13, *N*=719)=63.12, CFI=.97, NNFI=.93; IFI=.97; RMSEA=.069. All estimated parameters are standardized. All factor loadings and regression coefficients are significant according to robust standard errors, *p* < .01, except .07[a] = *p* < .05.

**Table 4.** Tests of Equivalence of Psychological Adjustment Model for Immigrants

| Model | S-B $\chi^2$ | CFI | RMSEA | $\Delta$S-B $\chi^2$ | $\Delta$CFI | $\Delta$RMSEA |
|---|---|---|---|---|---|---|
| Men (*N* = 262) | 26.91 (10) | .954 | .082 | - | - | - |
| Women (*N* = 457) | 29.13 (10) | .980 | .065 | - | - | - |
| Overall (*N* = 719) | 48.73 (10) | .971 | .074 | - | - | - |
| Configural equivalence | 42.21 (20) | .975 | .066 | - | - | - |
| Measurement equivalence | 59.99 (26) | .962 | .072 | 17.78 (6) | .013 | .006 |
| Structure equivalence | 62.50 (28) | .961 | .070 | 20.29 (8) | .014 | .004 |
| Regression coefficient equivalence | 64.39 (29) | .959 | .069 | - | - | - |

groups (men and women). Given the rigor of the equality constraints imposed, these results provide empirical evidence in favor of the equivalence of the proposal model in men and women.

## Discussion

The novelty of the present study was the use of a homogeneous group of immigrants and the study of mental health (three clinical internalizing symptoms and social dysfunction), achieving a more parsimonious model including only two protective factors (fulfilment of migration expectations and employment quality), and studying the structural invariance as a function of sex, through the multigroup structural equation approach. The Spanish immigrants in Germany and United Kingdom in this sample are relatively young and emigrated less than three years ago. They have a high educational level and command of the language spoken in the host country, the majority have a job, and consider that their migration expectations are being fulfilled.

One purpose of this study is to verify if the migration process is related to poorer mental health. It was expected that perceived stress and mental health of the Spanish immigrants were similar to that of Spanish people who remained in their country of origin. The results obtained support this hypothesis, due to the fact that perceived stress and mental health (prevalence and scores of symptoms of social dysfunction and internalizing symptoms) were similar in both groups. These results are consistent with those obtained by previous studies in European countries (Elgorriaga et al., 2016; Glaesmer et al., 2009) and other countries (Vega et al., 1998) comparing a group of immigrants with another group of people from the country of origin. In the research carried out by Glaesmer et al. (2009) in the European context, a discovery was made to the effect that, when migration is not associated with a low SES, both immigrants and native population presented a similar level of mental health. However, Vega et al. (1998) found that despite very low education and income levels, Mexican Americans had lower rates of lifetime psychiatric disorders compared with rates reported for the US population, and as well as similar rates to Mexicans in Mexico. All these findings support the idea that the migration process is not always associated with a higher level of perceived stress and poorer mental health. The fact that Spanish people emigrating to other countries in the European Union do not present greater levels of stress or poorer mental health than those who remain in their country of origin might be explained by individual favourable factors related to the average SES level of immigrants combined with the availability of employment for immigrants in Germany and the United Kingdom. Education is perhaps the most basic SES component added to more occupational opportunities and life skills to gain more access to resources to promote health (Ross & Wu, 1995). Furthermore, emigrating to other European countries presents additional advantages for Spaniards, such as legal status, relative similarities in terms of culture (facilitating the understanding of the environment and preventing high levels of cultural shock) (Ward & Kennedy, 1999), and geographical proximity (making it easy to travel to the country of origin and facilitating visits from family and friends).

The hypothesis stating that female immigrants would show slightly higher perceived stress and mental health than male immigrants has been partially confirmed. In the present study females presented very slightly higher rates of prevalence in somatisation and anxiety/insomnia. These mental health problems could be explained by slightly higher perceived stress of female immigrants compared to male immigrants. It is known that female immigrants are more psychologically vulnerable than male immigrants (e.g., Jasinskaja-Lahti et al., 2006; Singh et al., 2015). However, the similar level of education and employment situation among men and women, as well as the empowerment of European women in comparison to non-Western immigrants, could explain that there are hardly any differences in stress and health between immigrants among both sexes.

The mediational role of perceived stress in the relationship between protective factors of migration (fulfilment of migratory expectations and employment quality) and mental health was confirmed (see Figure 1). According to the third hypothesis, the fulfilment of their migration expectations and good working conditions were valid predictors of a lower level of perceived stress. On the one hand, in previous studies the fulfilment of immigrants' expectation was found to be a protective factor against perceived stress among Spanish immigrants in Europe (Elgorriaga et al., 2016) or Mexican immigrants in the US (Kiang et al., 2010). Moreover, fulfilment of economic expectations (Kiang et al., 2010) and social expectations (Mähönen et al., 2013) are associated with sociocultural and psychological adjustment. On the other hand, the failure of migration expectations being met has been linked to feelings of frustration (Hovey, 1999), while unrealistic expectations with regard to command of the language have been associated with high levels of stress (Katsiaficas et al., 2013). Burgoon (1978), in his theory of violation of expectations, has already suggested that unmet expectations tend to be accompanied by negative psychological reactions, whereas cases in which expectations are exceeded are accompanied by positive psychological reactions.

Results regarding good working conditions have also been confirmed by a variety of previous studies showing that the precarious working conditions of immigrants and being over-qualified for their job were associated with a higher level of stress and a poorer level of mental health of immigrants living in Canada (Dean & Wilson, 2009), Finland (Jasinskaja-Lahti et al., 2006), Denmark (Singhammer & Bancila, 2011), and Germany (Vallejo-Martín & Moreno-Jiménez, 2016).

Moreover, perceived stress significantly increased internalizing symptoms, as initially predicted. According to the SEM model, the predictive capacity of perceived stress for internalizing symptoms was more relevant than for social dysfunction. These findings are consistent with empirical evidence in favour of the association between acculturation stress and internalizing symptoms (Katsiaficas et al., 2013). Specifically, Katsiaficas et al. (2013) found that acculturative stress had a direct effect on internalizing symptoms in adolescent immigrants of the first generation living in the US, and indirect effects mediated by emotional and academic social support. Moreover, Singhammer and Bancila (2011) investigated the relationships of stressful events with self-reported mental health

problems based on ethnic minorities in Denmark. Immigrants perceived the perils of daily life as more stressful in comparison with host nationals. The prevalence of mental health problems was higher in all ethnic groups in comparison with Danish people.

The last hypothesis on the validity of the meditational stress model for men and women was confirmed. The multigroup structural approach verified that the proposed model is basically equivalent, with exception of the two specified factor loadings (protective migration factors and internalizing symptoms). The most important finding of this study is the strong empirical evidence of the mediational effect of stress in regard to internalizing symptoms, with only two migration protective factors (fulfilment of expectations and employment quality). This means that the immigrant psychological adjustment model is valid for both men and women.

While this study presents certain limitations, such as biases arising from the online gathering of information or the problems inherent to transversal research, the comparison group obtained is suitable for verifying that the mental health of the Spanish immigrant population is similar to that of the population of origin. However, it is not possible to establish causal relations between the acculturation process and psychological adjustment. The online gathering and snowball technique does not provide access to all population sectors and has the inconvenience of similarity bias. However, previous studies indicate that snowball sampling is adequate for hidden populations (when population size and characteristics are unknown) (e.g., Heckathorn, 2011). Although there are data on the Spanish immigrant population in Germany and the UK (INE, 2017c), it is known that there are many people who do not register officially when they emigrate. Moreover, it should be noted that 84.6% of Spanish people between 16 and 74 years of age use Internet, particularly younger people who are mostly represented in this sample (98% of 16 to 24-year-olds; 96.3% of 25 to 34-year-olds, and 95.8% of 35 to 44-year-olds) (INE, 2017a). For this reason, it was an effective strategy for obtaining a broad sample of Spanish immigrants and an equivalent control group. More specifically, the use of a broad variety of social media in the present study allowed this bias to be partly mitigated (22 forums, 4 general for United Kingdom, 3 general for Germany, and 15 for specific cities). In addition, the online gathering guarantees anonymity and increases confidentiality. In fact, there was a good completion of the questionnaire and only five participants started to answer it and left it.

In summary, the perceived stress and mental health of Spanish immigrants in other European Union countries is similar to the population of origin, with hardly any differences between men and women. The privileged migratory conditions characterised by the favourable personal conditions of immigrants (e.g., high educational level and language knowledge) along with the social (cultural values) and contextual conditions of the host country (employment for immigrants, few legal barriers, or positive political situation) tend to generate fewer internalizing symptoms and lower social dysfunction. Taking into account that the immigrant psychological adjustment model is valid for men and women, interventions aimed at improving immigrants' psychological adjustment should involve stress prevention and promote mental health of immigrants with particular emphasis on migrations with unfavourable conditions. In the current context of Spanish immigrants, migration expectations and employment quality of immigrants are relevant for their psychological adjustment. Almost all migration expectations could be addressed by a psychosocial intervention in the pre-migratory or post-migratory stage.

## Conflict of Interest

The authors of this article declare no conflict of interest.

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